
**Proceedings of the
09th National Conference on
Library and Information Science**

NACLIS 2012

**“EMPOWERING USERS, LIBRARIES &
LIBRARIANS IN THE KNOWLEDGE
SOCIETY”**



**Sri Lanka Library Association
21st June 2012
Colombo**

**Proceedings of the
09th National Conference on
Library and Information Science**

**Proceedings of the
09th National Conference on
Library and Information Science**

NACLIS 2012

**“EMPOWERING USERS, LIBRARIES &
LIBRARIANS IN THE KNOWLEDGE
SOCIETY”**



**Sri Lanka Library Association
21st June 2012
Colombo**

© Sri Lanka Library Association, 2012

Proceedings of the 09th National Conference on Library and Information Science.

Available online from www.slla.org.lk

Held at Hotel Renuka, Colombo 03 on 21st June 2012.

Chief Editor

Dr. Ruwan Gamage

Editorial Panel

Mr. Nishan Punchihewa

Ms. [Manoja Samaradiwakara](#)

Ms. Dilmani Warnasuriya

Dr (Ms) Anusha Wijayarathne

Review Panel

Dr. Chaminda Jayasundara

Ms. Swarna Jayatillake

Ms. Pushpamala Perera

Ms. [Manoja Samaradiwakara](#)

Dr. (Ms) Wathmanel Senevirathne

Ms. Dilmani Warnasuriya

Ms. Shivanthi Weerasinghe

Dr. Lalith Wickramanayaka

Dr. (Ms) Anusha Wijayarathne

Mr. KGG Wijeweera

NAC LIS 2012 Programme

Committee

Ms. Chandrika Dabare

Ms. Swarna Jayatillake

Mr. Anton D. [Nallathamby](#)

Ms. Pushpamala Perera

Dr. (Ms) Wathmanel Senevirathne

Ms. Dilmani Warnasuriya

Ms. Shivanthi Weerasinghe

All names in the above lists are in alphabetical order by last name.

This publication was sponsored by the Bank of Ceylon (BOC)

The views expressed in this publication are those of the authors and do not necessarily represent those of the Sri Lanka Library Association.

Contents

Preface	iv
President's Message	v

#	<i>Full papers</i>	
01	Research Interests of University Librarians in Sri Lanka; an Investigation, by Geethani Attanayake	2
02	ලාංකීය පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගනිමු, ආර්.ඩී. ආනන්දතිස්ස (Expanding Boundaries in Sri Lanakan Library Services, by R.D.Anandatissa)	16
03	Level of User satisfaction in an Academic Library, by Anura Kiriella	30
04	Information Seeking Behaviour of Nursing Students; A Survey in University of Peradeniya, by K.P.K. Dambawinna	44
05	An Information Audit at the Main Library, Eastern University of Sri Lanka, by M.N. Ravikumar & T.Ramanan	62

06	Automatic Document Classification Using a Domain Ontology, by P. K. C. M. Wijewickrema	85
07	E-Journal Applications in Sri Lankan University Libraries, by Tharanga Ranasinghe	108

Short papers (Extended abstracts)

08	අන්තර්ජාල තොරතුරු ගවේෂණය කෙරෙහි ද්විතියික පාසල් සිසුන් දක්වන කුසලතා, කේ.ඒ.එම්. අල්විස් (Skills of Secondary School Children in Exploring Information from Internet, by K.A.M. Alwis)	123
09	A Conceptual Framework for Information Literacy Education in Sri Lanka, by Prasanna Ranaweera	132
10	ප්‍රජා තොරතුරු මධ්‍යස්ථානයක් ලෙස මහජන පුස්තකාලයේ කාර්යභාරය, ජේ.ඊ.ඒ. සෙව්වන්දි ජයසිංහ (Delivering Community Information; Experiences of the Aturugiriya Public Library, by J.E.A.Sevwandi Jayasinghe)	138
11	Investigation on Effectiveness of Applying Essential Oils Fumigation Technology in Libraries for Pest Control, by T.C.P. Thilakarathne & I. Thumpela	146

12	Managing Automation in a Multi-library Environment, by S.K. Illangarathne	155
13	Lighting the Digital Darkness: Implementation of a University Digital Repository, by Harsha Balasooriya, A.S. Siriwardene, & S.K. Illangarathne	163

Poster papers (Abstracts)

14	Enhancement of the Library System Through Seeping Technology into Library Services, by W.M. Thusithakumari	171
15	ආසියාවේ දැනුම් කේන්ද්‍රය කරා යන ගමනේ දී පුස්තකාලයේ දායකත්වය ඩබ්ලිව්.එම්. කුමුදිනි (The Contribution of Libraries in Sri Lanka's March Towards the Wonder of Asia, by M.D.R. Kumudini)	175
16	Public Access to ICT, by Mohammed Sajeer	180

Author Index

Preface

It is a pleasure to welcome you to NACLIS 2012, the 09th National Conference on Library & Information Sciences. Over the past years, NACLIS has shown its importance and quality as the only national conference in Library Science in Sri Lanka. Appreciate those authors contributing to the conference this year, representing academic, special, public & school library sectors. It is also my duty to appreciate the role of employers, peers, and family of contributors. It is hard to carry out such academic work without having support from them.

We welcome the NACLIS 2012 participants from all over the country. We hope that you will find the conference both enjoyable and valuable. It is expected to be rich in content and discussion, and facilitate networking among professionals in library & information sciences, and allied fields.

We are also honored to have Professor Kshanika Hirimburegama, Vice Chancellor, University of Colombo as our chief guest, and Mr. Chanuka Wattegama, Senior Research Manager of LIRNEasia as the keynote speaker. Invited presenters of the three theme papers also will add colour to the event.

It is indeed a gratification to preside over this prestigious conference, this year. The successful organization of NACLIS required the talents, dedication and time of many volunteers and strong support from sponsors, without whom this would not be a reality.

Dr. Ruwan Gamage,
Convenor – NACLIS 2012

Message from the President, SLLA

The Sri Lanka Library Association is proud to present the 09th National Conference on Library and Information Science, NACLIS 2012. Continuous research and research presentations are the signs of forward looking, vibrant, active professionals in any field. We are glad to see an increasing number of research projects are being carried out by the members of the Library and Information Science field in Sri Lanka. Being a relatively new as well as a fast growing discipline, it offers a vast array of opportunities for a researcher. Now with more openings available for higher studies, librarians will have to develop competencies in research.

I sincerely thank our Chief Guest Prof. Kshanika Hirimburegama, Vice Chancellor, University of Colombo for gracing the occasion amidst her busy schedule. She is not only a skillful manager but an eminent researcher and scientist as well. We are also grateful to Mr Chanuka Wattegama, a well known, ICT specialist from LIRNEasia for agreeing to deliver the keynote address.

Special appreciation is due to the resource persons of the conference for their research work and also for agreeing to share it with a wider audience.

Dr Ruwan Gamage the Conference Chair, the Editorial Panel and the NACLIS 2012 Programme Committee worked very hard during the last few months to make the event a success. The senior professionals in the review panel helped in reviewing the papers. I thank them all. Finally while welcoming all the participants for the conference, I wish the NACLIS 2012 all success.

Upali Amarasiri
President/SLLA

Full Papers

Research Interest of University Librarians in Sri Lanka: an Investigation

M.K. Geethani Attanayake

geethani@kln.ac.lk

*Postgraduate Institute of Pali and Buddhist Studies - University of
Kelaniya, Sunethradevi Vidyayathana Premises, Pepiliyana-
Borelesgamuwa, Colombo.*

Abstract

This paper focuses on the aspect of academic librarianship which deals with the research interest of university librarians in Sri Lanka. This is a survey to examine whether the academic librarians are active researchers who nourish the universal knowledge with new investigations on par with the faculty. The population of the study consisted of assistant and senior assistant librarians selected from universities in Sri Lanka. The sample included 50% from the population and random sampling technique was employed to select the research subjects. Data gathering was done by a questionnaire survey and the collected data was analyzed by using statistical techniques available in Microsoft Excel Software. The study found that the majority of librarians were interested in doing research and that they were active and committed researchers. Many librarians were motivated to conduct research because of the intellectual curiosity. Another key finding of this study is that most librarians conduct their research related to university setting. The greatest obstacle faced by librarians, according to the study,

is that they did not have adequate time and facilities to carry out research whilst performing their professional work. The findings add to the literature by identifying a range of factors that are significant.

Key words: *Academic librarians, Sri Lanka, research interest, university librarians*

1 Introduction

Library is considered as the intellectual focal point of the university. “Establishment of the first library school in 1887 at Colombia university - USA, boosted the development of academic librarianship as a profession and validated the professional literature in the form of research articles, theses, text-books etc.” (Piyadasa, 2010) The academic responsibilities of the university librarians can be identified under four broad areas as given below.

- a. Professional performance
- b. Research, scholarly and other creative activities
- c. Service to the university and society.
- d. Continuing professional growth

Hence librarians are committed to the university’s teaching and research mission. As partners in the learning process librarians are promoters of information literacy. In support of research, they ensure continued access to necessary information resources and have a strong voice alongside faculty, on issues of change in scholarly communication.

The academic status of the Sri Lankan university librarians have been assured by the Universities Act in 1978

(Universities Act, 1978). It comprises many things in common with the teaching profession. In accordance with the University Grants Commission (UGC) Circular No. 921 issued on 2010, university librarians in Sri Lanka are required to conduct research and need to publish scholarly work in the same way as faculty to achieve their promotions. Without research there is no yardstick to measure the scholarly productivity of academic librarians and participation in research activities help to gain credibility as academics. In Ghana, Kadari (2000) articulates that the librarians those who need academic status, must have a good record of research and publications. Further Dahiru and Benson (2006) also agree with this and posit that, "to effectively plan their roles as academics, librarians are expected to teach, conduct research and disseminate their findings as well as carry out administrative duties." According to the above views, librarians need to engage in regular research to increase their knowledge and skills of professional practice. Therefore librarians have the responsibility of contributing to their profession through writing articles, conducting research, presenting papers and participation at professional conferences. Unfortunately, comparing to the faculty, engagement of university librarians in research, is not prominent in the Sri Lankan context. But, many university librarians in Sri Lanka have been enriched with comprehensive research skills, conduct quality research and present their findings in scientific journals, conferences and colloquiums; locally and internationally. This is an attempt to unveil Sri Lankan academic librarians' research interests and their views on engaging in research.

1.1 The problem

'Research' has always occupied a special place in the field of academia and especially university academics have increasingly been interested in involving themselves in conducting research. In Sri Lankan universities, faculty and librarians have been accorded a status equivalent (with the common name as teachers) with regard to rights and responsibilities. Both groups have a responsibility to disseminate knowledge through teaching and research. But the involvement of librarians in research and scholarship may not be widely manifested. Whether they really engage in research while contributing as partners in the learning process is the matter of discussion here. The following research objectives were formulated to answer that problem.

1.2 Objectives of the study

Research is governed by the rule of objectivity. This research was done at the aim of the following objectives.

- a. To explore the involvement of research by university librarians
- b. To find out research interest of librarians
- c. To investigate the obstacles faced by librarians while doing research

2 Methodology

Data for this study was gathered from a questionnaire in late 2011 and early 2012. Forty assistant librarians (who completed Masters Degree) and senior assistant librarians in university libraries in Sri Lanka were randomly selected for

finding their views. Data was analyzed using statistical techniques available in Microsoft Excel.

3 Literature Review

As a popular discipline, library and information science has been extensively researched from a variety of perspectives, both locally and internationally. It is understandable that the large body of literature authored by librarians testify their involvement in research. But there is no evidence that this topic has been investigated in Sri Lanka. Such studies are rare in International literature too.

McMenemy (2010) discussed how far research culture can be fostered within library practice and how universities and library professionals can work together to strengthen this important area. Depending on the findings this author insists the dangers of a lack of a research culture present the profession with potential issues that must be addressed if it is to remain vital. This paper discusses further the challenges in creating a research culture in library practice, and as such offers a new debate on what key issues related to research impact on the profession of library and information science.

Olorunsola and Ibegbulam (2003) communicates that in order for librarians to achieve research success within the academic environment, a convenient working schedule equivalent to that of teaching colleagues should be available. To investigate this issue, a descriptive survey, including a questionnaire, was used to examine the opinions of selected academic librarians in Nigeria. Objective was to examine whether present (inflexible) working arrangements have any effect on the publication output of librarians. The study

revealed that the potential benefit of flexible working arrangements is widely accepted among academic libraries. The paper concludes by suggesting on the implementation of this new working arrangement, in order to tackle a problematic issue for academic librarians.

Mahmood and Shafique, (2010) conducted a research with the purpose of reviewing the changing scenario of research in Pakistan and the status of demand and supply of Library and Information Science (LIS) professionals with research qualifications to fill the leadership positions in Pakistan. The study explored that research activities are rapidly increasing in Pakistan, while there is a wide gap between demand and supply of LIS professionals with research qualifications. The researchers have furnished some recommendations for filling the identified gap.

Librarians at the Pennsylvania State University are consistently among the most published in academic library journals. A study conducted by Fennewald (2008) explored the various factors that contribute to active research among Pennsylvania State University librarians. Many librarians interviewed identified time as the major hindrance to accomplishing research.

4 Findings and Discussion

4.1 Demographic Characteristics

All the respondents who participated in the survey were assistant and senior assistant librarians of university libraries in Sri Lanka. A majority of them were between the ages of 30-50 (See table 01).

Table 1 - Demographic characteristics of respondents in the study n=40

Characteristic		Frequency	Percentage
Age	30+	08	20
	40+	28	70
	50+	04	10
Gender	Male	08	20
	Female	32	80

4.2 Involvement of university librarians in research

The study revealed that university librarians in Sri Lanka are active and committed researchers and they engaged in research in a wide variety of areas. Twenty one (21) librarians who participated in the study were involved in research at the time of the survey and all others confirmed that they have real interest for engaging in research activities.

4.3 Research Interest of Librarians

4.3.1 Interested Research Fields

LIS is an interdisciplinary field (Tejomurthy and Kumar, 1998) that relate to areas such as Management, Psychology and Information Technology. It embraces a variety of problems, professionals, organisations and intellectual commitments. Literature on LIS is, therefore, rich in interdisciplinary information. The librarians who participated in this study were interested on a wide range of areas of research. Table 2 illustrates that the majority of the

respondents (28) have chosen Information literacy as the most interesting research field.

Table 02 - Interested Research Fields of Librarians

Field of Research	Rank
Information literacy	1
Electronic medias	2
Information needs and seeking behavior	3
Information storage & retrieval	4
Librarianship	5
Library management	6
Information management	7
Other aspects of LIS topics	8
Personnel and training	9
Citation Analysis	10
Services and information transfer	11
Library networks	12
Library history	13
Publishing & Book History	14
Other subjects	15

The study found that some of the respondents are engaged in research outside the field of Library and Information Science too. The topics they selected were close to the discipline of their first degree. However it was evident that such instances are rare.

4.3.2 Preferred research type

The goal of the research process is to produce new knowledge or deepen understanding of a topic or issue. This process takes three main forms

- a. Exploratory research (which helps to identify and define a problem or question)
- b. Constructive research (which tests theories and proposes solutions to a problem or question)
- c. Empirical research (which tests the feasibility of a solution using empirical evidence). (Leshan, n.d.)

Out of the above three types of research, the study found that all respondents preferred empirical research.

4.3.3 Data Collection Methods in Preferential Order

Data Collection is an important aspect of any type of research. Researchers in the field of Library and Information Science typically rely on four methods for gathering information (Marshall & Rossman, 2010): (a) participatory observation (b) observing indirectly (c) survey (d) documentary analysis. This study found that most preferred data collection method of the respondents was survey method. The rank order of data collection method is shown in Table 03.

Table 03 - Data collection methods in preferential order

Method of Data Collection	Rank
Survey	1
Documentary analysis	2
Observing in-directly	3
Participatory observation	4

4.4 Need for research

Tejomurthy and Kumar (1998) believe that there are three main reasons to do LIS research. These are:

- a. Educational function - advanced studies in Librarianship
- b. Critical function - critical approach to librarianship
- c. Symbolic function - result of growing professionalism in library profession

This study found that seventy five percent (75%) of respondents conduct research to enhance their professional knowledge. In other words, they conduct research with the critical function as objective. Developing professionalism is also a significant reason. Yet, only a few are motivated to conduct research based on the educational function. Therefore, a majority of librarians are engaged in research for the purpose of satisfying intellectual curiosity.

4.5 Obstacles for doing research

University librarians provide support to members of the university community including students, researchers and lecturing staff. Typically, they will manage, organize, evaluate and disseminate information; teaching the students research skills and helping them locate the information while performing administration functions too. In addition to above conducting research also remains as an important component. Research needs people, brains, energy, time, and many more. Especially research is a time-intensive activity. Almost all librarians participated for this study

identified time as the major hindrance to accomplishing research

Conducting research is also an expensive work. The study found that librarians conduct research using their own finances or with the support of competitive research grants. The fact that most of librarians use their personal finances was seen to discourage their research work for some extent. It is also noted that Limited financial support was an obstacle faced by librarians engaged in research.

Conducting research is a labour-intensive activity. Qualitative research is much popular in the field of library science thus requires much labour support specially for data gathering and data entering. The study revealed limitation of support staff as another obstacle for conducting research.

5 Conclusion and Recommendations

The growing professionalism in the field of LIS calls for research that enhances the skills of the professionals, introduces new techniques capable of solving the emerging problems, and brings about an improvement in the field under concern. Research conducted by university librarians was found valuable to the individual, to the organisation, and to the profession. With respect to the first, research enhances the personal profile and caters to the professional development of individuals. With respect to the second, it enhances the reputation of the organization enabling it to achieve recognition both within and beyond. With respect to the third, the new knowledge created and disseminated by research helps enhance the reputation of the profession.

The study found that university librarians of Sri Lanka are active researchers who could make a productive contribution towards the entire academic community with respect to sharing of knowledge. Most librarians, however, were found to be confined to their own universities. Being stakeholders of a knowledge society their attention has to be diverted to national issues related to their profession with a view to discovering solutions that would not only nourish their field but also would make a worthwhile contribution towards the development of the country. Equipped with the necessary knowledge, skills and the reputation, university librarians were found able to make a meaningful contribution in this respect.

Based on the findings of the study presented above, the following recommendations are made to build up a strong research environment within the university library profession of Sri Lanka.

- a. The research skills of librarians should be systematically developed by providing them with a solid foundation in research methodology. The delivery modes recommended in this respect are workshops and seminars.
- b. University library duties and workflows should be restructured in such a way to create a sound research environment that supports the research activities of the library professionals.
- c. University librarians should be granted with fellowships to conduct productive research.
- d. The institutions should be encouraged to support the researchers with necessary financial assistance.

- e. Librarians those who have an interest, the motivation and aptitude for research should be encouraged and guided by senior professionals, top management and colleagues.
- f. The librarians should be encouraged to share their research findings in symposiums, conferences, colloquiums and scholarly journals.
- g. Lists of research completed by librarians should be published annually as a printed volume and in the web site of the University Librarians' Association (ULA).

To gain recognition as information professionals, university librarians similar to academics in other fields should maximize their actual involvement in research accordingly.

References

- Dahiru, B.Y., & Benson, T.A. (2006). Pre- and post-academic status publication output of professional librarians in Nigerian academic libraries: A case study of Ramat Library, University of Maiduguri, Nigeria. *Gateway Library Journal* 9 (1), 51-59.
- Fennewald, J. (2008). Research Productivity among librarians: Factors leading to publication at Penn State. *College and Research Libraries*, 69(2), 104–116.
- Kadiri, J. (2000). Academic statues for librarians in Ghanaian Universities: Challenge to stakeholders. *Gateway Library Journal*, 2(3), 97- 103.

Leshan, D. (n.d.). *Strategic Communication*. London: Pangpang. Unknown.

Mahmood, K., & Shafique, F. (2010). "Changing research scenario in Pakistan and demand for research qualified LIS professionals", *Library Review*, Vol. 59 Iss: 4, pp.291 - 303

Marshall, C., & Rossman, G. B. (2010). *Designing Qualitative Research*. SAGE.

McMenemy, D. (2010). Fostering a research culture in UK library practice: Barriers and solutions. *Library Review*, 59(5), 321–324.

Olorunsola, R., & Ibegbulam, I.J. (2003). Flexible working hours for academic librarians in Nigeria. *Library Review*, 52(2), 70 – 75.

Ranasinghe, P. (2010). Scholarship and Academic Librarianship. In *Proceedings of ICULA Conference* (pp.33-39)

Tejomurthy A., & Kumar, P.S.G. (1998). Research in library and information science. *DESIDOC Bulletin of information Technology*, 18(1), 11-18.

ලාංකීය පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගනිමු

ආර්. ඩී. ආනන්දනිස්ස
agathisi@yahoo.com

*පුස්තකාලය, ගම්පහ වික්‍රමාරච්චි ආයුර්වේද වෛද්‍ය විද්‍යායතනය,
යක්කල*

සාරාංශය

විවිධ ආර්ථික, සාමාජික හා දේශපාලනික සාධක නිසා පොදුවේ පුස්තකාල සේවයන්, පුස්තකාලයාධිපතිත්වයන් ක්‍රමයෙන් පවුටුවෙමින් හා අවනක්සේරුවට ලක්වෙමින් පවතින ආකාරය, විශේෂයෙන් විශ්වවිද්‍යාල පරිසරය ඇසුරෙන් විමසනය කිරීම මෙම ලිපියේ අරමුණ යි. එසේ ම එම ගැටලුවෙන් මිදී, ඉදිරියේ දී කටයුතු කළ යුතු ආකාරය ද මෙහි දී සාකච්ඡා කර ඇත.

බීජ පද: පුස්තකාලවේදීත්වය, පුස්තකාල ඉතිහාසය, පුස්තකාල වෘත්තිය

1 පුස්තකාලයාධිපතිත්වයේ ආරම්භය

පුස්තකාලයාධිපතිත්වය යන සංකල්පය අපරදිග හා පෙරදිග වශයෙන් ප්‍රධාන ක්ෂේත්‍ර දෙකක් යටතේ අධ්‍යයනය කළ හැකි ය. වර්තමාන අර්ථයෙන් පුස්තකාල වෘත්තිය ඇලෙක්සැන්ඩ්‍රියානු පුස්තකාලයෙහි සිට විකාශනය වේ. එය රාජකීය පුස්තකාලයක් වූ නිසා එහි පුස්තකාලයාධිපතිවරයා පත් කිරීමේ පූර්ණ බලතල හිමි වූයේ එරට අධිරාජ්‍යයාට ය. ඒ අනුව එවක පුස්තකාලයාධිපති තනතුර ගෞරවනවිත තනතුරක් බව පැහැදිලි වෙයි. පෙරදිග සම්ප්‍රදායට අනුව ද පුස්තකාල සේවය හා පුස්තකාලයාධිපතිත්වයෙහි මෙවැනි ප්‍රවණතා හඳුනා ගත හැකි ය. බුද්ධසෝම හිමියන්ට තම පාණ්ඩිතය ඔප්පු කරන ලෙස

මහාචාර්ය විසින් නියම කරනු ලැබීම හා සම්බන්ධ ප්‍රවෘත්තිය
එවැන්නකි.

පෙරදිග පුස්තකාල සම්ප්‍රදායයේ වැදගත්කම අපේ සම්භාව්‍ය
සාහිත්‍යයෙහි යෙදෙන පාරිභාෂික වචන මගින් ද හෙළි වෙයි.
ඉන්දියාවේ සම්භාව්‍ය වෛදික සාහිත්‍යයෙහි එන වේදයෙහි
පාරප්‍රාප්ත පිරිස හඳුන්වන වේදග්‍ර යන වචනයෙනි. බෞද්ධ
සම්භාව්‍ය සාහිත්‍යයෙහි සඳහන් වන භාණක නමැති වචනයෙන් ද
පුස්තකාල වෘත්තියට අදාළ එක් වෘත්තිය තත්ත්වයක් පෙන්වුම්
කෙරේ. දීප භාණක, මජ්ඣම භාණක, සංයුක්ත භාණක ආදී
වශයෙන් හැඳින්වෙන එකී කණ්ඩායම්වලට ඒ ඒ ධර්ම කොටස්
ආරක්ෂා කර ගැනීම, හැදෑරීම හා පවිත්‍ර ස්වරූපය රැක ගැනීමේ
වගකීම පැවරිණි.

ශ්‍රී ලංකාවේ අනුරාධපුර සමයේ සිට ආරම්භ වන පුරාණ රාජධානි
යුගවල පොත පත කියවන පිරිස ඉතා සීමිත වූ අතර එවක පැවතියේ
ශ්‍රාවක සමාජයකි. එවැනි සමාජයක අංග සම්පූර්ණ පුස්තකාල
වෘත්තියක් බිහි විය නො හැකි වුව ද, පුස්තකාලධිපතිත්වය හා
සම්බන්ධ විධිමත් සාකෂි රැසක් හමු වී ඇත. ඒ අතර පුස්තකාලවල
නම් ද පුස්තකාලයාධිපතිවරුන්ගේ නම් ද ඉතිහාස ගත වී තිබේ.

**2 නූතන පුස්තකාල වෘත්තියේ ආරම්භය හා ශ්‍රී ලංකාවේ පුස්තකාල
සේවය**

නූතන පුස්තකාල වෘත්තියේ ආරම්භය ක්‍රිස්තු වර්ෂ 1887 නිවයෝක්
නුවර කොලොම්බියා කොලීජියේ පුස්තකාලයාධිපතීන් පුහුණු
කිරීමේ මුල් ම ආයතනය (පුස්තකාල විදුහල) විවෘත වීම දක්වා දිව
යයි (Lahiri, 1999).

ශ්‍රී ලංකාවේ නූතන පුස්තකාල වෘත්තියේ ආරම්භය ඉංග්‍රීසි පාලන
සමය දක්වා දිව යන්නකි. කොළඹ ලංකා විශ්වවිද්‍යාල කොලීජිය
බිහිවීමත් සමග ම විශ්වවිද්‍යාල පුස්තකාල ව්‍යාපාරය ස්ථාපිත විය.
ලංකා විශ්වවිද්‍යාල පුස්තකාලය ආරම්භ වූයේ 1921 දී ය. ලංකා
විශ්වවිද්‍යාලය පේරාදෙණියට ගෙනයාම නිසා කොළඹ පිහිටා තිබූ

විශ්වවිද්‍යාල පුස්තකාලය ද ජේරාදෙණියට ගෙන යන ලදී. එස්. සී. බ්ලොක්, ටී. ජී. පියදාස, එච්. ඒ. ඉයන් ගුණතිලක, ආචාර්ය ඩබ්ලිව්. බී. දොරකුඹුර හා මහාචාර්ය ජයසිරි ලංකාගේ වැනි කීර්තිමත් වෘත්තිකයන් විසින් පුස්තකාලයාධිපති වෘත්තිය සම්භාවනීයත්වයට පත්කර තිබිණි. විශ්වවිද්‍යාල පරිසරය ආශ්‍රයෙන් මෙරට පුස්තකාලය වෘත්තිය සංවර්ධනය වූ බවට තර්කයක් නැත. මෙරට විශ්වවිද්‍යාල බිහිවීමත්, එම ආයතන ඇසුරෙන් පුස්තකාල වර්ධනයත් සමග ම පුස්තකාල වෘත්තිය ද සංවර්ධනය විය. එහෙත් නිදහස ලබා ගැනීමට ආසන්න කාලය මෙරට පුස්තකාල ක්ෂේත්‍රයේ අඳුරු කාල සීමාවක් විය. පුස්තකාල වෘත්තියේ පමණක් නො ව මෙරට පුස්තකාල සේවාවේ ද කිසියම් බිඳ වැටීමක් එවක දක්නට ලැබිණි (පියදාස, 1985).

වර්ෂ 1966 උසස් අධ්‍යාපන පනත මගින් විශ්ව විද්‍යාල පුස්තකාලයාධිපතිත්වයේ කාර්යභාරය සහ පිළිගැනීම නැවත තහවුරු කරන්නට යෙදිණි. එහි එකොළොස් වන කොටස 64 වගන්තිය විශ්වවිද්‍යාල කාර්ය මණ්ඩලය පත්කිරීම් සම්බන්ධව අංක 8 යටතේ මෙසේ සඳහන් කර ඇත (ශ්‍රී ලංකාව, 1966).

...මෙම වගන්තියේ කාර්යයන් සඳහා-

(අ) 'මහාචාර්ය' යන පාඨයට පුස්තකාලයාධිපතිවරයකු ද ඇතුළත් වන ලෙස සැලකිය යුතු අතර

(ආ) 'ආචාර්ය' යන්නට සහකාර පුස්තකාලයාධිපතිවරයකු ද ඇතුළත් වන ලෙස සැලකිය යුතු ය.

1978 අංක 16 දරණ (සංශෝධිත) විශ්වවිද්‍යාල පනතට අනුව ද පුස්තකාලයාධිපති, නියෝජ්‍ය පුස්තකාලයාධිපති, ජ්‍යෙෂ්ඨ සහකාර පුස්තකාලයාධිපති හා සහකාර පුස්තකාලයාධිපති තනතුරු සියල්ල 'ආචාර්ය' යන හැඳින්වීම යටතට ගැනෙයි (ශ්‍රී ලංකාව, 1978).

4 අධ්‍යයනයේ අරමුණු

සම්භාවනීය තත්ත්වයක පැවති අතීත පුස්තකාල සේවය වර්තමානය වන විට විවිධාකාර ගැටලුවලට මුහුණ පා ඇත. විශ්වවිද්‍යාල පරිසරය ඇසුරින් මෙම ගැටලු හඳුනා ගැනීම මෙම අධ්‍යයනයේ අරමුණ යි. මෙය සාහිත්‍ය ගවේශනය හා පෞද්ගලික සාකච්ඡා අනුසාරයෙන් කෙරුණු ගුණාත්මක අධ්‍යයනයකි.

අධ්‍යයන පරමාර්ථ පහත සඳහන් අයුරින් සංක්ෂිප්තව දැක්විය හැකිය.

(අ). පුස්තකාලය ක්ෂේත්‍රයට ජාතික වශයෙන් හිමි ව තිබූ තත්ත්වය නිරීක්ෂණය කිරීම.

(ආ). වර්තමානයේ පුස්තකාලය සේවයට කෙරෙන බලපෑම් හා අසාධාරණකම් හඳුනා ගැනීම.

(ඇ). පුස්තකාලය සේවය හා සම්බන්ධ සියලු ප්‍රජාව මේ පිළිබඳව දැනුවත් කිරීම හා ආකල්පමය වෙනසක් කිරීමට මග පෑදීම.

(ඈ). තර්ජනය එල්ල වන පාර්ශවයන් හි ආකල්පමය වෙනසක් ඇතිකිරීම.

(ඉ). වගකිව යුතු පාර්ශ්ව හා ආයතන මෙකී කටයුතු වෙනුවෙන් සක්‍රීයව දායක කර ගනිමින්, සිදු වී ඇති අගතිගාමී තත්ත්වය පිටු දැක පවුරු වළලු බිඳ දමා පුස්තකාලය සේවයේ අභිවර්ධනයට කටයුතු කිරීම.

5 විශ්වවිද්‍යාල මට්ටමෙන් පුස්තකාලය සේවයට වූ බලපෑම.

ලෝකයේ විශ්වවිද්‍යාල සංකල්පය බිහි වූ දා සිට පුස්තකාලයාධිපති අධ්‍යයන කාර්ය මණ්ඩලයේ සාමාජිකයෙකි. බඳවා ගැනීමේ දී සැලකිල්ලට ගත් අධ්‍යාපනික හා වෘත්තීය සුදුසුකම් අධ්‍යයන කාර්ය

මණ්ඩලයේ සුදුසුකම්වලට සමාන විය. වැටුප් හා දීමනා ද සමාන විය. යුරෝපයේ ආරම්භක විශ්වවිද්‍යාලයවල ද ඉහළ ම නිලධාරීන් තිදෙනා වූයේ උපකුලපති, ලේඛකාධිකාරී හා පුස්තකාලයාධිපති ය.

එහෙත් පුස්තකාල සේවය මෙරට වත්මන් විශ්වවිද්‍යාල පරිසරය තුළ ක්‍රමයෙන් වෙනස් වෙමින් පවතින ස්වභාවයක් දක්නට ලැබේ.

5.1 වරප්‍රසාද අහිමි වීම හා තනතුරේ වැදගත්කම නොසැලකීම

5.1.1 උසස් අධ්‍යාපන අමාත්‍යාංශය හා විශ්වවිද්‍යාල ප්‍රතිපාදන කොමිෂන් සභාවේ පරිපාලන ලිපි ලේඛන.

උසස් අධ්‍යාපන අමාත්‍යාංශය හා විශ්වවිද්‍යාල ප්‍රතිපාදන කොමිෂන් සභාව විශ්වවිද්‍යාල පුස්තකාලයාධිපතිවරුන්ගේ වෘත්තීය තත්ත්වයන් අඛණ්ඩ කර ගන්නට අපොහොසත් වීම දකින්නට ඇති ප්‍රවණතාවයකි. විශ්වවිද්‍යාල මට්ටමෙන් පුස්තකාල සේවය විවිධාකරයෙන් පටු වන ආකරය උසස් අධ්‍යාපන අමාත්‍යාංශය හා විශ්වවිද්‍යාල ප්‍රතිපාදන කොමිෂන් සභාව නිකුත් කරන විවිධ ලේඛනවලින් පැහැදිලි වේ. ඒ අනුව විශ්වවිද්‍යාල පරිසරය තුළ පුස්තකාල වෘත්තීයට විවිධ ස්වරූපවලින් ඉතා සියුම් ව වරප්‍රසාද අහිමි කරන හෝ අහිමි වෙමින් පවතින ආකාරය දැක ගත හැකි ය.

අධ්‍යයන දීමනා, තීරුබදු රහිත වාහන බලපත්‍ර ලබා දීම, පර්යේෂණ දීමනා ගෙවීම සම්බන්ධයෙන් පළමුව පුස්තකාලයාධිපති/සහකාර පුස්තකාලයාධිපති තනතුරු රහිතව ලේඛන ගත කිරීමත්, පුස්තකාලවේදීන් ගේ ඉල්ලීම්වලින් හා කරුණු දැක්වීම්වලින් පසු අතුරු නියෝග නිකුත් කිරීමත් සාමන්‍ය තත්ත්වයක් බවට පත් වී ඇත.

5.1.2 පුස්තකාලයාධිපති පීඨ මණ්ඩලයෙන් කපා හැරීම.

ඇතැම් විශ්ව විද්‍යාලවල පීඨ මණ්ඩලයට පුස්තකාලයේ නියෝජනයක් නැත. පුස්තකාලයේ තොරතුරු පිටතට ගලා යාමට

හා ඇතුළුව ගලා ඒමට එම තත්වය බාධාවකි. මෙය පුස්තකාලයාධිපති ධුරයේ සම්භාවනීයත්වයට ද බලපා ඇත.

5.1.3 පුස්තකාලයාධිපති පුස්තකාල කමිටුවෙන් පහතට ඇද දැමීම.

ශ්‍රී ලංකාවේ ආරම්භක විශ්වවිද්‍යාලයවල පුස්තකාල කමිටුවේ සභාපති වශයෙන් කටයුතු කරන ලද්දේ පුස්තකාලයාධිපති ය. ලංකා විශ්ව විද්‍යාලයේ උප කුලපති වරයා වශයෙන් ශ්‍රීමත් අයිවර් ජෙතිංස් සේවය කරන කල, එවක පුස්තකාලයාධිපති වූ සොලමන් සිසිල් බ්ලොක් පුස්තකාල කමිටුවේ සභාපති වශයෙන් කටයුතු කර ඇත. වර්තමානයේ ඇතැම් විශ්වවිද්‍යාල පුස්තකාලවල මේ සම්භාවනීයත්වය පුස්තකාල කමිටුවේ ලේකම් තනතුර දක්වා පහතට වැටී ඇත.

5.1.4 පුස්තකාලයාධිපති යන තනතුරු නාමය වෙනස් කිරීම නිසා ඇති වූ බලපෑම.

විශ්වවිද්‍යාල මෙරට ට දායාද කළ ඔක්ස්පර්ඩ් හා කේම්බ්‍රිජ් සම්ප්‍රදාය අනුව 1966 උසස් අධ්‍යාපන පනත හා 1978 පනත මගින් 'පුස්තකාලයාධිපති' යන තනතුරු නාමය භාවිත කර ඇත. නමුත් වර්තමානයේ දී එකී තනතුරු නාමය යම් පරිවර්තනයකට ලක් ව තිබේ. මෙයට මූලික හේතුව වන්නේ පුස්තකාලයාධිපති යන නාමය සාම්ප්‍රදායික ව ව්‍යවහාර වූ නමක් වීම ද එසේ නැතහොත් පුස්තකාලයාධිපති යැයි පවසන විට එකී තනතුර එතරම් ගරු කළ යුතු සම්භාවනීය තනතුරක් නො වීම ද යන ගැටලුව විසඳාගත යුතු ය.

විශ්වවිද්‍යාල ආයතන සංග්‍රහයේ (සිංහල) තනතුරු නාමය සඳහන් කර ඇත්තේ 'පුස්තකාලයාධිපති' යනුවෙනි. නමුත් පරිපාලන කටයුතුවල දී නිරන්තරයෙන් ම 'පුස්තකාලයාධිකාරී' යන නාමය භාවිත කෙරේ.

කුලපති, උපකුලපති, පීඨාධිපති, පුස්තකාලයාධිපති හා අංශාධිපති ආදී වශයෙන් පැවති අධ්‍යයන ධුර නාමාවලියෙන් බැහැර කොට

ලේඛකාධිකාරී, මූල්‍යාධිකාරී. වෛද්‍ය අධිකාරී හා වැඩ අධිකාරී යන අනාධිකාරී තනතුරු දුර නාමාවලියට 'පුස්තකාලයාධිකාරී' යන නාමය ද තල්ලු කිරීම අප වෘත්තිකයන් විසින් ම කරනු ලැබූ අත්වැරද්දකි.

5.1.5 දුරකතන නාමාවලියේ ස්ථාන ගත කිරීමෙන් පහතට දැමීම.

පොදු රාජ්‍ය මණ්ඩලීය විශ්වවිද්‍යාල වාර්ෂික ග්‍රන්ථය (Commonwealth Universities Yearbook, 2005) පරීක්ෂා කර බැලීම මේ කරුණ සම්බන්ධයෙන් අදාළ වේ. ශ්‍රී ලංකාවේ විශ්වවිද්‍යාල පද්ධතිය ආරම්භයේ දී ලේඛකාධිකාරී තනතුරට පසුව පුස්තකාලයාධිපතිගේ නම සඳහන් විය. නමුත් වර්තමානයේ තත්ත්වය ඊට වඩා වෙනස් වෙයි. එක් ප්‍රධාන විශ්ව විද්‍යාලයක පුස්තකාලයාධිපති තනතුර ශ්‍රී ලංකා දුරකතන නාමාවලියේ සඳහන් කර ඇත්තේ නිශ්චිත ස්ථානයට වඩා තනතුරු 24ක් පහලට දමමිනි. මේ තත්ත්වයට හේතුව පරිපාලන කාර්ය මණ්ඩලයේ අනවබෝධය හෝ නො සැලකිලිමත් කම යි.

5.2 බඳවා ගැනීම්

5.2.1 මහාචාර්ය තනතුරේ ඇතිවූ වෙනස්කම්වලට සාපේක්ෂව පුස්තකාලයාධිපති තනතුර වෙනස් නොවීම.

1983 වැටුප් සංශෝධනයේ දී මහාචාර්ය තනතුරේ ශ්‍රේණි දෙකක් ඇති විය. මහාචාර්ය හා ජ්‍යෙෂ්ඨ මහාචාර්ය යනුවෙනි. එහෙත් පුස්තකාලයාධිපති තනතුරේ එවන් වෙනසක් ඇති නොවිණි.

5.2.2 උපයා ගන්නා ලද ලකුණු මත බඳවා ගැනීම්

විශ්වවිද්‍යාල පුස්තකාලයාධිපතිත්වයට අදාළ බඳවා ගැනීම් හා උසස්වීම් සම්බන්ධයෙන් විශ්වවිද්‍යාල ප්‍රතිපාදන කොමිෂන් සභාව නිකුත් කරන ලද අංක 909 හා 921 වක්‍ර ලේඛ (උපයා ගන්නා ලකුණු අනුව සම්මුඛ පරීක්ෂණවලට කැඳවීමට පිඹුරුපත් සකසා

ඇති වනු ලේඛ) සම්බන්ධයෙන් වෘත්තීයමය වශයෙන් විවිධ අදහස් පළ වෙයි.

පුස්තකාල ක්ෂේත්‍රයේ උසස්වීම් ලබා ගැනීම සඳහා මෙම වක්‍රලේඛය බාධකයක් විය හැකි ය. විශ්වවිද්‍යාල අවාර්යවරුන්ට දේශනවලින් පසු පර්යේෂණ කටයුතුවල නියුක්තවීමට ඉඩක් ඇතත් පුස්තකාලයාධිපතිවරු දෛනිකව පැය අටක් පුස්තකාල කටයුතු වෙනුවෙන් වැය කළ යුතු ය. ඒ අනුව පර්යේෂණවලට අනුව හා දේශන පැය ගණන අනුව උසස්වීම් ලබා දීමට කටයුතු කිරීම තරමක අසාධාරණ තත්ත්වයකි. එමගින් ලකුණු පසුපස හඹා යෑමේ තත්ත්වයක් ද නිර්මාණය විය හැකි ය. එවිට පුස්තකාල සේවා කඩා වැටීම ද වැළැක්විය හැකි නොවේ.

5.2.3 විශ්ව විද්‍යාල ප්‍රතිපාදන කොමිෂමේ පරිපාලන වපසරියෙන් බැහැර ඇතැම් විශ්වවිද්‍යාලයන්හි පුස්තකාලයාධිපති ධුරය අනධ්‍යයන තනතුරක් බවට පත් කිරීම

උසස් අධ්‍යාපන අමාත්‍යාංශයේ විශ්වවිද්‍යාල ප්‍රතිපාදන කොමිෂන් සභාව (වි.ප්‍ර.කො.ස.) යටතට නො ගැනෙන එහෙත් එහි නෛතික රෙගුලාසි හා පටිපාටි යටතේ කටයුතු කෙරෙන විශ්වවිද්‍යාල කීපයක් වෙනත් අමාත්‍යාංශ යටතේ කිටුයාත්මක වේ. බුද්ධග්‍රාවක භික්ෂු විශ්වවිද්‍යාලය, සර් ජොන් කොතලාවල ආරක්ෂක විශ්වවිද්‍යාලය හා පාලි හා බෞද්ධ විශ්වවිද්‍යාලය නිදසුන් වශයෙන් සඳහන් කළ හැකි ය.

බුද්ධග්‍රාවක භික්ෂු විශ්වවිද්‍යාලයෙහි ද පුස්තකාලයාධිපති තනතුර සඳහා අවශ්‍ය සුදුසුකම් වෙනත් ජාතික විශ්වවිද්‍යාලයවල හා සමාන වෙයි. එහෙත් මෑතක දී එම විශ්ව විද්‍යාලය පළ කළ පුවත්පත් දැන්වීමකින් (දිවයින, 2012) දක්වා තිබුණේ, භික්ෂුන් වහන්සේ නමක් සුදුසුකම් ලබා ගන්නේ නම් අධ්‍යයන තනතුරක් ලෙස ද, ගිනියෙක් නම් අනධ්‍යයන තනතුරක් ලෙස ද පත්කිරීම සිදු වන බව යි. මෙම තත්ත්වය පාලි හා බෞද්ධ විශ්වවිද්‍යාලය ඇතුළු වි.ප්‍ර.කො.ස. යටතට නොගැනෙන වෙනත් විශ්ව විද්‍යාල කරා සම්ප්‍රේෂණය නොවෙතැයි කිව හැකි ද? එසේ ම ඉන්පසු වෙනත්

ජාතික විශ්වවිද්‍යාල විසින් ද එය පූර්වාදර්ශයක් බවට පත් කර ගැනීමට ඉඩ ඇත.

5. 3 පළිගැනීම් හා විවිධ බලපෑම් කිරීම.

මෙරට පුස්තකාල ක්ෂේත්‍රයේ ඉහළ සුදුසුකම් ලද වෘත්තිකයන් පිරිස වන විශ්වවිද්‍යාල පුස්තකාලයාධිපතිවරුන්ගේ වෘත්තීය ප්‍රශ්න හා සුබ සාධනය පිළිබඳ විවෘත ව සිය අදහස් ප්‍රකාශ කිරීම නිසා පළිගැනීම් හා විවිධ බලපෑම්වලට ලක් වූ වෘත්තිකයන් කිහිප දෙනෙකු ම විවිධ විශ්වවිද්‍යාල පරිසරය ඇසුරින් හඳුනා ගැනීමට හැකි විය.

5.3.1 ජේරාදේණිය සරසවි පුස්තකාලයාධිපතිවරයකු සේවයෙන් ඉවත්වීම.

ජේරාදේණි විශ්වවිද්‍යාලයේ හිටපු පුස්තකාලයාධිපතිවරයකු එහි පැවති අනර්ථකාරී වාතාවරණය හේතු කොට ගෙන තම සේවා කාලය තවත් අටවසක් ඉතිරිව තිබිය දී සේවයෙන් ඉල්ලා අස්විය.

5.3.2 කැලණිය විශ්වවිද්‍යාලයේ හිටපු පුස්තකාලයාධිපතිවරයකු ස්ථිර නොකිරීම.

1986 අප්‍රේල් 01 දින කැලණිය විශ්වවිද්‍යාලයේ පුස්තකාලයාධිපති තනතුරට මෙරට කීර්තිමත් පුස්තකාල වෘත්තිකයකු පත්කරනු ලැබූයේ වසරක පරිවාස කාලයකට යටත්ව ය. කෙසේ වුවත් ඔහු ස්ථිර නො කර පුස්තකාලයාධිපති තනතුරට අළුතෙන් ඉල්ලුම්පත් කැඳවීමට දැන්වීමක් ද පළකර තිබුණි. දිගින් දිගටම පාලක මණ්ඩලයෙන් කෙරුණු මේ පළිගැනීම් පිළිබඳ ව ඔහු විසින් පාර්ලිමේන්තුවේ දුක්ගන්තාරාලට (ඔම්බුඩ්ස්මන්වරයාට) ලිඛිත ව දැනුම් දෙන ලදී.

එයට පිළිතුරු වශයෙන් විශ්වවිද්‍යාල පාලක සභාව පුස්තකාලයාධිපති ලෙස ඔහුගේ පත්වීම ස්ථිර නො කරන ලද බවත්, විකල්පයක් වශයෙන් පුස්තකාල විද්‍යා දෙපාර්තමේන්තුවට

මාරු කරන ලද බවත් ඔම්බුඩ්ස්මන්වරයා වෙත 1991.12.10 දා තමන් යුතු ලිපියක් මගින් දන්වා සිටියේ ය.

අවසානයේ දී තමාට සිදුවන අසාධාරණය වෙනුවෙන් උපරිමාධිකරණයට යෑමට එම වෘත්තිකයාට සිදු විය. අදාළ පුස්තකාලයාධිපති තනතුර ලබා දෙන ලෙස එම නඩු තීන්දුව මගින් තහවුරු කරන ලදී.

ඒ අනුව කිසියම් සේවකයකු පරිවාස කාලය සඳහන් කර තනතුරකට බඳවා ගත් විට පරිවාස කාලය අවසන් වූ බවට පාලන අධිකාරියෙන් ලිපියක් අවශ්‍ය නො වන බවත්, ඔහු හෝ ඇය පරිවාස කාලය අවසන් වූ වහා ම ස්ථිර වූ සේවකයකු වශයෙන් සැලකෙන බවත් මෙම තීන්දුවෙන් තහවුරු කෙරිණි.

5.4 කාර්ය මණ්ඩලය අතර පවතින අනවබෝධය

වර්තමාන විශ්වවිද්‍යාල පරිසරයේ දී පුස්තකාලය සේවය හා පුස්තකාලය වෘත්තීය අධ්‍යයන හා අනාධ්‍යයන කාර්ය මණ්ඩලය යන පාර්ශ්ව දෙකක බලපෑමට ලක් වී ඇත.

6 වග වීම හා වගකීම

ශ්‍රී ලංකාවේ විශ්වවිද්‍යාල පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගැනීම වෙනුවෙන් පහත සඳහන් පාර්ශ්ව වග වීම හා වගකීම වෙනුවෙන් පෙනී සිටිය යුතු ය. මේ සඳහා කළ යුතු කාර්යය පැහැදිලි ව හඳුනා ගෙන ඒ වෙනුවෙන් කටයුතු කළ යුතු ව ඇත.

- පුස්තකාල වෘත්තීයේ නියුක්ත පිරිස
- විශ්වවිද්‍යාල පුස්තකාලයාධිපතිවරුන්ගේ සංගමය
- ජාතික පුස්තකාල හා පුලේඛන සේවා මණ්ඩලය
- ශ්‍රී ලංකා පුස්තකාල සංගමය
- පුස්තකාල හා විඥාපන විද්‍යා අධ්‍යයන අංශය, කැලණිය විශ්වවිද්‍යාලය

- පුස්තකාල විද්‍යා පශ්චාත් උපාධි පීඨය, කොළඹ විශ්වවිද්‍යාලය
- ජාතික පුස්තකාල හා විද්‍යාපන විද්‍යා ආයතනය, කොළඹ විශ්වවිද්‍යාලය

7 පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගැනීම.

ශ්‍රී ලංකාවේ පුස්තකාල වෘත්තීය සංවර්ධනය කර පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගැනීමට පහත සඳහන් යෝජනා ක්‍රියාත්මක කිරීම කාලෝචිත ය. මෙහි දී ශ්‍රී ලංකා පුස්තකාල සංගමය හා ජාතික පුස්තකාල හා ප්‍රලේඛන සේවා මණ්ඩලය සතුව සුවිශාල කාර්යභාරයක් පවතී.

- වෘත්තීය අයිතිවාසිකම් වෙනුවෙන් පෙනී සිටින වෘත්තීය සංගමයක් ආරම්භ කිරීම .
- නව සමාජ ප්‍රවණතාවන්ට පුස්තකාල වෘත්තීය හුරු කිරීම.
- යහපත් අනුප්‍රාප්තිකයන් පිරිසක් නිර්මාණය කර ගැනීම .
- තරුණ වෘත්තීකයන් මෙම කෞතුක වෙනුවෙන් නායකත්වය භාර ගැනීම .
- පුස්තකාල හා විද්‍යාපන විද්‍යා අධ්‍යාපනයේ දුර්වලතා හදුනා ගැනීම .
- පුස්තකාල හා විද්‍යාපන විද්‍යාව පාසල් විෂයයක් බවට පත්කිරීම .
- පුස්තකාල ප්‍රමිති නිවැරදිව සකස් කිරීම හා පවත්වා ගෙන යාම.
- ආචාර ධර්ම පද්ධතියකට පුස්තකාල වෘත්තීය අනුගත කිරීම.

8. නිගමනය

පුස්තකාලයාධිපති යනු ආයතනයක හෝ ප්‍රජාවක විවිධ පුද්ගලයන්ට අවශ්‍ය කෙරෙන දැනුම, හැකියාව හා කුසලතා ප්‍රවර්ධනය කරන කාලීන, පරිපූර්ණ හා සමාජ තොරතුරු වරණයව සපයන විද්වත් බව වටහා ගැනීම කාලෝචිත ය. ශ්‍රී ලංකාවේ

පුස්තකාල සේවය වර්තමානයේ පත් වී ඇති තත්වය කටුක ය. වෘත්තීය අස්ථාවරත්වය, සමාජ පිළිගැනීමේ අඩුලුහුඬුකම්, රජයේ අල්ප අනුග්‍රහය, තනතුරු කප්පාදුව හා පහත වැටීම, පරිපාලන අංශයෙන් ඇති මද සැලකිල්ල, සංවර්ධනාත්මක ආකල්පවලින් තොර වීම, අධ්‍යයන අනධ්‍යයන කඩ ඇදීම හා බඳවා ගැනීමේ ප්‍රතිපත්තිවල ව්‍යාකූල බව යනාදී වශයෙන් පුස්තකාල සේවයේ හා පුස්තකාලයාධිපතිත්වයේ විද්‍යමාන සංකූලතා විමසිල්ලට හා සමීක්ෂණයට බඳුන් කළ යුතු ය.

සරු උරුමය තරම් වාසිදායක වූත්, ප්‍රසංසනීය වූත් දෙයක් ජාතියකට තවත් නො මැත. එමෙන් ම එවැනි උරුමය ගැන සිතමින්, උදම් අනමින් පමණක් කාලය ගත කිරීම තරම් හයානක දෙයක් ද ජාතියකට නො මැත. රටක පුස්තකාල පද්ධතිය වනාහි අනාගතය අපේක්ෂා කර ගෙන සකස් විය යුත්තකි. එමෙන් ම සමාජීය දියුණුව උදාකිරීම පිණිස පුස්තකාලය මූලික කර ගත් ක්‍රියාදාමයක් සෑම සමාජයක ම ස්ථාපිත වීම අත්‍යවශ්‍ය ය. ශ්‍රී ලංකාවේ පුස්තකාල සේවයේ පවුරු වළලු පුළුල් කර ගැනීම වෙනුවෙන් සැබෑ ලෙස පෙනී සිටීම ජාතියක් සතු යුතුකමකි. රජයක් සතු වගකීමකි. දැනුමේ කේන්ද්‍රස්ථානය බවට පත්කිරීම යථාර්ථය එය ම බව පංච නීවරණ ධර්මයෙන් බැහැර ව සතර අගතියෙන් තොරව ප්‍රඥා සම්පන්නව අවබෝධ කර ගත යුතු ය.

මූලාශ්‍ර:

කුසලධම්ම හිමි (1997), *හික්ෂු අධාපනය හා ප්‍රජා නායකත්වය. හික්ෂුව සහ සම්ප්‍රදාය : අතිපූජ්‍ය දේවහන්දියේ ශ්‍රී සද්ධාතිස්ස මහ නාහිමි උපහාර කලාපය*, පි. 105-109

දිනමිණ (2011). ජාතික පුස්තකාල හා ප්‍රලේඛන සේවා මණ්ඩලය: පුරප්පාඩු (2011), දිනමිණ පුවත්පත නොවැම්බර් 9 පි. 8

දිවමිණ (2010) ජාතික පුස්තකාල හා ප්‍රලේඛන සේවා මණ්ඩලයේ
අධ්‍යක්ෂ ජනරාල් වැඩ බාරගත් දා (2010), දිවමිණ පුවත්පත
2010 සැප්තැම්බර් 26 පි. 9

දිවයින (2012). බුද්ධශ්‍රාවක භික්ෂු විශ්වවිද්‍යාලය තනතුරු ඇබැර්තු
(2012), දිවයින පුවත්පත ජනවාරි 12 පි. 13

පියදාස, ටී. ජී. (1985), ශ්‍රී ලංකාවේ පුස්තකාල වෘත්තීය පිළිබඳ
මතක සටහන්. පුස්තකාල ප්‍රවෘත්ති : ශ්‍රී ලංකා ජාතික
පුස්තකාල සේවා මණ්ඩලයේ ප්‍රවෘත්ති ප්‍රකාශනය, 1985 ජූලි-
දෙසැ 6 (3/4), පි. 5-8

වීරසිංහ, ඩබ්. කේ. එම්. එම්. කේ. (2000), පුස්තකාල ඉතිහාසය:
ආරම්භයේ සිට නූතන යුගය දක්වා සංකෘතිමය විචරණයකි.
දළුගම : කර්තෘ. පි. 7

ශ්‍රී ලංකාව. (1966), 1966 අංක 20 දරන උසස් අධ්‍යාපන පනත.
කොළඹ : ලංකාණ්ඩුවේ මුද්‍රණාලය, පි. 31-32

ශ්‍රී ලංකාව. (1978), 1978 අංක 16 දරන විශ්වවිද්‍යාල පනත.
කොළඹ : රජයේ ප්‍රකාශන කාර්යාංශය.

Commonwealth universities year book (2005), a directory to
the universities of Commonwealth and the handbook of
their association, volume 2, p. 1527

Lahiri, Ramansu (1999), *Professionalism and research in
library and information science*, p. 10

*Sri Lanka telecom national telephone directory: western
province* (2011), Colombo : Sri Lanka telecom, p. 189

University Grants Commission (2011). Establishment circular letter no.11/2011 of 11.07.2011, *Payment of research allowance budget proposals on 2011*, Colombo: university grants commission

University Grants Commission (1986). *Rules made by the university grants commission on the scheme of recruitment and procedures for appointment to the staff of the higher educational institutions & institutes* (1986), Colombo: university grants commission, p.20-25

Level of User Satisfaction in an Academic Library

K. G. Anura Priyadarshana Kiriella
anurap@lib.mrt.ac.lk

Library, University of Moratuwa

Abstract

The purpose of this study was to identify best practices to satisfy user requirements, and to explore the problems they face. Suggesting proper customer relationship strategies was another objective. Data was collected from a user survey. The population was academic staff members, postgraduate & undergraduate students of University of Moratuwa, and students from the Institute of Technology, University of Moratuwa. A total number of 423 participants were selected and 369 responded in the survey. User satisfaction rates were calculated. The study proves that University libraries can apply customer relationship principles to attract and better serve new generations of users. The study also found that the customer relationship activities operated by the University of Moratuwa Library are also in appropriate satisfactory levels. However there are some areas which could be further improved in future. The study offers practical solutions and recommendations to overcome weaknesses in service. Library authorities should prepare training programmes to train and enhance the knowledge of the library staff to provide a better service. The researcher also recommends several interpreting activities including a customer relationship strategy plan at the organizational level.

1 Introduction

1.1 Background

Academic libraries are facing with problems as a result of declining budgetary support, increasing of competition from other sources of information, changes in educational systems and changes in information technology (Kotler, 1997). This has led to reduction of usage of library materials. According to Cullen (2001), academic libraries have faced their greatest challenge since the explosion in tertiary education and academic publishing the world over. Jayasundara (2008) identifies user expectation and satisfaction as indicators of service quality. Therefore, academic libraries should continuously improve the quality of their services to face these challenges. Most of the customers depended institutions like University libraries have identified “user satisfaction” as the key element of increasing the quality of service. It is critical for service organizations positioning themselves strongly in a competitive environment.

The University of Moratuwa, Sri Lanka was established under the Universities Act. No. 16 of 1978. However, its origin can be traced back to the Government Technical School in Maradana, established in 1893, and to the Institute of Practical Technology (IPT), established in 1960 in the same premises. Presently there are three faculties; Engineering, Architecture and Information Technology in the University. Also, within the same premises there is a sister institution namely, the ‘Institute of Technology’ (IT) which conducts the National Diploma in Technology (NDT) courses.

The University of Moratuwa Library (UML) serves for the University and the IT. It is one of the most prominent engineering libraries in the country. Its main areas of specialisation are Engineering, Architecture and Information Technology. It was the first fully automated University library in Sri Lanka. Computers and computer applications have been widely introduced within the library and an integrated library management system is operational since 2000. At present UML contains a collection of over 100000 accessioned items and 86,000 print and non print periodicals. This includes special collections of electronic resources, multi media materials, E- resources, rare books and archival materials. The library subscribes to around 70 print journals and has an expanding portfolio of around 50 full text electronic journals and 05 databases. The library is administrated by the University Librarian and has a staff of around 46, including 08 professionally qualified graduates. The Library provides a total of around 400 square feet study space. Bibliographic details of the entire stock of the library is included in its online catalogue which can be accessed via the web. Registered users can enjoy additional benefits such as online reservations, renewal of borrowing period etc. Efforts are made to ensure that students are familiar with extracting information from the databases and the online catalogue. Library orientation programmes are arranged for all students and subject oriented lectures (literature searching, referencing methods etc.) and documentary video shows are also presented.

1.2 Statement of the problem

The objective of the existence of a University library is not met, if its users are not satisfied with the services and

resources it provides. This study is set to find out if users of Moratuwa University library are satisfied with the services the library renders.

1.3 Aims and objectives of the study

The aim of the study was to investigate the extent to which UML is engaged in satisfying user requirements.

The objectives of this study were as follows.

1. To determine the present satisfaction levels
2. To identify methods to satisfy academic library users.
3. To identify problems of the library with regard to user dissatisfaction, if there is any.

2 Review of literature

University libraries are service oriented organizations established for the provision of relevant information resources and quality services to meet students' information needs. Sowole (1995) noted that to meet the information needs of users, a library should know their actual requirements. Simmonds (2001) identified several factors that can influence user satisfaction; responsiveness, competence and assurance, tangibles and resources. Sowole (1995) mentioned that the librarians have to make the maximum effort to ensure that their library users get the best possible benefits from the services they render. Materials are to be provided by libraries to support the learning, teaching and research processes and to provide assistance to users. Simmonds and Andaleeb (2001) argued that providing quality services in academic libraries is now a

major issue as the library is to provide a quality service than being offered just as a physical entity. Technology and automation have also changed the way people perceive libraries. As a result, the role of libraries and librarians have been re-defined in many literatures. They emphasize the provision of better library services as more important to the users than the mere physical library building.

Quality service is a competitive necessity for businesses and service organizations. Assessing service quality is therefore the first step in retaining customers in today's competitive environment. When library users are surrounded with alternative channels of information delivery - many of which are more convenient and less costly - libraries need to re-examine the range and quality of services they provide.

3 Methodology

Case study method was used in this study because it allows the researcher to obtain comprehensive information about the research objectives. Also case study method allows close examination of unique problems and relationships between individual groups.

The research was designed to find out to what extent university population is benefiting from the library facilities in the quest of accessing the required information. To explore the underlying usage of University library facilities, the researcher adopted the survey method.

UML is offering services at individual, course, departmental and University levels. Both staff and students have access to the facilities. Academic staff members, postgraduate students, undergraduate students and students of Institute

of Technology, University of Moratuwa (ITUM) were the elements of the user population. The second, third & fourth year undergraduate students and second & third year ITUM students were considered for the study. First year students from both programmes were eliminated.

A random stratified sample of 423 users of University of Moratuwa was selected. The sample size was determined according to the table proposed by Krejcie and Morgan (1970). Questionnaire method was employed to survey the attitudes of the subjects. It was comprised of 24 close ended attitude scale questions. In addition, data gathering was supplemented by interviews. These data were analyzed using the Minitab® Release 14.1 and the SAS (Statistical Analysis Software) system, occupying a variety of statistical techniques.

4 Analysis and discussion

Out of the total sample of 423, 369 respondents returned the questionnaires. Response rates of different categories are as follows. The overall response rate of the survey was 87.23%.

Table 1: Response rate of each user group

User Group	Code	Sample size	Number of respondents	Response rate
Undergraduates	UG	216 (51.06%)	191 (51.76%)	88.43%
ITUM Students	ITUM	51 (12.06%)	45 (12.20%)	88.24%
Postgraduates	PG	64 (15.13%)	51 (13.82%)	79.69%
Academic Staff	AC	92 (21.75%)	82 (22.22%)	89.13%
Total		423 (100%)	369 (100.00%)	87.23%

4.1 Overall satisfaction

Overall satisfaction of the customers was questioned (Fig. 1).

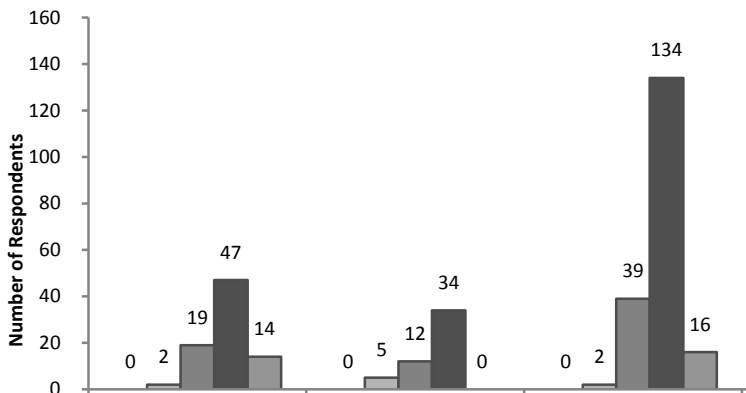


Fig.1: Overall satisfaction of library services vs. user groups.

Only 2.98% of users were unsatisfied, while 22.76% were somewhat satisfied. A majority (65.58%) were satisfied with over 8% being very much satisfied with the services that are provided by UOM.

4.2 Level of satisfaction on communication skills of the staff

A majority of respondents (67.75%) were either 'satisfied' or very satisfied and 24.93% participants were 'somewhat satisfied' with communication skills of the library staff. Only 7.05% of participants were 'unsatisfied'. Levels of satisfaction of different categories have been given in Fig. 2.

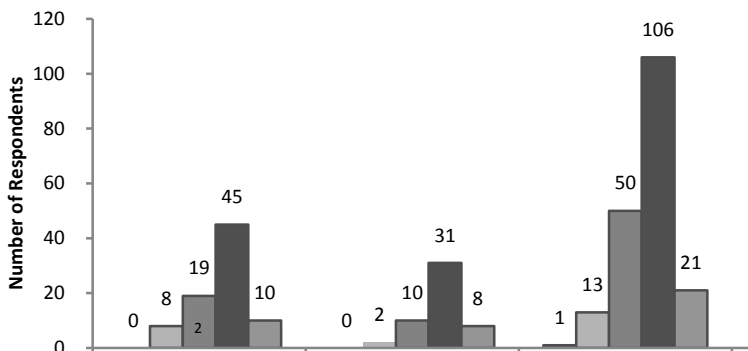


Fig.2: Satisfaction on communication skills of the library staff

The staff is responsible for responding to customer inquiries and making sure that any problems they are experiencing are resolved. Many customer service representatives do this face-to-face or by telephone, E-mail, fax, or post.

Customer service inquiries in University libraries mostly involve simple questions or requests forwarded face to face. For instance, a customer may want to know the status of a material on order or how they can borrow or renew. However, some questions could be comparatively difficult, and may require additional research or help from an expert. In some cases, a representative's main function could be to determine which organization is best suited to answer the particular question.

Therefore users were queried on their recent experience with the library, and how they grade the quality of customer services they received. Over half (53.39%) of them were

satisfied and 31.71% were somewhat satisfied. Fig.3 shows category wise levels of satisfaction.

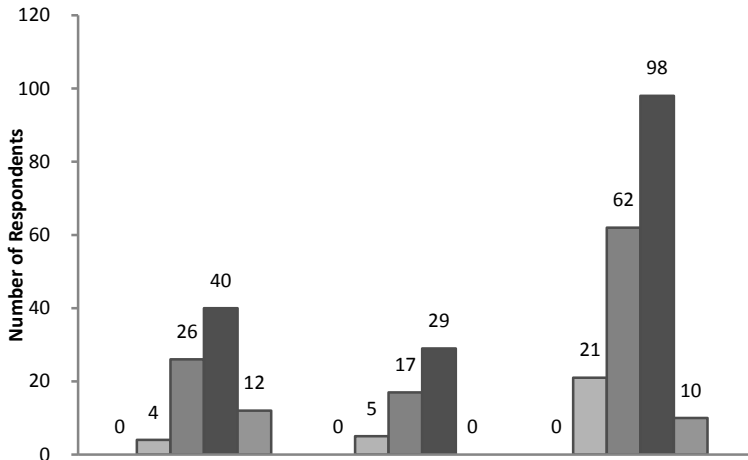


Fig.3: Most recent experience for the quality of the customer services representatives.

4.4 Handling customer inquiries – knowledge of staff

Participants have a positive perception on knowledge of the customer service representatives at the time of handling inquiries. Over 90% were at least somewhat satisfied with the knowledge of staff. The amount of unsatisfied customers was 4.88%.

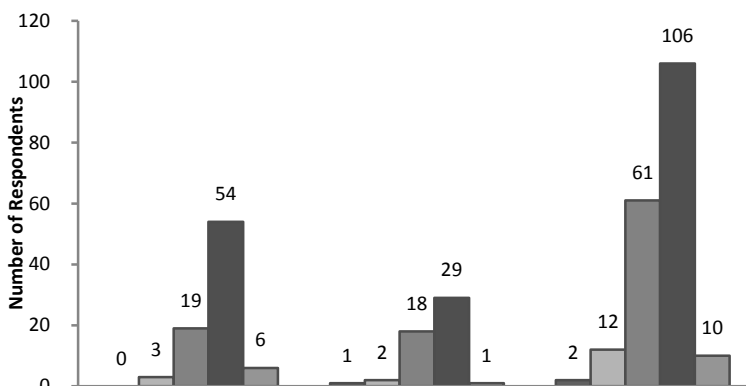


Fig. 4: Knowledge of the customer service representatives at the time of handling inquiries at the library.

4.5 Waiting time

Participants were given a chance to express their views about the time duration from forwarding a query, to that being answered. Sixty per cent of respondents were satisfied and thought that they didn't have to wait for long. A 26.83% were somewhat satisfied. But the fact that a considerable amount of participants (8.40%) were unsatisfied is a matter to be further explored.

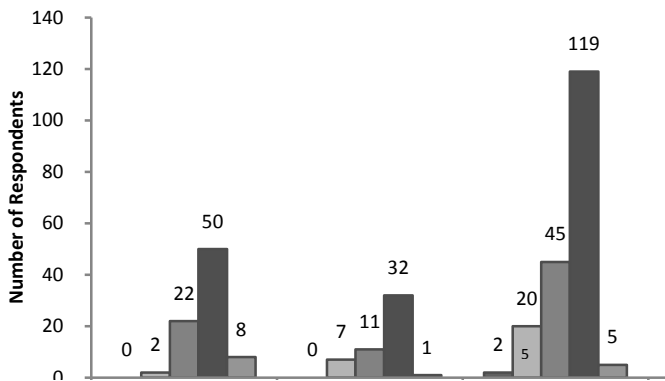


Figure 5: Opinion on the waiting time for having their questions being answered by the staff members.

4.6 Overall satisfaction

The satisfaction of library users was measured in an indirect way, by asking respondents to express their attitudes about the customer service representatives. The majority of respondents (58.27%) expressed that it is excellent and the rest of them (41.73%) wanted the staff to improve such skills. 5.42% of respondents had been given wrong information. A 7.59% said that the library staff couldn't understand their question properly. 3.25% of respondents saw customer representatives as disorganized.

5 Conclusion & recommendations

Based on the findings of this study, it was concluded that users of University of Moratuwa library were satisfied with the library services, however, there is room for improvement as some have expressed their displeasure on responding to user queries. Over 40% of respondents think that staff should

improve their skills in satisfying user requirements. That is a considerable number, and the library should pay attention to solve the issue. Library authorities should suggest and prepare a series of training programmes for the library staff to create a customer focused environment in every aspect.

Though the library has provided many customer satisfaction programmes, this study revealed that many users are not aware of those services. Therefore it is recommended to provide a proper mechanism for awareness creation with the help of a variety of marketing concepts.

Usage of resources and user expectations must be examined continuously to adapt collection development and service policies. Conducting annual user satisfaction surveys, frequent stock updates & verification, preparing user guides and establishing a help desk to meet the expectations of the customers are some of the immediate actions to be carried out.

The author recommends that the library should prepare a complete customer relationship strategy plan at the organizational level which could ensure a satisfied environment to all the stakeholders.

References

Cullen R. (2001). **Perspectives and User Satisfaction Surveys - Academic Libraries**. Library Trends, spring.

Jayasundara C. C. (2008). **User Perceptions and Expectations on E-Information Literacy Development Programmes**. *National University Library*, 10(4), p. 82

- Kotler, P. (1997), **Marketing Management: analysis, planning, implementation and control**, Prentice-Hall, Upper Saddle River, NJ.
- Krejcie, R.V. and Morgan, D.W. (1970), **Determining sample size for research activities**. *Educational and psychological measurement*. 30, p. 607- 610.
- Simmonds P.L., Andaleeb S. (2001). **Usage of Academic Libraries: The Role of Service Quality, Resources and User Characteristics**. Library Trends, Spring.
- Sowole I.A. (1995). **Information Needs of Farm management Personnel: A case Study of Two Universities and Two Agricultural Research Institutes in Western Nigerian**. *Lagos Librarian*, 16(1), p. 9-12

Information Seeking Behaviour of Final Year Nursing Students: A Survey at University of Peradeniya

K.P.K. Dambawinna
kamanid@pdn.ac.lk

*Library, Faculty of Allied Health Sciences, University of
Peradeniya, Peradeniya*

Abstract

A detailed assessment of Information seeking behavior of the final year nursing students of the Faculty of Allied Health Sciences, University of Peradeniya (UOP) for their final year research was considered of vital importance for the faculty librarian to improve the information resources, sources and services of the faculty library and enhance the information literacy programs. A comprehensive and exhaustive literature review and a pilot study assisted in formulating methodology. A survey was carried out by distributing 43 questionnaires to the total population. Interviews were also held. Analysis of data showed that information resources as textbooks and journals were refereed by 100% of the respondents in different extents. All have used the Faculty library. Consultation with the research supervisor was extremely important for the majority of the students (75%) to gather information. 95% of the respondents used computer based services for accessing web sites/ internet/ databases. The majority (52.5%) extremely used the IT Centre of University of Peradeniya. Internet cafes were not used by 82.5%. PubMed Central was extremely important for the majority (50%).

Highwire Press was not important to 95%. All (100%) have used the information sought for the research for their literature review of the research. Shortage of computers at the E. Library of the Faculty (87.5%) and non availability of electronic information sources in the library (75%) were the main barriers to seeking information. The research assisted in making recommendations to the Dean of the Faculty to enhance the information literacy programs, expand the services of the E-library and the Faculty Library.

Keywords: *Information seeking behaviour, User survey, Nursing research, Information sources, Information literacy*

1 Introduction

The Information explosion and knowledge revolution execute an imperative role in educational, professional and personal lives in human beings in modern civilization. Information technology and communication developments have a greater impact on information seeking. Information seekers think for a broad topic, sketch for a search, conduct a search, narrow down the search, gather information and use information for various purposes. Accordingly information seeking behaviour refers to the intentional approach of finding information and utilizing them. It includes the diversity of information, sources and channels, and making use of such information.

Wilson (2000) explained information seeking behaviour as the totality of human behaviour in relation to sources and channels of information. It includes both active and passive information seeking and information use. He described purposive seeking of information as a consequence of a need

to satisfy some goal. Wilson (Ibid) further argues that Information seeking behaviour is the micro-level of behaviour employed by the searcher in interacting with information systems.

Undergraduate students in the nursing discipline need information to complete course work and lectures, for classroom discussions, for practical and clinical activities, course assignments, seminars and for the final year research project.

The nursing profession needs a large number of research scholars who can generate new knowledge and upgrade the profession. Therefore the skills in nursing research should be developed early in the nursing career. Research is a scientific process with various established steps such as finding out a researchable title, review of related literature, finding out theories, concepts & variables, research design and methodology and analysis of findings. All these steps involve extensive and in depth examination of the information. Sought information is applied to generate new knowledge which is again added to the body of information in a cyclic manner.

University libraries play a major role in providing information to the researchers. In the Faculty of Allied Health Sciences - UOP, the Faculty librarian had a role in making the students aware of the information sources, resources and services and teaches the students how to find the information. The Faculty is away from the main administrative centre of the University. It is still being established. Hence, the faculty runs with the minimum requirements for the information seekers. Therefore, the assessment of information needs, realising the

problems faced by the students in getting information and then suggesting to improve the information seeking behaviour were felt as a timely and an important tasks.

2 The objectives

The objectives of the study were;

- a. To study the information seeking behaviour of the Nursing students in terms of resources, sources, channels, services, and locations.
- b. To examine the use and impact of information for their research
- c. To reveal the barriers faced by the students in the information seeking process.
- d. To make the recommendations to enhance the information seeking behaviour of the students

3 Review of related literature

An extensive, systematic and critical examination of scholarly publications related to the study was carried out using the Internet search engines, LISA(Library and Information Science Abstract) and some other printed and e-journals. The most recent and relevant ones were coated.

Kadi (2011) studied in the Commerce College in Mumbai on Faculty Information- seeking behaviour in the changing environment. Many academics used computer based systems to use e-mail facility (84.61) some for browsing internet (77.62) some for access e-journals (46.85). Information scattered in too many sources and too much of information on internet were the major problems faced by many. Others

stated lack of knowledge on how to use online catalogues and electronic resources and the slow internet speed were the problems. He concluded that most of the users influenced by the changing ICT environment.

Siddiqui (2011) comparatively studied on information seeking behavior of B. Tech and M.B.B.S students in Lucknow. Maximum number of students gave first priority for information seeking through discussion with colleagues. Next channels were given to discussion with seniors, consult with teachers and consult with a knowledgeable person respectively. Text books were the most popular type of information resources and then reference books and journals respectively. The problems faced while seeking information were lack of time (41%), non availability of materials (28%), and information was too vast (8%). He concluded that personality and approach to studying influence the information seeking behaviour of the students.

Bhatia (2011) conducted a case study on information seeking behaviour of students at Dev Samaj college, Chandigarh to explore the use of information technology for information seeking. It was revealed that only 17.19% refereed resources, 37.5 % of students use search engines as source of accessing E-resources while some others used websites of universities and institutions.

Bhatti (2009) conducted a study on information needs and information seeking behaviour of faculty members at the Islamic university of Bahawalpur. The channels for seeking information were the discussions with the colleagues and the seniors (54%), consultation of a subject specialist and expert in the field and seminars, conferences and workshops (22%).

The problems faced by the faculty members while seeking information were the shortage of computers (76%), lack of time (73%), materials were not available on the shelves(64%), and HEC digital library services were limited to the library and campus.

4 Research design and the methodology

Survey method was employed and a questionnaire was used as the main tool. In addition, structured interviews were also used. The questionnaire was prepared after a careful literature review and discussion with subject experts. The questionnaire was pre tested by a pilot study. As a result, some questions were changed and reset. The questionnaire included both open ended, closed ended questions and Likert type ranking questions. Questionnaires were personally distributed by the researcher to all the nursing students of 2006 batch in January 2012. The entire population was 43 students. 40 students responded to the questionnaire (93.02%).

5 Findings

Data was analyzed as percentages and frequency counts.

5.1 The information sources

Out of 34 resources listed in the questionnaire, respondents were asked to rank the 10 resources they have used most; giving number one for the most used one in the ranking.

All the respondents (100%) have used Text books and Journals (Electronic & Printed) in different extents. The

following resources have been used by more than 50% of the respondents.

- a. Theses & dissertations
- b. Project reports
- c. Research reports
- d. Government publications
- e. Indexes & Abstracts
- f. Encyclopaedias.

Glossaries and reviews had been used by 45% of the respondents. 37.5% respondents had used Proceedings and Audiovisuals. Less than 35% respondents used Manuals, Clinical reports, Hospital reports, Atlases/maps/gazetteers, BNF (British National Formulary) Statistical Books, Hand Books, Standards, Dictionaries, Guide books, CD's, & Directories.

No student had ranked Almanacs, Biographical sources, Bibliographies, Pamphlets & Brochures, Patents, Thesauri, News Papers, Newsletters and Union Lists as top 10.

5.2 Sources of most used resources

The resources can be accessed from various places and channels/media referred as sources. This depends on the seeking behaviour of each individual. Users of a faculty library are eligible to use the other libraries within the UOP system. Subjects were asked to mark sources from where they accessed the resources they had used. The results have been displayed in Figure 1.

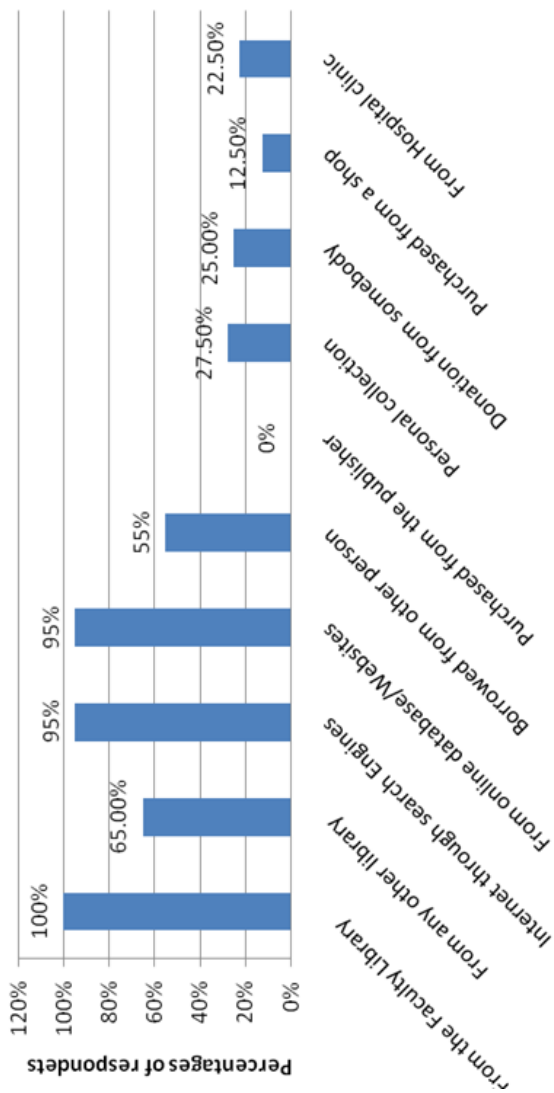


Fig. 1: Sources of Information resources

5.3 The methods/channels of gathering information

All the students have used the faculty library to gather information resources needed for the research. 95% depended on the WWW and online data bases. 65% used other libraries. Some (55%) have collected sources from friends and acquaintances. No one has purchased any material from a publisher. A small percentage (12.5%) had purchased resources from shops.

Information and knowledge can be obtained not only from print and non print materials but also from own experiences, friends, lecturers, experts and so on. These are sometimes referred to as channels, media or methods of seeking information. Some popular channels were listed out and respondents were asked to tick the relevant options in a 4 point Likert scale. The importance of the most suitable channels was ranked by the respondents as displayed in Table 1.

Consultation with the supervisor was extremely important for majority of the students (75%). For 50% of the respondents personal reading also was extremely important. Lectures, discussions with seniors and colleagues were important to more than 60% of the respondents. Bulletin boards (70%), electronic conferencing (72.5%) and Internet discussion forums/chat groups (65%) were not important to many students.

Table 1 The level of importance of information channels

Channels of information	Not important	Important	Very important	Extremely important
1. Personal reading	00%	20%	30%	50%
2. Formal lectures	00%	62.5%	25%	12.5%
3. Consult with the supervisor	00%	2.5%	22.5%	75%
4. Discussion with other experts in the field	12.5%	20%	40%	27.5%
5 Discussion with seniors	10%	62.5%	25%	2.5%
6. Discussion with colleagues	7.5%	60%	22.5%	10%
7. E-mail alerts	42.5%	25%	12.5%	20%
8. Conferences, workshops and seminars	17.5%	45%	22.5%	15%
9. Internet forums, news & chat groups	65%	27.5%	7.5%	00%
10. Electronic conferencing	72.5%	22.5%	5%	00%
11. Bulletin boards	70%	25%	05%	00%

5.4 Computer based services

Many library services are available in libraries in the context of information seeking behaviour. The researcher considered main computer based services to ascertain the usage. (Shown in table2) Majority of respondents (95%). have used computer based services to surf internet and to access journal/web sites/data bases. Many students have not used computers for e-conferencing (72.5%), Internet discussion/newsgroups (65%) and to see the bulletin boards(70%) to seek information.

Table 2 Use of computer based services

Computer based Services	Not used	Some times	Many times	Extremely used
1. online public access catalogue	32.5%	22.5%	27.5%	17.5%
2.CD/DVD ROMs	50%	27.5%	22.5%	00%
3.Internet search engines	5%	7.5%	42.5%	45%
4.E-journals, websites & databases	5%	7.5%	37.5%	50%
5.Publishers' sites	30%	27.5%	32.5%	10%
6.E-mail alerts	42.5%	25%	12.5%	20%
7.Econferencing	72.5%	17.5%	10%	00%
8.Internet forums, news & Chat groups	65%	25%	10%	00%
9. Bulletin boards	70%	27.5%	2.5%	00%

5.5 The locations used to access the computer based services

Readers use various locations to access to information through the computers. The usage of such locations is displayed in Table 3.

Table 3 The use of locations to access computer based services

Locations	Not used	Some times	Many times	Extremely used
E- Library of Faculty of Allied Health Sciences	00%	42.5%	32.5%	25%
IT centre of university of Peradeniya	00%	12.5%	35%	52.5%
Home	12.5%	32.5%	10%	45%
Internet café	82.5%	12.5%	5%	00%
Main Library of University of Peradeniya	50%	35%	12.5%	2.5%

The majority (52.5%) extremely used the IT centre of University of Peradeniya. Internet cafes were not used by 82.5%. One student had sometimes used hometown library. Two students had used the Dental Library, UOP many times.

5.6 The importance of journal databases

The faculty librarian demonstrated some websites to the students at the practical session. Those were listed down to

determine the importance for research. The results are shown in table 4.

According to that, PubMed Central (PMC) was extremely important for majority (50%). Highwire press was not important to many (95%). WHOLIS is also important to many (82.5%) in different extents.

Table 4 The importance of journal databases

Journal data bases	Not Important	Important	Very Important	Extremely Important
NINARI (Health Information Network Access for research Initiative)	27.5%	22.5%	22.5%	27.5%
Sri Lanka journals online (SLJOL)	32.5%	32.5%	20%	15%
Directory of Open Access Journals (DOAJ)	55%	20%	15%	10%
JSTOR	40%	22.5%	20%	17.5%
WHO database (WHOLIS)	17.5%	10%	37.5%	35%
PubMed Central (PMC)	15%	15%	20%	50%
Highwire Press	95%	5%	-	-

5.7 The Impact/use of information for their research

The students used information for various purposes as depicted in Figure 2. All respondents stated that new knowledge gained through various sources had been used in the literature review of their research. Three fourth (75%) of respondents shared information with the supervisor and 67.5% with the colleagues.

Over half of the respondents (57.5%) used information for building the research design and methodology.

5.8 The barriers faced by the students in the information seeking process

Shortage of computers in the E-library of the Faculty was the main barrier for many students (87.5%). Other barriers stated by more than 50% of the respondents were the non availability of electronic sources in the library (75%), Lack of Internet facility at the faculty (67.5%), Long distance to the IT centre (57.5%), slow Internet connection (57.5%) and insufficient library books (50%).

Table 5. The barriers faced by the students in the information seeking process

Barriers for information seeking	Number of responses as a percentage of total
Unavailability of required Journals in the library	60%
Lack of indexing and abstracting services in the library	45%
Insufficient Library books	55%
Shortage of computers in the E library of the faculty	87.5%
Lack of Internet facility at the Faculty	67.5%
Inadequate time to find the resources	40%
Lack of knowledge on how to use online catalogues (OPAC)	45%
Slow Internet connection	57.5%
Insufficient information skills to search for information	35%
Insufficient opening hours of the library	45%
Long distance to the IT centre of the university	57.5%
Excessive information scattered in many resources/sources	25%
Unavailability of required materials on the shelves of the library	15%
Unavailability of latest books in the library.	37.5%
Unavailability of E-resources in the library.	75%
Unaffordability to buy books or journals	35%

6 Summary of the Findings

The information resources as text books and journals were refereed by all of the respondents in different extents. All have used the Faculty library. Consultation with the research supervisor was extremely important for the majority of the students (75%). 95% of the respondents used computer based services for accessing websites/ Internet/ databases. The majority (52.5%) extremely used the IT centre of University of Peradeniya. Internet cafes were not used by 82.5%. PubMed Central was extremely important for majority (50%). Highwire Press was not important to 95%. All have used the information sought for the research for their literature review of the research. Shortage of computers at the E- Library of the Faculty (87.5%) and non availability of electronic information sources in the library (75%) were the main barriers for seeking information.

7 Recommendations

Taking into consideration the suggestions made by the respondents and researcher's observations, the following measures are felt as important in improving the information seeking behaviour of the students.

- a. More practical hours and lecture hours to be provided for the Information literacy program.
- b. Proper internet connection to be obtained, and the Faculty LAN to be connected to the Local Area Network (LAN) of UOP.
- c. The opening hours of the E -Library to be increased enabling students to use it after usual lecture schedules.

- d. The E. Library to be kept open during lunch time of the students (12 noon -1.00 p.m).
- e. Enough computers to be provided to the E. Library.
- f. Sufficient time to be given for the final year research enabling the students to conduct extensive search for information.
- g. An appropriate catalogue to be provided to find out journals.
- h. Photocopying facility of the library to be extended with long opening hours and week end services.
- i. Multimedia centre to be facilitated in the Library itself for using CDs, videos etc.
- j. Wi-Fi connections to be provided to the faculty as well as to the hostels enabling students to use computer based services in seeking information.
- k. The Collection of the library to be developed with multiple copies of demand books, latest editions and electronic Journals.
- l. Journals common to all disciplines should be subscribed by the library.

Conclusion

The researcher collected valuable information on information sources, resources, channels, services, locations, impacts and use of information and the barriers with respect to the information seeking behaviour of nursing students. The research revealed many aspects to be improved in order to enhance the seeking behaviour of the students and to minimize the barriers to meet the desires of the information seekers.

References

- Bhatia, J. K., & Venkata, R. P. (2011). *Information seeking Behaviour of Students in Digital Environment: A case study*. Retrieved from <http://ir.inflibnet.ac.in/dxml/bitstream/handle/1944/1637/45.pdf?sequence=1>
- Bhatti, R. (2009). Information needs and information seeking behavior of faculty members at the Islamia university of Bahawalpur. *Library Philosophy and Practice*. Retrieved from <http://www.webpages.uidaho.edu/~mbolin/bhatti.htm>
- Kadli, J. (2011). Faculty Information-Seeking behaviour in the changing ICT environment: A study of Commerce Colleges in Mumbai. *Library Philosophy and Practice*. Retrieved from <http://unlib.uni.edu/LPP/kadikumar.htm>
- Siddiqui, S. (2011). Information Seeking behaviour of B.Tech and M.B.B.S Students in Lucknow: A comparative study. *Journal of Library & Information Science*, 1(1), 55-70. Retrieved from http://irjlis.com/pdf_v1n1_jun2011/IR016.pdf
- Wilson, T. (2000). Human Information Behaviour. *Information Science*, 3(2), 49-55.

An Information Audit at the Main Library, Eastern University Sri Lanka

M. N. Ravikumar¹

T. Ramanan²

1. *Senior Assistant Librarian (E-Resources & Services), Main Library, Eastern University, Sri Lanka.*
2. *Senior Assistant Librarian (Technical & Clients Services), Main Library, Eastern University, Sri Lanka.*

Abstract

This paper covers the relevance and quality of library collection in terms of user satisfaction and the need to providing electronic resources and related services at the main library of Eastern University, Sri Lanka. It is very conspicuous that libraries are struggling between stringent budget cuts and voracious, complex user demands and ever-growing information media. Meanwhile, there is a noticeable transition of conventional to digital materials prioritized in the information business. In this regard, the researchers assessed the quality of the stock and its relevance by using 'information audit' model that was devised by Henczels. The study utilized survey methodology which included both quantitative and qualitative measures to analyze the data elucidated from questionnaires, interviews (focus group), and secondary information sources. It received 84.48% of the response rate for the questionnaire administration, whilst,

focus group interviews elucidated data for qualitative assessment. The results revealed that there are issues to be taken care of, though the collection attained a reputation for updated editions in majority of the subjects, thus the user satisfaction in that aspect is high. However, the information audit process drew that the collection is not completely utilized by the users, which in turn, questions about the rationalization of expenditure on acquisition. It is found that users don't contend with the physical space of the library, which is insufficient to perform their reference services, and they demanded more electronic resources and their services. Therefore, the gaps should be narrowed to enhance the service quality of the library, for which the researchers proposed measures along with a well-refined collection development policy.

Keywords: *Information Audit, Electronic Resources, User Satisfaction, Collection Development*

1 Introduction

The role of libraries in universities is to provide information resources and services to support academic programmes, research and development. To be effective in this regard, the collection should be managed as per the quality standards, and be continuously evaluated to guarantee the excellence in library services to its user-community. Therefore, it is mandatory to identify the information that is needed to optimize the achievement of institutional objectives, as to for

whom it is needed, how it will be used, its source, and how it flows through the library. In this case, information audit is used to evaluate the collection quality and user perception.

The information audit process is an established management methodology that will address all of the above issues. Booth and Haines (1993:224) emphasize that information audit can ensure that better management of the knowledge of organizations to be successful. This process enables to map information flows, improving communication between information professionals and users and enhancing the profile of the library within the organization. Moreover, information audit is a management tool which can help an organization to begin to understand how its information assets are being put to use and how these can be more effectively harnessed to achieve optimum productivity and strategic advantage (Swash, 1997:312).

1.1 Brief history of the library

The library was established in 1981 with a few thousand of books donated by University Grants Commission, Asia Foundation and British Council Sri Lanka. The stock was 4401 in number till 1984. However, from 1984, the purchasing of books and periodicals was begun along with frequent donation of materials from Asia Foundation, Lions Club, and individual donors. However, at present, the stock has reached 85,000 titles and volumes.

The library that serves the university is functioning in an old building at present; nevertheless a new library building is under construction. It caters to the users from faculties namely Agriculture, Arts & Culture, Commerce & Management, and Science, thus is called as the main library of the entity. In addition, it has branches in the Faculty of Health-Care Sciences in Batticaloa Town, Swami Vipulananda Institute of Aesthetic Studies in Kallady, and Trinco Campus in Trincomalee.

Since 2009, the library is rendering services with the aid of an integrated library system, known as LibSys4. Materials are bar-coded and installed with EM security tapes. In addition it is gradually commencing the digital services through repositories. However, there were no assessments conducted to learn as to how the existing resources and services are being utilized in terms of user satisfaction.

A library's collection must reflect the goals and objectives of its parent body; therefore, the collection development policy should be placed in the context of the library's mission (Australian Libraries Gateway, 2012). Being an academic library, its mission is to support the university's commitment towards the excellence in higher education.

1.2 Information audit

According to the Association for Information Management in the UK defines an information audit as '*a systematic*

evaluation of information use, resources and flows, with a verification by reference to both people and existing documents in order to establish the extent to which they are contributing to an organization's objectives'. It is the most appropriate definition as it incorporates the critical elements of 'information use' and 'people' (Orna, 1999, p69).

1.3 Information auditing method

Since the dramatically varying structures, natures and circumstances of the organizations, there is no universally accepted model for the information audit process. After the comparative review of information audit methodological comprehensiveness illustrated by several researchers, the 'seven stage information audit model' (Figure 1) was selected for this study. It was developed by the Susan Henczel (2001) which includes the seven stages of information audit process and the order in which they are conducted.

1.4 Objectives

The primary objective of the study is to build and maintain a library collection to support curriculum, study, teaching, and research needs of students and faculties. Therefore, it is to increase customer satisfaction through rendering efficient library services by filling the gaps between user demands and relevance and quality of library collection.

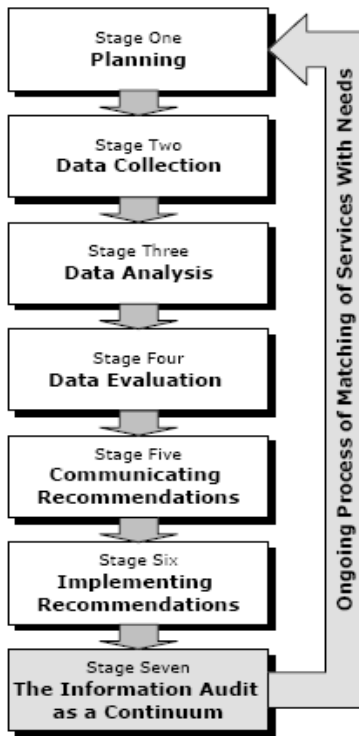


Figure 1: seven stage information audit model

The study executed the information audit techniques to assess the resources and services. Further, the following were the specific objectives of the study:

- i. To identify the quality of resources and services rendered by the library,

- ii. To find out the deficiencies of existing collection development practice,
- iii. To learn the user perspectives on current library services and collection,
- iv. To map information flows within the library, and
- v. To find out inefficiencies that enables the identification of where changes are necessary.

2.0 Methodology

To serve the aforementioned objectives, the study executed survey methodology that utilized both quantitative and qualitative method. Quantitative method executed questionnaire administration among the subjects. Under the qualitative method, focus group interviews were held to elucidate data on quality of library collection in terms of relevance and currency, and subjects' perspectives on collection development and electronic resources. The study population is the entire user community of the library concerned, thus, sample covered faculty representatives (academics) and undergraduates (3rd year and 4th year) who were selected randomly. Collected data were analyzed using spared sheets and statistical packages and the results were presented in simple frequency counts and percentage. The data from interviews were analyzed through screening of opinions, complaints and suggestions of the subjects. Therefore, 20% of the total population of each of the above user groups was taken as into sample (Table 1).

Table 1: Sample selection

User Groups		Numbers	
		Population	Sample (20%)
Undergraduate s	3 rd Year	575	115
	4 th Year	391	78
Academic staff	Permanent	128	26
	Temporary	62	13
Total		1156	232

Questionnaire with both closed and open-ended questions was used as main research instrument and library statistical records were also used to collect the data.

Out of 232 questionnaires administrated 196 questionnaires were returned with the response rate of 84.48%. All the academic staff was responded to the questionnaires.

3 Common challenges and remedies

Today's academic libraries are facing challenges of meeting ever-growing information demands of their users with limited monetary support (Walke & Wadhwa, 2010). According to the records, in the main library of the university, library collection development policy or recorded acquisition policy has not been effective for many years, due to different reasons that will be discussed in the following sections. Hence, the relevance and currency of the collection is in question as the ever-increasing number of library users and curriculum shifting are radically posing high demand for

quality stock in the library. In addition, increasing prices of library materials (Moghaddam & Talawar, 2009), declining library funds for Sri Lankan universities (Ranasinghe, 1997), and explosions of demand from users for new information (Walke & Wadhwa, 2010) are posing challenging task to the library.

The information audit was conducted based on three types such as information usage audit, information need analysis audit and information assessment audit. The results are discussed in the following sections.

3.1 Library collection

From the materials donated by renowned organizations at the time of its establishment, the library added more titles through direct acquisition and donations to reach a stock size of 84,930 titles and their copies, at present. The library acquires about 3500 (on average) number of books per year. It has subscribed to 76 scholarly journals (print). In addition, it holds undergraduates' dissertations, reports and CD ROM collection. Though the library currently does not subscribe to any electronic journals or databases, it receives online databases through INASP (PERII programme). It is found that the collection has never been subject to weeding, thus the accommodation of new materials is becoming a major challenge due to the restricted physical space in the library.

3.2 Usage of library resources

The major component of the library users are comprised of undergraduates (83.19%). The results revealed, among 196 respondents, 183 (93.37%) are registered users and 13 (6.63%) are non-registered, who are undergraduates (07) from 3rd year and permanent academic staff (06).

Moreover, the results indicate 95.54% of the students and 84.61% of academic staff are using the library to complete their tasks. So the usage level of the library is high. Comparatively, the usage level of 4th year students is higher than of 3rd year students. This is due to the research commitment in the final year. Whereas, usage levels of temporary academic staff were comparatively higher than that of permanent academic staff. That was attributed to the heavy responsibility extended to the temporary academics.

In general, the response of the academics is highly inclined to adding electronic resources to the existing collection, however, it varies from faculty to faculty as science, agriculture and management faculties are demanding more electronic resources and journals, while academicians of arts and culture, and aesthetic favoring latest text books in the stock.

3.3 Purpose of using the library

The results revealed that the majority of the respondents (75.96%) use the library to borrow books. Also 'to read books' and 'to obtain reference information' were the 2nd and 3rd main purpose marked by respondents with the response rate of 75.96% and 68.31% respectively. However, only 45.45% of the academics interested to read books in the library. Most of the academic staff are prefer to read the books in their own places than library, because the space allocated for reading is small and the library do not have separate cubical or place for academics. Moreover it was noted the purpose of using the library to read journals by the respondents comparatively low (12.02%) (See Fig. 2).

3.4 Utilization of information sources

In order to find out the usage of information sources for learning and research activities, the respondents were asked to mark their usage about identified information sources available in the library. Table 2 depicts the percentage of responses obtained regarding the usage of information sources.

Text books, thesis/ dissertations, reports and past-paper collections were the main resources used by the majority of users. Other materials are less or under-utilized. Further, the study explored lack of interest in and awareness of library collection is the reason for low usage.

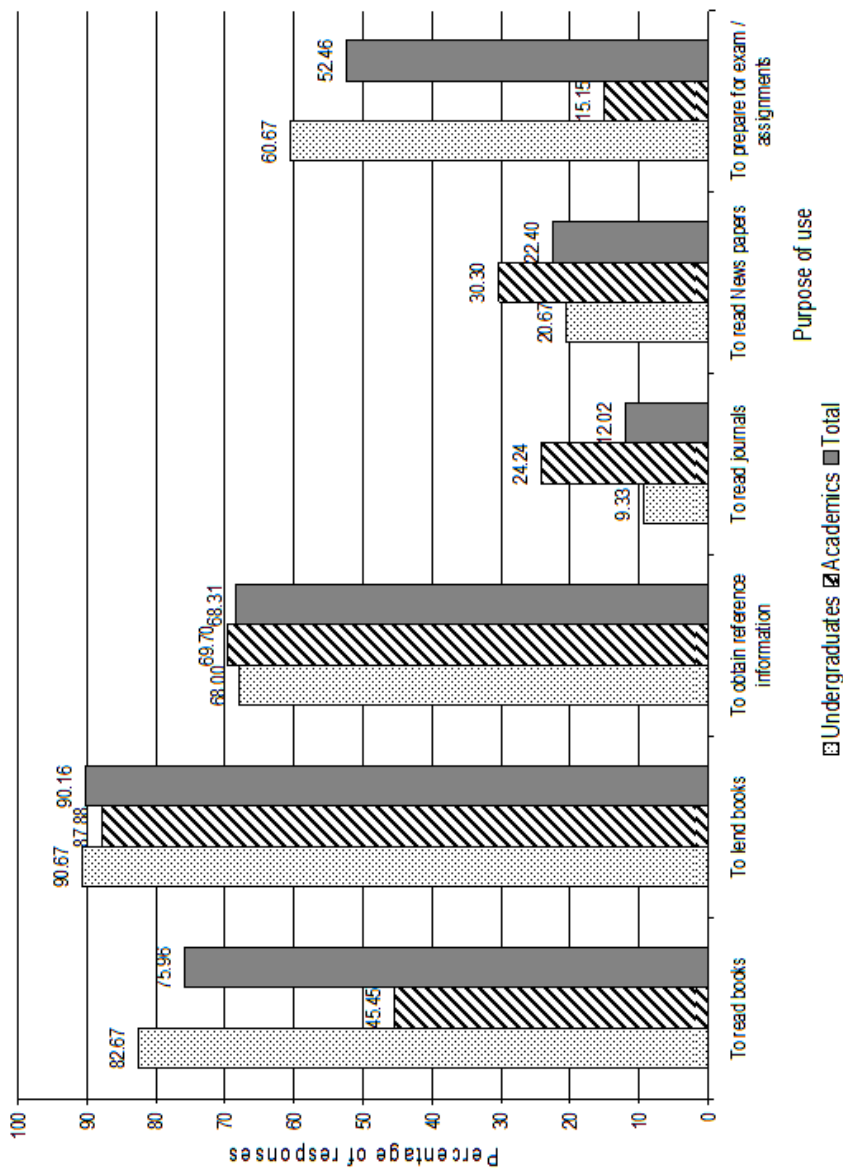


Figure 2: Responses for purpose of library use

Table 2: Usage of information sources

Information Sources	Responses (N=196)			
	Use		Not use	
Text Books	178	(90.82%)	18	(9.18%)
Print Journals	65	(33.16%)	131	(66.84%)
Reference Materials	35	(17.86%)	161	(82.14%)
Thesis/Dissertations	135	(68.88%)	61	(31.12%)
Current Contents	14	(7.14%)	182	(92.86%)
Reports	139	(70.92%)	57	(29.08%)
Past paper collections	120	(61.22%)	76	(38.78%)
Online Databases	64	(32.65%)	132	(67.35%)
CD ROMs	3	(1.53%)	193	(98.47%)

According to the respondents (85%), the need to upgrade the periodical section is crucial for their continuous research and teaching. Despite, the response from students does not have much awareness about exploiting journals either print or electronic for their referencing; rather they tend to rely on text books quoted by their teachers.

3.5 Adequacy of information resources

The respondents were asked to rate the adequacy of available information sources to perform their desire tasks in their own discipline. Table 3 shows the results.

Table 3: Perceived adequacy of information sources

Information Sources	Responses (N=196)					
	Adequate		Average		Inadequate	
Text Books collections	14					
	6	74.49%	50	25.51%	0	0%
Scholarly Journals	41	20.92%	14	72.45%	13	6.63%
Reference Materials	56	28.57%	10	51.53%	39	19.90%
			1			%
Thesis/Dissertations	15					
	0	76.53%	46	23.47%	0	0%
Magazines	12	6.12%	60	30.61%	12	63.27%
					4	%
Reports collections	13					
	7	69.90%	51	26.02%	8	4.08%
Past paper collections	13					
	5	68.88%	61	31.12%	0	0%
Online Databases	30	15.31%	12	6.12%	15	78.57%
					4	%
CD ROMs	0	0%	23	11.73%	17	88.27%
					3	%

According to the results, text books, dissertations, reports and past-paper collections were rated as adequate while online databases, CD ROMs and magazines were identified as inadequate. Due to the lack of funds, presently the library does not make subscription to any electronic journal or databases and the users are not allowed to borrow CD ROMs are the main reasons for inadequacy of electronic resources.

3.6 Assessment of information services

The results revealed, most of the respondents assessed guidance to users, lending facilities, display of new additions, cooperation of library staff, automated library services and library website were as 'good'. Reference services, computer assisted search services (OPAC) and user education programme were assessed as 'Fair'. Also the respondents rated internet and photo copying facilities offered by the library as 'poor'. At presently library has only two workstations for OPAC/ internet use and only one photocopy machine for photocopy service are the reason for dissatisfaction.

Table 4: Assessment of library services / facilities

Information Services/Facilities	Responses (N=196)					
	Good		Fair		Poor	
Guidance to users on library use	158	80.61%	39	19.90%	0	0%
Lending facilities	168	85.71%	28	14.29%	0	0%
Reference services	29	14.80%	16	8.16%	7	3.52%
Computer assisted search services (OPAC)	74	37.76%	12	6.12%	3	1.53%
Display of new addition to the library	156	79.59%	41	20.92%	0	0%
Internet facilities	28	14.29%	55	28.06%	112	57.14%

User Education Programmes	59 30.10%	13 7 69.90%	0 0%
Cooperation of library staff	138 70.41%	58 29.59%	0 0%
Automated Library Services	156 79.59%	40 20.41%	0 0%
Library Website	149 76.02%	47 23.98%	0 0%
Photo copying facilities	0 0.00%	90 45.92%	54.08 106 %

3.7 Currency

Latest editions and continuous additions to the collection make the stock current and relevant. Most of the academics prefer UK and US publications to be added to the collection. At the same time, the collection has to be weeded for outdated titles and volumes. The answers (72%) to the question on currency insist upon weeding of obsolete materials that mislead the user, thus cause delays in searches. Further, from the library's perspective, those materials unnecessarily occupy the space, as a result of which new resources are hard to be housed. This emphasize on the need for weeding practice that has not been implemented in the past. Library's office documents attribute administrative barriers and audit pressure for not executing such practices in the past, although there have been avenues which were not considered then.

3.8 Suggestions made by the library users

An open-ended question was posed to obtain the respondents suggestions and comments. Table 5 shows the suggestions made by the 147 respondents out of 196.

Table 5: Suggestions made by the library users

No	Comments	Frequency (N=147)
1	Library needs to add more copies of text books in lending and schedule reference collections	47
2	Library needs to subscribe to online journals and data bases and introduce more electronic services	35
3	Library needs to improve the photocopy service	28
4	Opening hours should be extended	15
5	Library needs to enhance its physical environment by providing more reading space to users	14
6	Library needs to place more staff to assist the users	8

The table 5 depicts, adding more copies to lending and schedule reference collections, subscribing online journals/databases and improving photocopy service were the main suggestions made by the users.

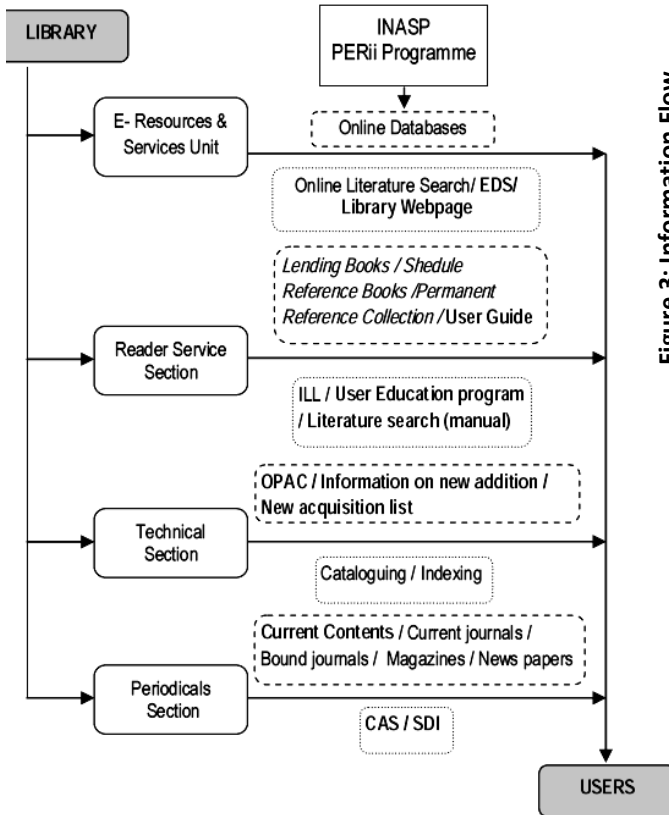
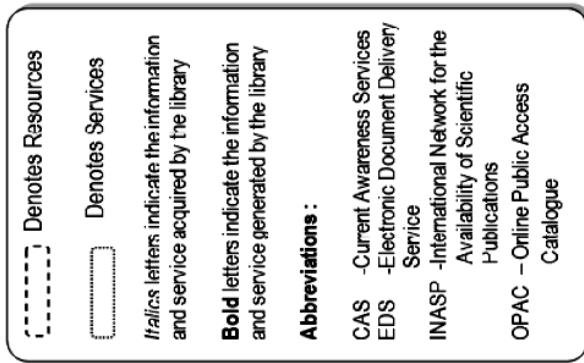


Figure 3: Information Flow

Nevertheless, subscriptions to electronic resources involve substantial amount of budget, therefore, they should be carefully selected for their appropriateness. Further, renewing of subscriptions will be strictly based on the justification of maximum utilization by both academics and students. These points will be highlighted in the collection management policy.

3.9 Information flow map

It was intended to generate a graphical representation to show the information flow within the library, based on the outputs of information audit and the information gathered from the library management. Figure 3 shows how the library gains information and how the information is disseminated by the library to its users through various information services provided by the library.

4 Conclusion

The usage level of the library is high and most of the users use library daily. However the frequency of use of library by the academic staff is comparatively low. Users mainly use the library to borrow books, read books and obtain reference information. Text books, Thesis/ Dissertations, Reports and Past paper collations are identified as most widely used information resources in the library.

Usage of print journals, reference materials, current contents, online databases and CD ROMs are very low. Moreover, compare to available print resources the electronic resources are inadequate to provide relevant information to the users. Users are satisfied on most of the basic library services and facilities except internet and photocopying facilities. Further the audit indicates lack of awareness about the availability of resources and services offered by the library and lack of interest shown by the users to use these resources and services are reasons for the inefficient usage of library resources and services. It is inferred that information literacy program is necessary to promote awareness and use of resources and services.

More emphasis will be put on acquiring electronic resources, providing access to CD ROM collections, developing electronic repositories, expanding internet facility, and improving reprographic services to cater to clients. Therefore the library management should take necessary actions to overcome the above issues to ensure the efficient and effective use of library.

5 Recommendations

The information audit implies the following recommendations to improve the efficiency and effectiveness of the library to fulfill the desire needs of clients.

- Since the users mainly depends on few library resources and services, library needs to provide proper awareness about the other resources specially the use of electronic resources by conducting comprehensive information literacy programmes.
- Library management needs to pay more attention on subscribing electronic journals and databases rather than acquiring routine books and reference materials.
- Properly arrange and develop the CD ROMs collection and make this resource available to users for lending.
- Developing e-repositories on past-papers and thesis collections will be benefited to the user community, because there is demand among students for these resources.
- Provide more workstations with internet connection to users and guide them to use the library OPAC.
- Library should improve the photocopy service by adding more machines at photocopy counter.
- To ensure that information resource entities available at Main Library, EUSL meet the needs of the users it is important to audit information resources and services continually.

References

- Australian Libraries Gateway. (2012). *Guidelines for the preparation of a collection development policy*. Retrieved from <http://www.nla.gov.au/libraries/resource/acliscdp.html>.
- Booth, A. & Haines, M. (1993) Information audit: Whose line is it any way?. *Health Libraries Review*, 10, 224-232. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed>
- Botha, H & Boon, J.A. (2003) The information audit: Principles and guidelines. *Libri*, 53, 23-38. Retrieved from <http://librijournal.org/pdf/2003-1pp23-38.pdf>
- Buchanan, S. & Gibb, F. (2008). The information audit: methodology selection. *International Journal of Information Management*, 28(1), 3-11, Retrieved from <http://www.sciencedirect.com>.
- Henzel, S. (2001). *The Information Audit: a Practical Guide*. Chippenham Esiltshire: Antany Rone.
- Moghaddam, G. G. & Talawar, V.G. (2009) Library consortia in developing countries: An overview.

Program: Electronic Library and Information Systems, 43(1), 94-104. Retrieved from www.emeraldinsight.com/0033-0337.htm

Orna, E.(1999). *Practical Information Policies*. Aldershot: Gower.

Ranasinghe, R.H.I.S. (1997). *The possibilities of resource sharing among university libraries in Sri Lanka*. Colombo: S. Godage and Brothers.

Swash, G.D. (1997). The Information Audit. *Journal of Managerial Psychology*, 12(5), 312-318. doi: 10.1108/02683949710183504

Walke, R. & Wadhwa, N. K. (2010). Collection Development in National Physical Laboratory Library: A Case Study. In *ETTLIS 2nd International Symposium 2010, Emerging Technologies and Changing Dimensions of Libraries and Information Services*. New Delhi: KBD Publication, pp. 709 – 714.

Automatic Document Classification Using a Domain Ontology

Wijewickrema, P. K. C. M.¹
manju@sab.ac.lk

Gamage, R. C. G.²
mailruga@gmail.com

1. Main Library, Sabaragamuwa University of Sri Lanka, Belihul Oya
2. National Institute of Library & Information Sciences,
University of Colombo, Colombo 07.

Abstract

Automatic classification has become an important research area due to the rapid increase of digital information today. Evidently, manual classification of documents is a tough work due to occurrences of vocabulary ambiguities of classification schemes as well as the language used in the text in hand.

In our study, we made an attempt to resolve this matter. This research has developed a computer programme that can automatically classify a given text document based on a well developed ontology. Therefore, the user gets correct options of classification just after feeding the document to the new system. The new ontology is a domain ontology which is based on the Dewey Decimal Classification scheme and the Sears list. Data was obtained for classification accuracy for both manual and automatic methods. Moreover, the relationship between the vagueness of language in documents and the inaccuracy of classification were

determined against manual classification and manual classification with automatic aid.

The research revealed that the results were more accurate when the newly developed automatic system was used. In addition, it also revealed that the vagueness of documents affects more in manual classification than in manual classification with the automatic aid.

Keywords: *Automatic classification, Text classification, Ontology*

1 Introduction

Rapid growth of information in the modern world leads people to organize text materials in different ways. Even if it is possible to organize them into some extent, it still can be difficult to find relevant materials owing to the flaws of the techniques followed in categorizing and arranging them.

To overcome this problem, It is a common practice to follow a standard library classification scheme for organizing information resources in an appropriate way. Although these classification systems attain such an exceeding significance, a few limitations of them may cause to mislead the classifier as well as the reader.

The vocabulary ambiguities which are present in natural languages makes the situation worse. As the classification schemes are based on natural languages, these ambiguities are inherited in them too. Out of a number of ambiguities in the vocabulary; synonyms, homonyms, hypernyms, hyponyms, holonyms, etc. may cause serious confusions due

to their frequent occurrences in language, and poor organization of the classification scheme as well (Husain, 1993). For example, “close to heart” can mean your affection to something (discipline of the humanities), or the physical proximity to the organ (disciplines of medicine or physiology). Another example is that, a particular work on ‘ontology’ in information sciences is possible to be classified under the ‘ontology’ in philosophy. Here, the word ‘ontology’ is a homonym (same pronunciation, but different meanings). In these kinds of circumstances, whenever the classifier fails to determine the discipline with respect to the context, there is a possibility of giving an inaccurate notation for the work. Ultimately, this may lead to unnecessary scattering of the information resources throughout the library. It increases the difficulty of accessing those items from the place where they have been located.

The problems of classification are not limited to the classification of printed documents, but also to the electronic materials as well. Since the classification of electronic documents partially depends on the language and the classification scheme; the ambiguities of the vocabulary can do a similar damage as they do in printed media. Therefore, in our study we sought to shed a light on this issue. As a result of this study, a computer programme has been developed that can automatically classify a given electronic text document. Within the classification process, we use the concept of ontology to build a rich knowledge base to minimize the vocabulary chaos. Therefore, the user gets correct classification results just after feeding the document to the new system.

1.1 Ontologies

An ontology is a formal representation of concepts in a domain of discourse and the relationships between those concepts. It is formally represented using an ontology language such as OWL or RDF (ai-one, 2011).

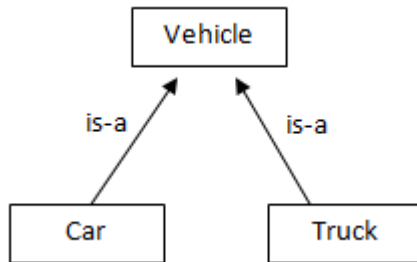


Fig. 1 Representation of terms in a lightweight ontology

For example, figure 1 shows a simple hierarchy of concepts. Cars and trucks fall into the same class called vehicles. Here, car and truck are instances or individuals in the ontology. Similarly, more complex ontologies can be built by drawing associations between concepts. These associations could be semantic (is a = hypernym/hyponym, is a part of = meronym/holonym, etc.), or function based (eg: as a result of, applies to, etc.). A lightweight semantic hierarchy is sufficient to document clustering.

2 Related works

Prabowo *et al* (2002) used ontologies for Web page classification with respect to the LCC (Library of Congress Classification) and DDC (Dewey Decimal Classification). This

attempt mainly focused on overcoming three major issues in the ontology-based automatic classification along with the use of DDC and LCC. The first issue comes with the mapping of LCC class representatives into the DDC class representatives, due to their different strategy and naming convention in organizing and naming captions. The second issue is correctly identifying the main topic of a Web page based on the terms available therein. The last issue is mapping concepts and representing relationships between concepts. However, the ontology method successfully tackled all these three issues.

A similar research has been conducted by Song *et al* (2005) for classification of Web pages. They have focused on document classification based on the similarities between the terminology extracted from Web pages and ontology categories. While building the ontology, concepts and their relational structure have been defined manually by subject (domain) specialists. As a result, the ontology was not so descriptive. Therefore, it was impossible to expect a high accuracy.

Another system for classification of Web documents was introduced by Litvak *et al* (2007). It classifies Web documents by extraction from a domain specific ontology. This methodology was evaluated within two specific domains called chemicals and textual data in 'Yahoo' (www.yahoo.com) collections. In contrast to the results of the chemicals domain (Web pages containing information on production of certain chemicals), the results received on the 'Yahoo' collections did not show such considerable improvements. According to these results, it is possible to conclude that this methodology produces the best accuracy

in chemicals domain when there is a large number of synonyms and taxonomic relationships. On the contrary, it gives less productivity when there are not enough synonyms.

Apart from these works with the development of Natural Language Processing (NLP), ontology has been applied for the purpose of classification of various types of document collections other than Web pages. Taghva *et al.* (2003) report about an ontology-based classification system for e-mails. However, it is difficult to be used for any other purpose than emails, because of the highly specialized nature of the application.

Another study has been conducted on an ontology-based classification system for news in electronic newspapers (Tenenboim *et al.*, 2008). This e-paper system uses a news ontology which is based on International Press Telecommunications Council (IPTC) news codes and its subject specificity is limited only up to a three level hierarchy (termed subject, subject matter and subject detail). Hence, this system is not so capable of classifying more specific articles.

Moreover, controlled vocabularies such as MeSH (Roberts and Souter, 2000) and INSPEC thesaurus (Plaunt and Norgard, 1998) have also been used to make a few automated classification systems for non Web documents. Later a study based on medical documents and International Code of Disease (ICD) classification scheme was carried out, but discovered several defectives such as; incompleteness of ICD alphabetical index, lack of existence of narrower concepts in the alphabetical index and the inaccuracy of the class assigned algorithm.

3 Methodology

The proposed system has two major stages. The first stage concerns on the pre-classification procedures. That includes stemming of terms to limit the index terms to the root terms, and elimination of stop words to reduce the less significant words. It also focuses on the use of a text classifier¹ to determine the broad discipline (primary classification) of the input document. In the second stage, an ontology is built to reduce the vocabulary ambiguities which can be occurred in classifying documents using the DDC scheme. Moreover, it also develops an automated system to direct the classification results of the first stage to the ontology developed in the second stage.

3.1 Ontology structure

Elimination of vocabulary ambiguities in classifying text documents is the major objective of this research. Therefore, this objective is intended to be achieved with the use of a well organized knowledge base. Generally, there are two types of ontologies or knowledge bases called domain ontology and upper ontology. Considering the purpose of this study; this has been built as a domain ontology. Hence this ontology is limited to the domain of philosophy and paranormal phenomena related subjects. According to the 21st edition of the DDC scheme, these subjects fall within the class range of 110 to 139. This limitation has been made due to the practical difficulties of building a large knowledge base. As a result, the study is intended to classify documents

¹ Text classifiers decide the subject of a document that is needed to be classified.

only within that range. However, this ontology is able to give the semantic relationships even outside the target domain. Therefore, even if the terms within the domain have multiple vocabulary relationships with the terms that are outside of the considered domain, still the document can serve to its purpose. Within this domain, relationships such as homonyms, synonyms, near synonyms, hypernyms & hyponyms have been defined. In addition, it also gives the super class (the broad class) of more specific classes. This helps to get a clear idea about the category where the document falls even if the class is ambiguous. Moreover, this also works like a description of the category it belongs. Therefore, it can be considered as a domain ontology that gives a solution to many varieties of vocabulary ambiguities.

For example, consider the term 'cosmology' and the way it is presented in this ontology.

Astronomy-Cosmology_InPhilosophyOfReligion_215.2

Cosmology_InAstronomy_523.1

Cosmology_InCreation_InChristianity_231.765

Cosmology_InHinduism_294.524

Cosmology_InPhilosophy_113

Creation-Cosmology_InReligion_291.24

Theology-Ethics-ViewsOfSocialIssues_InJudaism_296.3

Here, the broad subject appears on the right hand side while the specific subject appears on the left. For example, `Cosmology_InPhilosophy_113` represents the matching DDC number for pertaining of cosmology in the broader discipline called philosophy. Therefore, one can easily identify whether the term 'cosmology' in the document at hand belongs to philosophy, religion or astronomy. But if the class is given

simply as cosmology, then the user finds it difficult to determine whether it falls inside religion, astronomy or philosophy. Moreover, consider a document with the term cosmology, which fall inside the discipline of philosophy. if the librarian is much familiar with cosmology within the field of astronomy, and not with philosophy, then there is much possibility of misclassifying the document. However, since the new system provides enough hints about the classes where the term can fall, it is easy to determine the exact discipline where the term 'cosmology' falls. Now the librarian needs only a little knowledge about the document to classify it specifically.

Although the ontology is mainly built around the DDC class range 110 to 139, it also consists of some other main subjects as well. Accordingly, a considerable number of specific subjects that are coming under the DDC main classes 000, 100, 200, 300, 400, 500, 600, 700, 800 and 900 are used to build the ontology. For example, 'death' in cytology (this comes under the DDC class 570) has been inserted to the ontology as the term 'death' has multiple relationships with many other subjects (i.e. death in philosophy of life, death in medical ethics, death in family sociology, etc.) as well. In addition, the ontology also includes a homonym group. This group is consisted with more than 80 homonym terms. Moreover, many possible relationships have also been constructed for each of these terms.

This ontology has been constructed based on two main sources. Since the study targeted on classifying documents based on the DDC scheme, the ontology was first built based on the DDC scheme itself. DDC scheme has been recognised as a fine knowledge base by previous researchers too

(Prabowo *et al*, 2002). Hence, it is reasonable to use the same scheme for this purpose as well. In addition to the DDC scheme, this knowledge base has been enriched using the Sears list too. Therefore, it is much detailed than the DDC scheme within the selected domain. As a combination of two knowledge bases, the newly built domain ontology can perform much better than performing as two individual knowledge bases. The Protégé ontology editor was used to create the ontology structure.

3.2 Second stage of classification

The second stage of classification begins with passing the output of the first stage of classification to the second phase. In the first stage, the system selects the most relevant discipline of the given test document². To initiate the second stage, the chosen subject label is sent to a pre-built OWL ontology³. This ontology has been built using the freely available Protégé ontology editor. In fact, Protégé is not directly used in this system. As an outstanding ontology editor, Protégé is only used to develop the ontology file in OWL format. This OWL ontology file keeps all the information corresponding to the ontology structure. Hence, using an appropriate tool one can easily retrieve them whenever needed. After developing the ontology in OWL format, it is combined with the Lucene API (Application Programming Interface) using another computer programme called Protégé-OWL API. Here, the Protégé-OWL API has been used as a tool to retrieve desired information from the OWL

² Document that we need to classify.

³ OWL – Web Ontology Language. It is a family of knowledge representation languages for authoring ontologies.

ontology file. That means, one can easily query the ontology by using this Protégé-OWL API.

From the input of the test document to the output of possible classifications, this study used Java based free/open source tools. Each of these tools, specially APIs, linked to each other in a manner that they can be used to achieve the major tasks of the research. One of the remarkable features of this study is its use of free and open source computer programming tools. The use of each tool and the way they have been positioned in the entire system can be shown as in the figure 2.

As it has been shown above, the final results are given as a collection of possibilities for where the test document can belong. Therefore, the librarian has more opportunity to select or guess the most appropriate subject and the DDC number. That means, even if there are vocabulary ambiguities among the terms of the classification scheme, this system opens an opportunity for selecting the correct subject and class number.

4 Results

After obtaining the primary classification from the first stage of classification; its output has been directed to the ontology. Then the result of the second stage of classification was obtained. We used 58 test documents to evaluate the classification results. These documents belonged to 32 distinct subject categories. Moreover, they were selected from within the DDC subject range 110 to 139. The author tried not to be biased in the selection process. In addition,

quite a few documents were also selected from outside of this domain.

Then the test documents were classified according to the DDC system by an experienced classifier. The classifier was asked to give all the possible subjects/disciplines and the most preferred one. Then the same set of documents was again classified by the same subject classifier with the aid of the automated system. Again the classifier was instructed to select the most relevant subject out of all the possibilities given by the system. Moreover, it was also examined that, whether the correct class numbers appeared in the list of possibilities given by the automatic system.

4.1 Accuracy of classification

Table 1 shows the accuracy of the results that have been given at these events. The first column of the table gives subjects selected to test the accuracy of classification.

The rest of the columns have following test results

A - Total number of Documents B - Correct Manual Classification
C - Correct Manual/Automatic Classification
D - Correct Automatic Classification

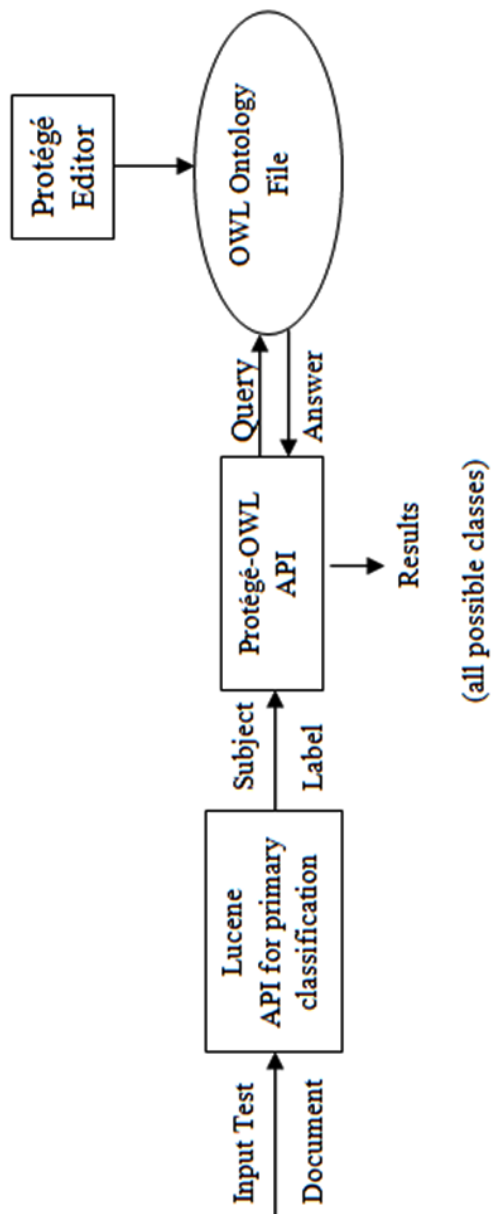


Figure 2: The proposed text classification system

Table 1: Correct manual, manual/automatic & automatic classifications after the second stage

Subject	A	B	C	D
Apparitions	1	0	1	1
Aries	1	1	1	1
Attributes-Faculties	1	0	0	0
Axiology	1	1	1	1
Causation	1	0	1	1
Cosmology	4	2	3	3
Epistemology	2	1	2	2
Evil Spirits	1	0	0	1
Feng Shiui	1	0	0	1
Geomancy	1	1	1	1
Leo	1	1	1	1
Libra	1	1	1	1
Love	1	1	1	1
Mind	1	0	0	1
Ontology	4	3	3	4
Other Religion	1	1	1	1
Palmistry	2	2	2	2
Phrenology	2	2	2	2
Pisces	1	1	1	1
Poltergeists	3	3	2	2
Precognition	2	2	2	2
Psychic Phenomena	2	2	2	2

Psycho Kinesis	3	2	2	3
Reincarnation	3	2	2	2
Space	1	1	1	1
Specific Mediumistic Phenomena	3	2	0	1
Spells-Curses-Charms	4	3	3	3
Spiritualism	1	0	1	1
Taurus	2	2	2	2
Teleology	1	1	1	1
Telepathy	3	3	2	2
Time	2	2	2	2

Percentages for correct classifications of each subject were determined according to the results of the table 1. Figure 3 was obtained by using the percentage accuracy.

According to the results in the table 1, five distinct subjects have been much accurately classified by the human classifiers using the automated system than manually. These subjects are Apparitions, Causation, Cosmology, Epistemology and Spiritualism. On the other hand, there are three subjects that were correctly classified by the human classifier than the automated system. These subjects are Poltergeists, Specific Mediumistic Phenomena and Telepathy. Out of all the subjects that were used; 62.5% were correctly classified by the human classifier who used the automated system. This figure was only 56.25% for the classifier when the automatic system was not used.

However, this percentage increased up to 78.12% in the presence of suggestions given by the system. Therefore, we can observe that there is a vast difference between the correctness of the manual classification and the number suggested by the new automated system. However, 74.14% of test documents were correctly classified manually. Yet 75.86% test documents were correctly classified by the human classifier with the assistance of the automated system. Correct class numbers for 86.21% documents were suggested by the automatic system. Hence, the human classifier has not been able to select the correct number for a considerable number of documents.

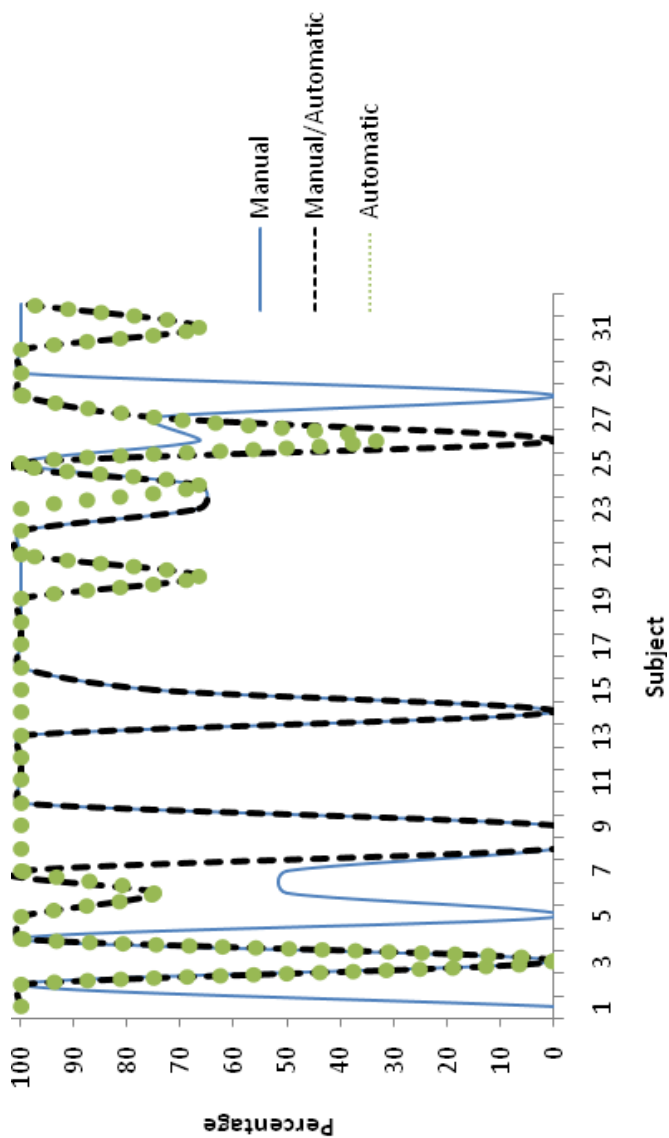


Figure 3: Percentages of correct manual, manual/automatic & automatic classifications

4.2 Relationship between Document Vagueness and Inaccuracy of Classification

The same set of 58 documents was analysed to check whether there is a relationship between the vagueness of content and the two methods of classifications. For this purpose, the accuracy of classification results obtained by manually and manually with the aid of the automatic system was recorded. In addition, the classifier was asked to mention whether each of the documents were vague or not. These were marked as 1 (vague) and 0 (not vague or direct or easy to classify). After the classification, classified documents were also similarly marked. If a document was incorrectly classified, it was marked as 1 while 0 was given for the correct classifications. Therefore, was easy to determine the effect of document ambiguity for the classification inaccuracy. The results can be given as follows.

Table 2: Document vagueness and inaccurate classifications done by manual and hybrid methods

Subject	Vagueness	Incorrect Manual Classifications	Incorrect Manual Classifications with the Automatic Aid
Apparitions	1	1	0
Aries	0	0	0
Attributes-Faculties	1	1	1
Axiology	0	0	0
Causation	1	1	0

Cosmology	1	1	0
	1	0	0
	1	1	1
	1	0	0
Epistemology	1	1	0
	0	0	0
Evil Spirits	1	1	1
Feng Shiui	0	1	1
Geomancy	0	0	0
Leo	0	0	0
Libra	0	0	0
Love	1	0	0
Mind	1	1	1
Ontology	1	0	0
	1	1	1
	1	0	0
	1	0	0
Other Religion	1	0	0
Palmistry	0	0	0
	0	0	0
Phrenology	0	0	0
	0	0	0
Pisces	0	0	0
Poltergeists	0	0	0
	0	0	1
	0	0	0
Precognition	0	0	0
	0	0	0
Psychic	1	0	0
Phenomena	1	0	0
Psycho Kinesis	0	0	0
	0	0	0

	1	1	1
Reincarnation	0	0	1
	1	1	0
	0	0	0
Space	1	0	0
Specific	1	0	1
Mediumistic	1	0	1
Phenomena	1	1	1
Spells-Curses-Charms	0	0	0
	0	0	0
	0	0	0
	1	1	1
Spiritualism	1	1	0
Taurus	0	0	0
	0	0	0
Teleology	0	0	0
Telepathy	0	0	1
	0	0	0
	0	0	0
Time	1	0	0
	1	0	0

Analysis of above results has been done using the statistical technique called binary logistic regression, using the Minitab statistical analysis package. Here, the odds ratio has been used to determine the existence of a relationship between the vagueness of the documents and the incorrect classifications obtained by manual and semi automatic methods. In fact, the odds ratio is used to measure the size of the effect, describing the strength of association between two binary data values. So that, here it was possible to measure the effect of document vagueness for the accuracy of classification.

Odds ratio for the vagueness of documents and incorrect classification of documents done by manually was 29.00.

Odds ratio for the vagueness of documents and incorrect classification of documents done by the semi automatic method was 3.61.

Therefore the odds ratio obtained for the effect of vagueness in the inaccurate classifications done manually is considerably higher. The effect of vagueness is lower in the semi automatic method.

5 Conclusions

In order to evaluate the classification performance, the classification accuracies obtained by manual, semi automatic and automatic methods were compared. It is clear that the accuracy is comparatively high when the automatic method was used. Therefore, it can be concluded that, the automated intervening, reports higher percentage of correct classifications than the manual classification. Moreover, the difference between the percentages of classification accuracy performed by automatic and manual systems was 12.07%. The same percentage between automatic and semi automatic systems was 10.35%. This shows to some extent, that the system was able to suggest the correct subject category of a document.

Often the curve for semi-automatic system runs over the curve for manual classification. It proves that, the semi automatic classification is better than the manual method.

In addition, the study proves that the vagueness of the documents highly affects manual classification, than in the semi automatic method.

References

- Ai-one (2011). Lightweight Ontologies (LWO) versus Full-Fledged Ontologies. Retrieved from <http://www.ai-one.com/tag/lightweight-ontology/>.
- Husain, S. (1993). *Library Classification: Facets and Analyses*. New Delhi: Tata McGraw-Hill.
- Litvak, M., Last, M., & Kisilevich, S. (2007). Classification of Web Documents using Concept Extraction from Ontologies. In *Proceedings of the 2nd International Conference on autonomous intelligent systems: Agents and data mining*. Retrieved from http://www.cs.bgu.ac.il/~litvakm/papers/concept_extraction.pdf
- Plaunt, C., & Norgard, B.A. (1998). An Association Based Method for Automatic Indexing with a Controlled Vocabulary. *Journal of the American Society for Information Science*, 49(10), 888-902. doi: 10.1002/(SICI)1097-4571(199808)49:10<888::AID-ASIS>3.0.CO;2-Y
- Prabowo, R., Jackson, M., Burden, P., & Heinz-Dieter, K. (2002). Ontology-Based Automatic Classification for the Web Pages: Design, implementation and evaluation. In *Proceedings of the 3rd International Conference on Web Information Systems Engineering*,

(pp. 182-191). Retrieved from
<http://portal.acm.org/citation.cfm?id=674083>

Roberts, D. & Souter, C. (2000). The Automation of Controlled Vocabulary Subject Indexing of Medical Journal Articles. *Aslib Proceedings*, 52(10), 384-401. doi: 10.1108/EUM0000000007030

Song, M. H., Lim S.Y., Kang, D.J., & Lee, S.J. (2005). Automatic Classification of Web Pages based on the Concept of Domain Ontology. In *Proceedings of the 12th Asia-Pacific Software Engineering Conference (APSEC'05)*, (pp. 645-651). doi: 10.1109/APSEC.2005.46

Taghva, K., Borsack, J, Coombs, J., Condit, A., Lumos, S., & Nartker, T. (2003). Ontology-based Classification of Email. In *Proceedings of the International Conference on Information Technology: Computers and Communications*, doi: ieeecomputersociety.org/10.1109/ITCC.2003.1197525

Tenenboim, L., Shapira, B., & Shoval, P. (2008). Ontology-based Classification of News in an Electronic Newspaper. In *Proceedings of the International Conference on Intelligent Information and Engineering Systems*, (pp.89-97). Retrieved from http://www.foibg.com/ibs_isc/ibs-02/IBS-02-p12.pdf

E-Journal Applications in Sri Lankan University Libraries

W.M.T.D. Ranasinghe
tharangad@kln.ac.lk

Library, University of Kelaniya.

Abstract

Scholarly journals, which contain very often the first-hand information about research findings, are very useful for the clientele of any library. With the impact of electronic publishing, journals have moved towards electronic versions. The objective of this paper is to study the use of electronic journals in Sri Lankan University Libraries. The study population covers 34 libraries including 15 main libraries and 19 faculty libraries. The main data collection method was the survey questionnaire method. Findings of the study reveal that 92.30% of libraries use e-journals. Study reveals that both users and librarians highly value electronic journals as an effective information resource. Financial constraints, infrastructure issues and manpower shortage at the professional level are the other major difficulties faced by university libraries in using e-journals.

Keywords: *Electronic journals; University Libraries-Sri Lanka*

1 Introduction

Since the first scientific journal appeared in the year 1665, journals have been serving as the primary medium of scholarly communication. Journals, which contain very often the first-hand information about research in progress, are very useful for the clientele of any library. Journals represent a significant part of any academic library. According to Luther (2000), expenditures on journals comprise about 70 percent of the average academic library's budget for materials.

The information explosion as well as the impact of ICT has quickened the progress of the journals. With the impact of electronic publishing, journals too started to be published electronically and found a new life on screen, on disk and online. The term "Electronic journals" (referred hereafter as e-journals) emerged in this environment. Harrods Librarian's Glossary defines an e-journal as "a journal which is available in electronic format; a physical, printed version may also be available" (Prytherch, 2005). The tremendous growth of e-journals in the marketplace has forced libraries to rethink their means of providing access to these coveted resources. Now, librarians have understood the power of these e-journals and seem to have accepted this novel medium.

1.1 Advantages of e-journals

E-journals could have certain advantages over their printed counterparts when specific features of the electronic medium are cleverly applied. Varian (1998), Ashcroft and Langdon (1999) & Rao (2001) refer to some of the common advantages of e-journals as follows:

- a. They are easily accessible even from an individual's desktop
- b. Therefore they are saving time in waiting for information
- c. It is much easier to monitor the use of electronic media
- d. It enables multi-user access
- e. The increase in cost for keeping printed material makes electronic forms more attractive from an economic viewpoint because of economy in storage - they are space saving
- f. There are no physical barriers
- g. The cost is low (sometimes free)
- h. Authors and readers get closer
- i. F. W. Lancaster (1995) in his famous article titled "The Evolution of Electronic Publishing" identifies several advantages of e-journals over print journals including:
- j. More rapid publishing of research results through electronic submission of articles; network communication among authors, editors, and referees; and by the fact that contributions can be added to a database as accepted rather than held to form the next "issue"
- k. More efficient dissemination of information through the matching of articles newly accepted into databases with the interest profiles of potential readers
- l. Innovative ways of presenting research results and other forms of data and information-analog models, motion, sound, hypertext, and hypermedia linkages (including linkages among journals and other electronic resources)
- m. Public peer review facilitated through the ability to link reader comments and evaluations to published articles
- n. Lower cost per successful match between article and reader

- o. Speed of publication and ease of communication lead to a more inter- active journal in which one contribution may spawn rapid responses from other researchers

1.2 E-Journals in Sri Lankan university libraries

University Libraries play a significant role in the development of scholarship in any country. There are 15 Universities in Sri Lanka governed under the UGC. They have their own main libraries as well as faculty libraries, which meet the information needs of their clientele. To make available the benefits of modern technology to their clientele, University Libraries in Sri Lanka have been using inventions of IT during the recent two-three decades. There are various endeavors to introduce e- journals to the University Library System. The SIDA/SAREC¹ Library Support Program is such an initiative, which is concerned with improving the scholarly journal resources in the University libraries. In January 2003, PERii²

¹ SIDA (Swedish International Development Cooperation Agency) was formed by the Government of Sweden in 1995 by merging 5 Swedish development assistant authorities including SAREC (Swedish Agency for Research Co-operation).

SIDA provides assistance to Africa, Namibia, Asia and Central America. In the Asian region, Bangladesh, India, Laos, Sri Lanka and Vietnam are receiving assistance (Senadeera, 2002).

² PERii (Program for the Enhancement of Research Information) is a program of support developed in 1999/2000 by partners in developing and transitional countries and INASP using new ITC.

RERii has 4 main objectives matching four different components of activities:

provided access to over 8000 full-text online journals, including those from Blackwells, EBSCO, etc. University libraries in Sri Lanka having realized the importance of consortia have formed a consortium in 2003 with the aim to obtain access to electronic information resources through collective acquisitions which will lead to cost effectiveness, wider usage of current information and expansion of research activities. It had the following objectives:

- a. Identify and access relevant electronic information resources for targeted user groups
- b. Promote use of electronic resources for information update and to build research capacity
- c. Develop strategies to share resources, introduce current awareness services and archiving relevant materials (Jayasuriya, 2008)

1. Delivering information to facilitate the acquisition of international information and knowledge through electronic information and communication technologies (ICTs)
2. Disseminating local research to develop and strengthen access to journals in the region as a medium for the dissemination of the results from national and regional research
3. Enhancing ICT skills to provide awareness or training in the use, evaluation and management of electronic information and communication technologies (ICTs)
4. Strengthening local publishing to enhance skills in the preparation, production and management of scholarly and scientific journals.

INASP through its PERii program has arranged for access to selected British Library services for researchers within institutes in Sri Lanka. Through PERI, the British Library's normal document delivery fees have been especially negotiated by INASP. INASP also supported the Sri Lanka Journals Online (SLJOL) initiative to facilitate online access to local journal literature.

2 Objectives of the study

This study seeks to understand how University Libraries in Sri Lanka are adapting to the rapid expansion of e-journals. It also investigates current procedures and practices as well as problems associated with the use of e-journals in Sri Lankan University Libraries.

2.1 Specific objectives

Specific objectives of the study are to:

- a. Identify the use of e-journals in University Libraries in Sri Lanka
- b. Measure the attitudes of users and librarians' with regard to e-journals
- c. Explore the major problems associated with the use of e-journals in University Libraries

3 Study sample and methodology

According to the Sri Lanka University Statistics (2008), there are 15 Universities in Sri Lanka, which are funded by UGC. The population of the present study covered all 15 Main libraries and 19 Faculty libraries of these universities.

However Postgraduate Institute Libraries and Departmental Libraries were excluded from this study. As the population was not very large no sampling technique was used for this study.

Primary data for the present study were collected by means of a questionnaire survey method. A structured questionnaire was used to collect primary data. The questionnaires were administered by mail to all the Librarians of the sample. Thereafter, several follow-up interviews were undertaken with them in order to obtain further information and to verify the information furnished by them.

Collected data were analyzed using standard statistical methods and presented through tables, Figures, charts, etc. Statistical Package for the Social Sciences (SPSS) Version 13.0 for Windows was mainly used for statistical analysis. Before entering data to the program, collected data were cleaned for consistency and were coded. In addition to that, MS Excel 2010 was also used to analyze several questions of the questionnaire.

4 Findings of the study

Out of 34 university libraries, 26 libraries responded to the survey and as a percentage, it is over 76% of response rate. Out of these responded libraries, 92.30% of university libraries provide access facilities to e-journals. Gift subscription (95.83%) and consortia subscription (45.83%) are the widely used methods for subscribing e-journals. Only 33.33% of university libraries have been acquiring e-journals through individual subscription mode (Fig. 1).

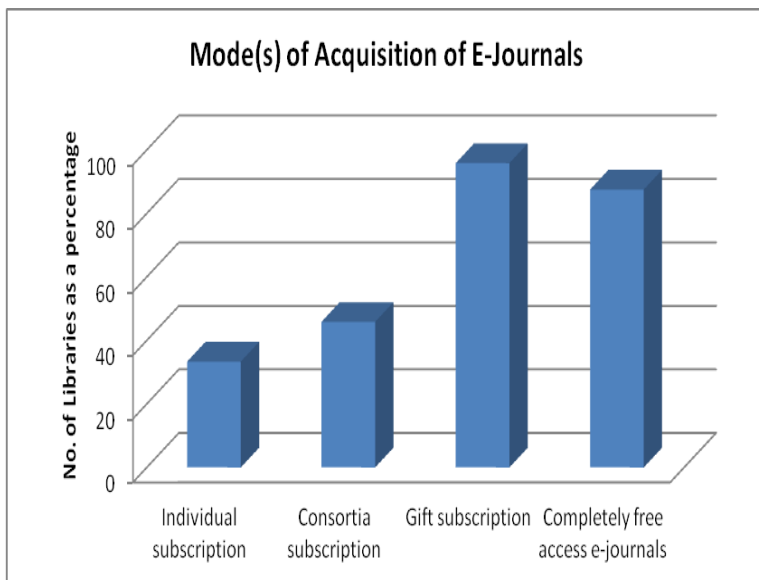


Fig. 1: Mode(s) of acquisition of e-journals (Note: Respondents were permitted multiple answers)

The study aimed at identifying the amount of budget allocations for subscribing e-journals by university libraries during last 03 years (2009-2011). According to the findings, 61.53% of university libraries haven't allocated any funds for subscribing to e-journals during the period 2008-2011. Only 3.84% of university libraries have spent an average of over one million rupees per year during the time studied for subscribing to e-journals. Another 23.07% of libraries have spent an average of less than one million rupees for subscribing to e-journals during the period 2009-2011.

Although identifying library users' perceptions towards e-journals is important, the present study did not contact library e-journal users directly due to the limitations of the study. However, the study aimed to collect such information through the questionnaire given to respective librarians, assuming that librarians are well aware of their users' preferences. According to the findings, 75% university librarians strongly agree or agree that their users prefer e-journals than printed ones. 41.66% of librarians strongly agree or agree that available e-journals are heavily used. However, only 4.16% of university librarians agree that users are satisfied with available e-journals and 95.83% of them assume that their users need more e-journals.

E-journals associate with many advantages for libraries those who use them (as described under section 1.1). Librarians tend to acquire e-journals because of these advantages. The present study aimed at identifying the reasons for adopting e-journals in libraries. Accordingly, librarians were given 10 reasons to measure the level of significance of each in preferring for e-journals in their libraries. Accordingly, the 'access factor' plays a major role in selecting e-journals for

university libraries. All the university libraries (100%) find 'allowing remote access' as a highly significant or significant reason for preferring for e-journals. 'Facilitating simultaneous access' is found as a highly significant or significant reason for preferring for e-journals by nearly 92% of university libraries. 'Providing timely access' is found as a highly significant or significant reason for preferring for e-journals by 83% university libraries. In addition to that, 96% of university libraries rate 'supporting searching facilities' as another significant reason for preferring for e-journals. Further, 75% of university libraries prefer e-journals since they are 'saving physical storage space' in libraries.

One of the main objectives of the study was to identify the specific problems faced by university libraries in Sri Lanka in dealing with e-journals. Findings demonstrate that all the university libraries (100%) face financial constraints in paying for e-journal subscriptions. In addition 53.84% of university libraries also face financial constraints related to purchasing hardware equipment such as computers. As far as the infrastructure issues are concerned, 65.38% of university libraries are lack of computers required to facilitate the use e-journals. 61.53% of university libraries also consider network bandwidth constraints as an obstacle in accessing e-journals. Lack of human resources related to e-journal applications is another significant problem faced by libraries. 61.53% of university libraries share the problem. 26.92% of university libraries report that the lack of support from administration of the parent organization is another difficulty they face in dealing with e-journals. In addition, 23.07% of university libraries recognize the lack of interest of library users as an obstacle in introducing e-journals (Fig. 2).

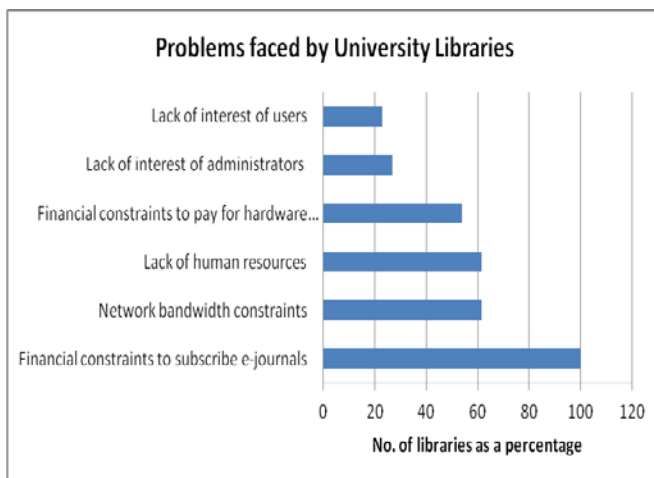


Fig. 2: Problems faced by University Libraries in accessing e-journals (Note: Respondents were permitted multiple answers)

5 Conclusions and policy implications

The study comes to following conclusions as per the findings of the study.

- a. Budget allocation for e-journals is not sufficient. Further, majority of libraries do not have their own IT vote and this affects the development of IT-based infrastructure required to improve the access facilities to e-journals.
- b. Majority of university libraries gain access to e-journals through consortia and gift subscription modes due to insufficient funds for subscribing e-journals individually.
- c. Access factor is the main reason for selecting e-journals for Sri Lankan libraries.

- d. Three major problems associated with the use of e-journals still persist. Financial problem is the major obstacle. Infrastructure issues and manpower shortage at the professional level are the other major difficulties that librarians face in using e-journals.
- e. Due to insufficient funds, most libraries have not been able to acquire an adequate number of e-journals. As a result most of the libraries have to depend on gift subscription programs such as PERii of INASP and online free access e-journals listed in services such as DOAJ.

Following suggestions can be made (as areas for improvement) to enhance the use of e-journals in university libraries in Sri Lanka.

- a. To provide an effective service with e-journals, IT-based infrastructure has to be improved within the libraries. A separate IT vote should be allocated for libraries.
- b. Budget allocations should be increased to enable the libraries to subscribe to more e-journal databases.
- c. Cooperation among Sri Lankan libraries should be encouraged and motivated. Cooperative acquisition plan for e-journals should be devised in order to avoid the duplication of titles among libraries. Articles of e-journals acquired by individual libraries can be shared among the other libraries through inter-library loan programs.
- d. A national level consortium (which is similar to the INFLIBNET of India and UGC INFONET of India) on e-journals can be formed in collaboration with the UGC and National Science Foundation.
- e. Libraries should be shifted from costly individual e-journal subscription models to cost effective methods such as article-based document delivery services.

- f. Libraries should identify the freely available online e-journals (i.e. e-journals listed in DOAJ) and list them in library websites. These lists should be updated regularly to add new titles as well as to remove the obsoleted ones.
- g. The journals which are published by Sri Lankan universities and research institutions should be published with their electronic counterparts, in order to get a global visibility to the research output of the country.

References

- Ashcroft, L. & Langdon, C. (1999). Electronic journals and university library collections. *Collection Building*, 18(3). 105-114.
- Jayasuriya, S. (2008). Access to electronic information: Challenges and initiatives. *Journal of the University Librarians Association of Sri Lanka*. 12, 18
- Lancaster, F. W. (1995). The Evolution of Electronic Publishing. *Library Trends*, 518-527
- Luther, J. (2000). *White paper on electronic journal usage statistics*. Washington D.C.: Council on Library and Information Resources. Retrieved from www.clir.org/pubs/reports/pub94/pub94.pdf
- Prytherch, R. (Ed.) (2005). *Harrod's librarians' glossary and reference book*. (10th ed.) Burlington: Ashgate.

Rao, M.K. (2001). Scholarly communication and electronic journals: Issues and prospects for academic and research libraries. *Library Review*, 50(4).

Varian, H.R. (1998). The future of electronic journals. *The Journal of Electronic Publishing*, 4(1). Retrieved from <http://www.press.umich.edu/jep/04-01/varian.html>

Short Papers

(Extended abstracts)

අන්තර්ජාල තොරතුරු ගවේශනය කෙරෙහි ද්විතියික පාසල් සිසුන් දක්වන කුසලතා

කේ.එල්.එම්. අල්විස්
aiwisanjela@gmail.com

ගුරු පුස්තකාලයාධිපති, බප/ජය මහමාන්‍ය විද්‍යාලය, අතුරුගිරිය

1 හැඳින්වීම

වර්තමානයේ ජනගහන වර්ධනය, ගෝලීයකරණය, නව තාක්ෂණික දියුණුව, හා තොරතුරු පිපිරුම යන සාධකවල බලපෑම මානව පැවැත්මට ප්‍රබල අභියෝගයක් වී ඇත. මුද්‍රණ යන්ත්‍රය බිහිවීමත්, නවීන විද්‍යා ක්ෂේත්‍රයේ දියුණුවක් ඇති වීමත් සමඟම පොත්පත් සුලබව බිහිවීමත්, වර්ණය හා හැඩය ආදියෙන් එහි ස්වභාවය ශීඝ්‍රයෙන් වෙනස්වීමත් සමඟම නව දැනුම් සම්භාරයක් විශාල වශයෙන් ලොව පුරා ප්‍රචලිත වීමත් සිදුවිය. මේ නිසා ඉගෙනුම් ඉගැන්වීම් ක්‍රියාවලියේ දී නව වෙනස්වීම් සිදු වීම නිසා නව ක්‍රමවේද, නව සම්පත් හඳුනාගෙන පරිහරණය කිරීමට සිදුවිය.

දැනුම වේගයෙන් ප්‍රසාරණය වන සමාජය තුළ අධ්‍යාපනය ද විවිධාංගීකරණයට භාජනය වෙමින් පවතී. ශ්‍රී ලංකාවේ වර්තමාන අධ්‍යාපනයේ ගුරු කේන්ද්‍රීය ඉගෙනුම වෙනුවට ශිෂ්‍ය කේන්ද්‍රීය ඉගෙනුම ක්‍රියාත්මක වේ. එය ක්‍රියාකාරකම් පාදක ඉගෙනුමක් (E-5) තුළින් සිදු කෙරේ. අධ්‍යාපන ක්‍රියාවලිය පෙරට වඩා බෙහෙවින් සංකීර්ණ වී නව ඉගෙනුම් සංකල්ප එකතු වීම නිසා, ගුරු සිසු දෙපිරිසට ම වැඩි වේගයකින් හා ප්‍රමාණයකින් නව දැනුම උකහා ගැනීමට ද සිදුවිය. මේ සඳහා උපකාරී වන තොරතුරු හා සන්නිවේදන තාක්ෂණය ඉගෙනුම් ආධාරකයක් හා ඉගෙනුම ලබන විෂයයක් ලෙසත් ඉගෙනුම් ඉගැන්වීම් ක්‍රියාවලියේ දී භාවිත වේ. 2002 වසරේ සිට අ.පො.ස (උ/පෙළ) සඳහා සාමාන්‍ය තොරතුරු තාක්ෂණය (GIT) විෂය අධ්‍යාපන ක්ෂේත්‍රයට හඳුන්වා

දෙන ලද අතර 2009 වසරේ සිට සංශෝධිත විෂය නිර්දේශය ද හඳුන්වා දී තිබේ.

ද්විතියික ශ්‍රේණි (10 - 11) සඳහා තොරතුරු හා සන්නිවේදන තාක්ෂණ විෂය (ICT) හඳුන්වා දෙනු ලැබුවේ 2006 වසරේ දී ය. ඉන් අනතුරුව 2007 නව විෂයමාලාවේ තෙවන විෂය කාණ්ඩයේ විෂයයක් ලෙස දැනට එය ඉගැන්වීම සිදු කරයි.

එම විෂය නිර්දේශයට අදාළව අන්තර්ජාලය තුළින් තොරතුරු ගවේෂණය, තොරතුරු කුසලතාවක් ලෙස හඳුනා ගෙන ඇත. එහි දී සිසුන්ට තොරතුරු අවශ්‍යතාවය හඳුනා ගැනීම, තොරතුරු සෙවීම සඳහා විමසීම් කිරීම (query), එම ලබා ගත් තොරතුරුවලින් අවශ්‍ය තොරතුරු වෙන් කර ගැනීම ආදිය සඳහා තොරතුරු කුසලතා භාවිතයට අවශ්‍ය දැනුම පිළිබඳ ඉගැන්වීමක්, අවබෝධයක් ලබා දිය යුතුව තිබේ. ඒ අනුව අන්තර්ජාලය ඔස්සේ තොරතුරු ගවේෂණයෙන් නිවැරදි තොරතුරු වෙත ප්‍රවේශ වීම සඳහා අවශ්‍ය දැනුම වශයෙන් පහත දැක්වෙන හැකියාවන් නම් කළ හැකි ය.

අ. අන්තර්ජාල ලිපිනයක ව්‍යුහය දැන ගැනීම (උදා: www.gov.lk)

ආ. බුලියන් තර්ක ක්‍රම භාවිතය පිළිබඳව දැන ගැනීම

ඇ. සෙවුම් යන්ත්‍ර භාවිතය

මින් තම අවශ්‍යතාවයට සුදුසු ගවේෂණ මාර්ගය කුමක් ද? තම ගැටළුවට ගැලපෙන නිවැරදි තොරතුරු මොනවාද? යනාදි ප්‍රශ්න රැසකට ශිෂ්‍යයා මැදි වී තොරතුරු කාංචාවෙන් පෙළෙයි. මේ අනුව ගුරුවරයා තොරතුරු කාංචාවෙන් මිදීමට මාර්ගය පෙන්වා දිය යුතුය. ඒ සඳහා තොරතුරු කුසලතා හා අන්‍යෝන්‍ය වශයෙන් බැඳී පවතින තොරතුරු හා සන්නිවේදන තාක්ෂණය විෂයය උපකාරී කර ගත යුතු වේ.

ICT විෂය මාලාවේ එක් අංගයක් වන, අන්තර්ජාලයෙන් තොරතුරු ගවේශනය කිරීමේ කුසලතාවය සිසුන් තුළ කොතෙක් දුරට ඇති ද යන්න සොයා බැලීම මෙම අධ්‍යයනයේ අරමුණ යි.

2 සාහිත්‍ය ගවේශණය

එඩ්ගාර් ෆෝරේගේ ප්‍රධානත්වයෙන් යුනෙස්කෝ ආයතනය විසින් එළි දක්වන ලද දිවි පැවැත්ම සඳහා ඉගෙනීම: අදට හා හෙටට ගැලපෙන අධ්‍යාපනය (ෆෝරේ, 1978) හි සෑම රටක්ම තම අධ්‍යාපන පරමාර්ථ ඉටුකර ගැනීමට ඇතුළත් කර ගත යුතු පරමාර්ථ 4 ක් දක්වා ඇත.

1. විද්‍යාත්මක මානවීයභාවය
2. නිර්මාපණත්වය කරා
3. සමාජ වගකීම වෙතට
4. පූර්ණ මිනිසකු බිහි කිරීම

යාවච්ච අධ්‍යාපනය හා ඉගෙනීම් සමාජ යන සංකල්පයන් සාක්ෂාත් කර ගත යුතු බව මෙම දිවි පැවැත්ම සඳහා ඉගෙනීම වාර්තාවෙන් අවධාරණය කර තිබේ.

එමෙන්ම යුනෙස්කෝව මගින් 1998 දී ඉදිරිපත් කළ 21 වන සිය වස සඳහා වන අධ්‍යාපනය වාර්තාව නම් කර ඇත්තේ 'ඉගෙනුම : ඇතුළත නිධානය' යනුවෙනි (Delors, 1996). මෙම ඩෙලර්ස් වාර්තාවෙන් පුද්ගලයා සතු විභව ශක්තිය ඉස්මතු කර ගැනීම අධ්‍යාපනයේ පරමාර්ථය බව සඳහන් කර ඇත.

මින් පෙන්වා දෙන්නේ, 21 වන සියවසේ අධ්‍යාපනය, බලාපොරොත්තු සහගත නොවන අවස්ථාවකදී ඕනෑම අභියෝගයකට මුහුණ දීමට ශක්තිය ඇතිවන ලෙසත් පර්පුර්ණ කුසලතාවන් ලබා ගැනීමට හැකිවන ලෙසත් ඉගෙනීමේ සකස් කළ යුතු බවත් අධ්‍යාපනයේ අවසාන ඉලක්කය රැකියාවක් හෝ වෘත්තියක් කිරීමට අවශ්‍ය දැනුම ලබා දීම පමණක් නොවන බවත් ය. ඉගෙනීමේ අන්තර්ගතය ශීඝ්‍රයෙන් වෙනස්වීම හා විකාශනය

සිදුවීම නිසා 21 වන සියවසේ අධ්‍යාපන භූමිකාව ද අධිවේගයකින් වෙනස් විය යුතු ය.

ඒ අනුව මෙරට විෂයමාලා පිළියෙල කිරීමේ වගකීම දරන ජාතික අධ්‍යාපන ආයතනය විසින් ශ්‍රී ලංකාවේ පාසල් පද්ධතියට නව විෂයමාලාව හරහා සම්පත් පාදක අධ්‍යාපනය, තොරතුරු පාදක අධ්‍යාපනය, නිපුණතා පාදක අධ්‍යාපනය සහ ක්‍රියාකාරකම් පාදක ඉගෙනුම ආදී සංකල්ප එක්කොට ඇත.

නිපුණතාවක් යනු දැනුම, ආකල්ප, කුසලතා හා අන්තර්පුද්ගල හැකියා ඒකරාශී වී ගොඩනැගෙන ජීවිත පුරුද්දකි. (ගිනිගේ, 2006)

නිපුණතා පාදක විෂයමාලාව සඳහා ජාතික අධ්‍යාපන කොමිෂම (2003: 72-75p) නිපුණතා කට්ටල 7 ක් ඉදිරිපත් කර ඇත.

1. සන්නිවේදන නිපුණතා
2. පෞරුෂත්ව වර්ධනයට අදාළ නිපුණතා
3. වැඩ ලෝකයට සුදානම් වීමේ නිපුණතා
4. පරිසරයට අදාළ නිපුණතා
5. ආගම හා ආචාර ධර්මයන්ය අදාළ නිපුණතා
6. ක්‍රීඩාව හා විවේකය ඵලදායීව ගත කිරීම පිළිබඳ නිපුණතා
7. ඉගෙනුමට ඉගෙනුම පිළිබඳ නිපුණතා

මෙම නිපුණතා පාදක විෂයමාලාවක් යටතේ ශිෂ්‍ය කේන්ද්‍රීය ඉගෙනුම ඉගැන්වීම ක්‍රියාවලියක් මෙහෙයවීම සඳහා යොදාගත හැකි ඉතා සාර්ථක ක්‍රමයක් ලෙස ක්‍රියාකාරකම් පාදක ඉගෙනුම හඳුන්වා දිය හැකිය (ගිනිගේ, 2006).

ඒ අනුව ක්‍රියාකාරකම් පාදක ඉගෙනුමේ එන, වර්තමානයේ පාසල් පද්ධතිය තුළ භාවිත වන E-5 ආකෘතියට අනුව ඉගැන්වීමෙන් නිර්මාණශීලී ඉගෙනුම් ක්‍රියාවලියක් හරහා නිපුණතා අත්පත් කර ගැනීමට උපකාරී වේ. මෙයින් අපේක්ෂා කරනුයේ සිසුන් තුළ තොරතුරු සාක්ෂරතාවය ඇති කිරීමයි.

තොරතුරු සාක්ෂරතාවය යනු තොරතුරුවලට ප්‍රවේශවීම, ඇගයීම, සංවිධානය, සකස් කිරීම හා ඉදිරිපත් කිරීමට ඇති හැකියාව වශයෙන් නිර්වචනය කෙරේ. පාසලේ දී තොරතුරු කුසලතා ඉගැන්වීමෙන් දරුවා ජීවිතය පුරාම සිදු කරන අඛණ්ඩ ඉගෙනීමේ ක්‍රියාවලිය පහසු කිරීමටත් තොරතුරු සාක්ෂරතාවය ඇති කර ගැනීමටත් උපකාරී වේ.

සවිඛලකරණ 8 ආදර්ශයට අනුව (Wijetunga and Alahakoon, 2005) ශිෂ්‍යයා විසින් ප්‍රගුණ කර ගත යුතු තොරතුරු කුසලතා 8 ක් දැක්වෙයි. ඒවා පහත පරිදි ය.

- අදියර 1 - ගැටලුව හඳුනා ගැනීම
- අදියර 2 - තොරතුරු ගවේෂණය
- අදියර 3 - තොරතුරු තෝරා ගැනීම
- අදියර 4 - තොරතුරු සංවිධානය
- අදියර 5 - නිර්මාණය
- අදියර 6 - ඉදිරිපත් කිරීම
- අදියර 7 - ඇගයීම
- අදියර 8 - නව අවස්ථාවක භාවිතය

3 අධ්‍යයන නියැදිය

බස්නාහිර පළාතේ, ශ්‍රී ජයවර්ධනපුර අධ්‍යාපන කලාපයේ, කඩුවෙල කොට්ඨාශයේ ඇති පාසල් ගණන 32 කි. ඉන් 2011 පාසල් සංගණන ලේඛනයෙන් හඳුනා ගත් ද්විතියික (10 - 11) ශ්‍රේණි සඳහා ICT විෂය උගන්වනු ලබන පාසල් 14 කින් 2010 අ.පො.ස (සා/පෙළ) ප්‍රතිඵල විශ්ලේෂණ ලේඛනයට අනුව අවම ප්‍රතිඵල පෙන්වන සෑම පාසල් වර්ගයකින්ම (1AB - ජාතික, 1 AB, 1C හා 2) එක් පාසලක් බැගින් නියෝජනය වන පරිදි පාසල් 4ක් නියදිය වශයෙන් තෝරා ගන්නා ලදී. මෙම පාසල්වල ICT විෂය උගන්වනු ලබන ගුරුභවතුන් හා එම විෂය ඉගෙන ගන්නා ද්විතියික ශ්‍රේණි සිසුන් පමණක් නියැදිය ලෙස තෝරා ගන්නා ලදී.

පර්යේෂණය නිම කිරීමට ඇති පුළුල් විෂය පරාසය හා සීමිත කාලය නිසාත් දත්ත රැස්කිරීම, දත්ත විශ්ලේෂණය සහ නිගමනවලට එළඹීමේදී එය ඉතා නිවැරදිව කළ යුතු නිසාත් සිංහල මාධ්‍ය පාසල් 4 කට නියැදිය සීමා කරන ලද අතර, අන්තර්ජාල තොරතුරු ගවේෂණ කුසලතාව පිළිබඳව පමණක් මෙහිදී අධ්‍යයන කරනු ලැබේ.

4 පර්යේෂණ ගැටලුව

මෙහි පර්යේෂණ ගැටළුව වූයේ ද්විතියික ශ්‍රේණි සඳහා තොරතුරු හා සන්නිවේදන තාක්ෂණය විෂය ඉගැන්වීමේ දී තොරතුරු කුසලතා පිළිබඳ දැනුමෙන් විෂය ඉගෙනීම සඳහා බලපෑමක් පැවතිය හැකි බවයි.

5 ක්‍රමවේදය

තොරතුරු හා සන්නිවේදන තාක්ෂණය විෂයයට අදාළ අන්තර්ජාලයෙන් තොරතුරු ගවේෂණය කිරීම සම්බන්ධව සිසුන්ගේ සාධන මට්ටම විමසා බැලීම සඳහා අන්තර්ජාල කාර්ය පත්‍රිකාවක් භාවිත කෙරිණි.

ඒ අනුව සිසුන් හට මෙම අන්තර්ජාල කාර්ය පත්‍රිකාව ලබා දී ඔවුන් දන්නා අයුරින්, වෙබ් අඩවි ආශ්‍රයෙන් දී ඇති ප්‍රශ්නවලට පිළිතුරු සෙවීමට යොමු කරවන ලදී. මෙම අන්තර්ජාල කාර්ය පත්‍රිකාවේ ඇතුළත් වූ ප්‍රශ්න ගණන 5 කි. ඒවායින් විවිධාකාර තොරතුරු ගවේෂණ හැකියාවන් මැන බැලීම අරමුණ විය. එහි දී මතුපිට ඉගෙනුමේ සිට සරල ඉගෙනුම කරා දිවෙන ඉගෙනුම් මට්ටම් යොදා ගනිමින් සාමාන්‍ය හා සරල ගවේෂණය, සංකීර්ණ ගවේෂණය, පින්තූර ගවේෂණය, ඉලෙක්ට්‍රොනික ශබ්දකෝෂ හා විශ්වකෝෂ ගවේෂණය ආදිය මගින් තොරතුරු සෙවීමට අවශ්‍ය තොරතුරු කුසලතා භාවිතය පිළිබඳ දැනුම පරීක්ෂා කළ හැකි පරිදි සකස් කෙරිණි. පසුව ඇගයුම් ක්‍රමයක් ඇසුරින් සෑම ශිෂ්‍යයකුට ම/ශිෂ්‍යාවකට ම ලකුණු සංඛ්‍යාවක් පිරිනැමිණි. ඒ අනුව තොරතුරු අවශ්‍යතාව හඳුනා ගැනීම සඳහා ලකුණු 5 ක්, තොරතුරු සෙවීම

සඳහා ලකුණු 10 ක් හා ලබා ගත් තොරතුරු වෙන් කර ගැනීම සඳහා ලකුණු 15 ක් වශයෙන් ලකුණු පිරිනමන ලදී.

සමීක්ෂණ නියැදි පර්යේෂණ ක්‍රියාවලිය භාවිතයෙන් රැස් කළ දත්ත උපයෝගී කර ගෙන, ප්‍රමාණාත්මකව හා ගුණාත්මකව තොරතුරු විශ්ලේෂණය කිරීමට හා ප්‍රතිඵල නිරූපනය කිරීමට උත්සාහ කෙරිණි.

6 ප්‍රතිඵල විශ්ලේෂණය

අන්තර්ජාලයෙන් තොරතුරු ගවේෂණය කිරීමේ හැකියා මට්ටම පිළිබඳව 1 වැනි වගුවෙන් පෙන්වා දෙයි.

වගුව 1. අන්තර්ජාල කාර්ය පත්‍රිකාව සඳහා ලබා ගත් ලකුණු විශ්ලේෂණය

ලකුණු පරාසය	1 ඊඩ් (භාතික)		1 ඒඩ්		1 ෂී		2		මුළු ගණන	
		%		%		%		%		%
15-34	17	20	15	21	0	0	0	0	32	19
35-54	30	36	32	44	0	0	0	0	62	38
55-74	29	34	21	29	9	100	0	0	59	36
75-94	8	10	4	6	0	0	0	0	12	7
මුළු ගණන	84	100	72	100	9	100	0	0	165	100

ඉහත වගුවට අනුව අන්තර්ජාල කාර්ය පත්‍රිකා ලකුණු විශ්ලේෂණයේ දී පෙනී ගියේ වැඩි ම ලකුණු ලබාගත් (75 - 94) සිසුන් සංඛ්‍යාව 12 ක් ද, අවම ලකුණු ලබා ගත් පිරිස (15 - 34) 32 ක් බව යි. වැඩි සිසුන් සංඛ්‍යාවක් සිටියේ අතරමැදි අගයන් සඳහා ය.

ප්‍රතිශත වශයෙන් ගත් කල, වැඩි ම ලකුණු ගත් ප්‍රමාණය සියයට හතකි. සියයට 19ක් ම අවම ලකුණු රැගෙන තිබේ. ලකුණු 50ට වඩා රැගෙන ඇත්තේ සියයට 43 ක් පමණි. පාසල් වර්ගය අනුව වෙන් වෙන් ව සැලකූව ද මෙම රටාව එක සමාන බව පෙනී යයි. පහසුකම් වැඩි 1 ඒබ් පාසල් වල ද තත්ත්වය එය ම ය. සෑම පාසලකම සිසුන් ගේ අන්තර්ජාලයෙන් තොරතුරු ගවේෂණය කිරීමේ හැකියාව අඩු මට්ටමක පවතින බව මින් පැහැදිලි වේ.

2 වර්ගයේ පාසලේ අන්තර්ජාල පහසුකම් නොමැත. එම පහසුකම් ඇති 1 සී වර්ගයේ පාසලේ තත්ත්වය පළමු පාසල් වර්ග දෙකට ද වඩා දුර්වල බව පෙනී යන්නේ එම පාසලේ සිසුන් සියල්ල කාර්ය පත්‍රිකාව සඳහා ලබා ගෙන ඇත්තේ 74 ට වඩා අඩු අගයක් බැවිනි. මෙය ඉතා කණගාටුදායක තත්ත්වයකි. අන්තර්ජාලයෙන් තොරතුරු ගවේෂණය තොරතුරු හා සන්නිවේදන තාක්ෂණය විෂය සඳහා ඇති ප්‍රායෝගික පාඩමක් වශයෙන් අනිවාර්යයෙන් පාසලේ අන්තර්ජාල පහසුකම් තිබිය යුතුය.

මේ අනුව පෙනී යන්නේ පාසල්වල තොරතුරු කුසලතා ඉගැන්වීම එතරම් යහපත් තත්ත්වයක නොපවතින බවකි.

7 යෝජනා

ඉහත කරුණු සලකා බැලීමේ දී පෙනී යන්නේ පාසල්වල තොරතුරු සන්නිවේදන තාක්ෂණය ඉගැන්වීම පිළිබඳව දැනට වඩා අවධානයක් යොමු කළ යුතු බව යි. එහි දී ගුරුවරුන් ගේ දැනුම පිළිබඳව ද, ඉගැන්වීමේ ක්‍රමවේදයන් පිළිබඳව ද සලකා බැලීම අනිවාර්ය වේ. සිසුන් ගේ තොරතුරු කුසලතා හැකියාවන් පිළිබඳව නිරන්තර අවදියෙන් සිටීම තුළින් ද, නිවැරදි ගවේෂණ ක්‍රම සඳහා

යොමු කරවීමෙන් හා මහ පෙන්වීමෙන් ද ඔවුන්ට සහය විය හැකි ය. එසේ ම සිසුන්ට නිදහස් කාල පරිච්ඡේද අතරතුර පවා අන්තර්ජාලය භාවිත කිරීමේ පහසුකම් ලබා දීමට ද කටයුතු කළ හැකි ය.

මූලාශ්‍ර

ගිනිගේ, ඉන්දිරා ලීලාවතී (2006). *ක්‍රියාකාරකම් පාදක ඉගෙනුම*. ශ්‍රී ලංකා ජාතික අධ්‍යාපන සංගමය

ජාතික අධ්‍යාපන කොමිෂම (2003). *කොළඹ: රජයේ ප්‍රකාශන*.

ෆෝරේ, එඩ්ගා සහ තවත් අය (1978). *දිවි පැවැත්ම සඳහා ඉගෙනුම, ලෝක අධ්‍යාපනය වර්තමානය හා අනාගතය*, කොළඹ : අධ්‍යාපන දෙපාර්තමේන්තුව

Delors, J., & others. (1996). Learning, the treasure within. *Report to UNESCO of the international commission on education for the 21st century*. Paris, UNESCO.

Wijetunge, P., & Alahakoon, U. P. (2005). Empowering 8: the Information Literacy model developed in Sri Lanka to underpin changing education paradigms of Sri Lanka. *Sri Lanka Journal of Librarianship & Information Management*, 1(1), 31–41.

A Conceptual Framework for Information Literacy Education in Sri Lankan Universities

R.P.P. Ranaweera

Prasanna_ranaweera@yahoo.com

*National Institute of Library and Information Sciences
University of Colombo*

Keywords: *Information literacy, Conceptual framework,
Information Literacy Best Practices*

Information literacy (IL), has been defined by the American Library Association (ALA, 1989), as the “ability to recognize when information is needed and the ability to locate, evaluate, and use effectively the needed information”. In higher education, the generic skills like critical thinking, problem solving and information literacy have come to play a specific role in the teaching and learning process. Information literacy is an essential part of learning and the foundation of independent and lifelong learning (Bruce, 2002; Lupton, 2004). At the same time, Information literacy is considered as the foundation of independent learning, and the basic rules for learning, i.e. how-to-learn (Bruce, 2002).

Sri Lankan universities are experiencing complex changes in response to institutional, social, political, economic and international development. With the changes introduced to the education system, and the development of university education in Sri Lanka; the learning process is being

transformed from a teacher centered learning to student centered competency based learning. Therefore, emphasis has been given to the development of soft skills including information literacy skills among University students. That is expected to ensure educational excellence in preparing citizens for success, in the twenty-first century.

The Sri Lankan President's vision for the country's development has placed special emphasis on the development of university education in Sri Lanka.

"It is necessary to create a new educational framework that will provide liberal thinking, broad dialogue and opportunities for exploration instead of the present system that confines the undergraduate to lectures, assignments and examinations". (Mahinda Chintana: Vision for the future 2010)

In 2005, The University Grants Commission of Sri Lanka attempted to implement the necessary changes with credit based to the University undergraduate courses. The main objectives of the reforms were to promote higher-order thinking skills, i.e. analysis, problem solving and social skills. Projects and assignments were made compulsory. Therefore it is clear that information literacy programmes should be an integral part of the university curriculum, in order to achieve the level of students who possess higher order thinking skills.

In 2003, the Institute for Information Literacy Best Practices Initiative published an important document (ACRL, 2003) that identifies features of IL programs such as, missions and goals, staff development, collaboration, curricular integration, outreach and assessment. The Best Practices for IL were

developed by professionals including librarians, faculty members, administrators, and members of professional organizations. ACRL has used the Delphi research technique for the study. The ACRL publication states that the Characteristics "present a set of ideas that can be used when establishing, developing, advancing, revitalizing, or assessing an information literacy program.". These features are applicable to Sri Lankan universities as well, with some modification.

The Best Practices are arranged under ten categories as follows: Mission Category, Goals and Objectives Category, Planning Category, Administrative and Institutional Support Category, Articulation with the Curriculum Category, Collaboration Category, Pedagogy Category, Staffing Category, Outreach Category, Assessment/ Evaluation Category.

The first three categories address the areas for creating mission statements, establishing goals and objectives, and planning. The next four explain the need for support from a variety of constituencies on campus, collaboration between faculty, librarians, and other related partners, articulation with the curriculum and pedagogy, and supporting a variety of teaching approaches.

The eighth and ninth categories are related to staffing and outreach activities in order to promote IL. Finally, the guidelines addressing assessment and evaluation of both student learning and IL programs are introduced.

Information Literacy Best Practices Initiatives were not empirically studied in Sri Lanka with the local cultural and

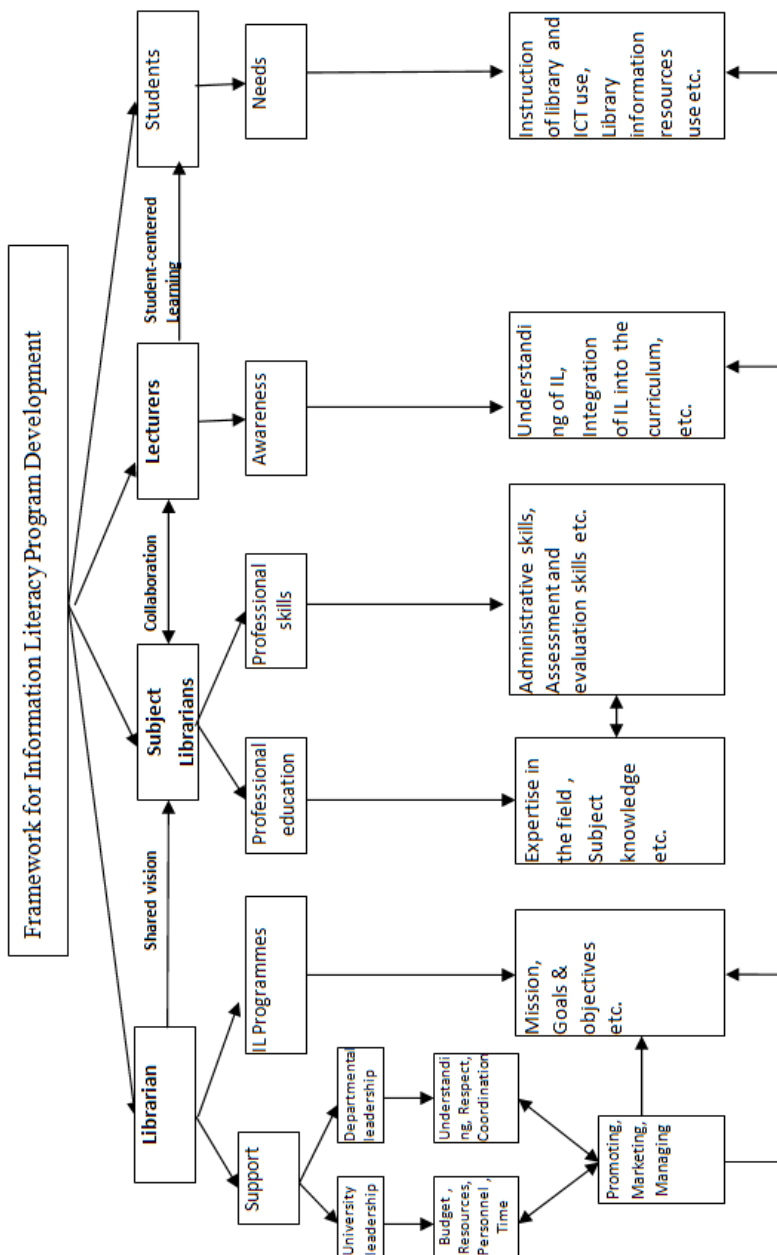


Fig. 1. A Literature-Based Conceptual Framework for Information Literacy Program Development

educational settings. In this study the researcher hopes to formulate a conceptual framework for the Sri Lankan universities with stakeholders conceptions based on Best practices initiatives. The study is planned to carry out under qualitative case study method. Figure 1 elaborates the literature-based framework of Best Practices for the information literacy programmes in Sri Lanka.

References

- American Library Association (ALA). Presidential Committee on Information Literacy. (1989). Final Report. Chicago.
- Association of College and Research Libraries. (2003). *Characteristics of programs of information literacy that illustrate best practices: A guideline*. Chicago: Association of College and Research Libraries, American Library Association. Retrieved from http://www.ala.org/ala/mgrps/divs/acrl/standards/c_harakteristics.cfm
- Bruce, C. (2002), Information Literacy as a Catalyst for Educational Change: A Background Paper, White Paper prepared for UNESCO, the US National Commission on Libraries and Information Science and the National Forum on Information Literacy, for use at the Information Literacy, Meetings of Experts, Prague, The Czech Republic, July 2002,
- Lupton, M. (2004), The Learning Connection. Information Literacy and the Student Experience, Auslib Press, Adelaide.

Mahinda Chintana: Vision for the future 2010. A Brighter
Future.

Presidential Election – 2010. Retrieved from
http://www.motr.gov.lk/web/pdf/mahinda_chintana_vision_for_the_future_eng.pdf

ප්‍රජා තොරතුරු මධ්‍යස්ථානයක් ලෙස මහජන පුස්තකාලයක කාර්ය භාරය

ජේ.ඊ.ඒ.මේසා සෙවිවන්දි ජයසිංහ
athurugiriyapl@gmail.com

අතුරුගිරිය මහජන පුස්තකාලය, කඩුවෙල මහා නගර සභාව,
කඩුවෙල

1 හැඳින්වීම

නවීන ලෝකයේ තොරතුරු අනුබද්ධිත සමාජය ඉතා වේගයෙන් තොරතුරු අනුබද්ධිත ජීවන රටාවක් කරා ගමන් කරමින් සිටී. මේ ගමන් මග නාගරික සහ ග්‍රාමීය යනුවෙන් හෝ ධනවත්-දුගී වශයෙන් හෝ කාර්මිකරණය වූ -නොවූ වශයෙන් හෝ වෙනස් වන බවක් නොපෙනේ. මේ නිසා පොදු සමාජය වෙත ඔවුනට අවශ්‍ය තොරතුරු ලබාදීම රජයේ වගකීමයි. මේ අනුව, සියලුම සමාජ ස්ථරයන් වෙත ප්‍රවිශ්ඨ වීමේ උපාය මාර්ගයක් ලෙස, ප්‍රජා තොරතුරු මධ්‍යස්ථාන සඳහා ලැබෙන්නේ ඉහළ වැදගත්කමකි.

දැනට ශ්‍රී ලංකාවේ මහජන පුස්තකාල ආශ්‍රයේ පිහිටුවා ඇති එක ම ප්‍රජා තොරතුරු මධ්‍යස්ථානය අතුරුගිරිය මහජන පුස්තකාලය මගින් ක්‍රියාත්මක වෙයි. මෙම ලිපිය, එහි ක්‍රියාකාරී සැලැස්ම, ප්‍රජා තොරතුරු අවශ්‍යතා පිළිබඳව කෙරුණු ගවේශනයක ප්‍රතිඵලයකි.

අතුරුගිරිය බල ප්‍රදේශය ඇසුරෙන් කරන ලද ප්‍රාථමික හා මූලික ගවේශනයන්ට අනුව, එහි ලියාපදිංචි ප්‍රජාව විවිධ සමාජ ස්ථරවලට අයත් මෙන්ම විවිධ රැකියාවන්හි නියුතු බවද පෙනේ. අතුරුගිරිය ප්‍රජාව ඇසුරෙන් දියත් කරන ලද ගවේශනයේ තොරතුරුද, ඒ අනුව සැලසුම් කරන ලද ප්‍රජා සේවාවේ අන්තර්ගතය, සහ සැපයු සේවාව පිළිබඳ විශ්ලේෂණයක් කිරීම මෙම ලිපියේ පරමාර්ථය යි.

2 ප්‍රජා තොරතුරු මධ්‍යස්ථාන

කිසියම් පුද්ගලයෙකුට එදිනෙදා ජීවිතයේ කටයුතු වෙනුවෙන් නිවැරදි මගපෙන්වීමක් නිවැරදි තොරතුරු ලබාදීම තුලින් නිවැරදි යොමුගත කිරීමක් සිදුකිරීම ප්‍රජා තොරතුරු මධ්‍යස්ථානයක් වෙතින් සිදුවේ. මෙම කාර්යය සිදු කිරීම සඳහා මෙරට ඇති ප්‍රධානතම මධ්‍යස්ථානය රාජ්‍ය තොරතුරු කේන්ද්‍රය යි¹. ඕනෑම දුරකථනයකින් අංක 1919 අමතා තොරතුරු විමසීමේ පහසුකම ඉන් සලසා ඇත. කෙසේ නමුත්, මෙවැනි පහසුකම්වලින් පවා තමාට අවශ්‍ය තොරතුරු ලබාගැනීමට සාමාන්‍ය ජනතාව තුළ බියක්, තිගැස්මක්, පැකිළීමක් ඇති බව ඇතැම් අවස්ථා වලදී දක්නට ලැබේ. නමුත් තම ප්‍රදේශයේ තමාට හුරුපුරුදු ආයතනයක, එම තොරතුරු ඒකරාශීකර ඇති නම්, එවැනි බාධක මග හැර ගත හැකි වනු ඇත. එනම් තොරතුරු ලබන්නාගේ පුද්ගලිකත්වය, සමාජ තත්වය, අධ්‍යාපනික මට්ටම, රැකියාවේ තත්වය, මේ කිසිම කරුණක් බාධාවක් කර නොගෙන ප්‍රජා තොරතුරු මධ්‍යස්ථානයට පිවිසීමේ අවස්ථාව උදාකිරීම වැදගත්කොට සැලකිය හැකිය (සෙනෙවිරත්න, 2006). එහිදී සමාජ, ආර්ථික, භූගෝලීය බාධක, දේශගුණික බාධක කිසිත් නොතකා පොදුවේ ඕනෑම අයකුට තොරතුරු ලබා ගත හැකි ආයතනයක් ලෙස දැනටමත් ස්ථාපිතව ඇත්තේ මහජන පුස්තකාලය යි.

2.1 අතුරුගිරිය මහජන පුස්තකාලය අනුබද්ධිත ප්‍රජා තොරතුරු මධ්‍යස්ථානය

බස්නාහිර පළාතේ පළාත් පාලන දෙපාර්තමේන්තුව මගින් පළාත් පාලන යෝජනා ක්‍රියාත්මක කිරීමට අදාල, පුස්තකාල සංවර්ධනය කිරීමේ පුස්තකාල කමිටු රැස්වීමේ යෝජනා පරිදි, එක් දිස්ත්‍රික්කයකට එක බැගින් වන සේ, ආදර්ශ ප්‍රජා තොරතුරු මධ්‍යස්ථාන පිහිටුවීමට යෝජනා කරන ලදී. එහි පළමු පියවර ලෙස කොළඹ දිස්ත්‍රික්කයේ පළමු ආදර්ශ ප්‍රජා තොරතුරු මධ්‍යස්ථානය

¹ www.gic.gov.lk

පිහිටුවන ලද්දේ අතුරුගිරිය මහජන පුස්තකාලය ආශ්‍රිතවයි. මෙම පුස්තකාලයේ ස්ථානීය පිහිටීම ද, ග්‍රාමීය ජනතාවට මෙන්ම නාගරික ජනතාවට ද පැමිණීමට ඇති පහසුකම් එයට ප්‍රධාන හේතුවක් විය.

එය 2012 පෙබරවාරි මස සිට සතියේ දිනවල පෙ.ව. 8.30 සිට ප.ව. 4.30 දක්වා මහජනතාව වෙත විවෘතව පවතී.

පුස්තකාලයට පැමිණෙන ඕනෑම අයකුට හැකි උපරිම අයුරින් තොරතුරු ලබාදීම මහජන පුස්තකාලයක අරමුණ වුවත්, ඔවුන්ගේ සාමාන්‍ය එදිනෙදා ජීවිතයට අදාළ තොරතුරු අවශ්‍යතා සියල්ල ඉටුකිරීමට පුස්තකාල එකතුව සමත් නොවේ. එම අඩුව පිරවීම මෙම මධ්‍යස්ථානයේ අරමුණයි.

3 ප්‍රජා තොරතුරු මධ්‍යස්ථානය මගින් සපයන සේවාවන්

මෙහිදී රාජ්‍ය අංශයේ ආයතන, පුද්ගලික ආයතන, විවිධ සංස්ථා, සමිති සමාගම්, රාජ්‍ය නොවන සංවිධාන වෙතින් තොරතුරු එකතුකරගැනීම සිදුකරනු ලැබේ. විවිධ අධ්‍යාපනික පාඨමාලා, ස්වයං රැකියා සඳහා මහපෙන්වීම්, විවිධ සම්මන්ත්‍රණ, දේශන, වැඩමුළු, රැකියාවන් පිළිබඳ විස්තර, ගෙවිය යුතු පාඨමාලා ගාස්තු, පාඨමාලා කාලසීමාව, පාඨමාලා හැදෑරීම අවසානයේ ලබාගතහැකි රැකියාවන් පිළිබඳ මාර්ගෝපදේශකත්වයක් හා නිවැරදි යොමුගත කිරීමක් සිදුකිරීම මූලික අරමුණ වේ. උදාහරණ ලෙස අ.පො.ස. සාමාන්‍ය පෙළ අසමත් සිසුවකුට වෙනත් වෘත්තීය අධ්‍යාපන හෝ වෘත්තීය පුහුණු කරා යොමුවීම සඳහා නිවැරදි මහපෙන්වීමක් කළ හැකි ය.

කඩුවෙල මහා නගර සභාව විසින් සපයන්නාවූ විවිධ සේවාවන් පිළිබඳ තොරතුරු, එම සේවාවන් ලබාගන්නා ආකාරය, සේවා සපයන වේලාවන්, හමුවිය යුතු අදාළ නිලධාරීන්, ඔවුන්ගේ නම් සහ දුරකතන අංක ද ඇතුළත් තොරතුරු ලබාදීම ද ප්‍රජා තොරතුරු මධ්‍යස්ථානයෙන් අපේක්ෂා කෙරේ.

එහිදී කඩුවෙල මහා නගර සභාව විසින් සපයන සේවාවන් පහත දැක්වෙන ආකාරයට වර්ගීකරණය කර ඇත.

- a. අපද්‍රව්‍ය කළමනාකරණය පිළිබඳ තොරතුරු
- b. ක්‍රීඩා පිටි පිළිබඳ තොරතුරු
- c. ශ්‍රවණාගාරය වෙන්කිරීමේ ගාස්තු
- d. ජංගම වෛද්‍ය සායන පිළිබඳ තොරතුරු
- e. විදි ලාම්පු අළුත්වැඩියා කිරීම, පැමිණිලි ඉදිරිපත් කිරීම පිළිබඳ තොරතුරු
- f. තරුණ මධ්‍යස්ථාන පිළිබඳ තොරතුරු
- g. ප්‍රදේශයේ ළදරු පාසැල් පිළිබඳ තොරතුරු
- h. ඉඩම් අනුබද්ධ පිළිබඳ තොරතුරු
- i. බිම් කට්ටි ප්‍රමාණය අනුව අයකරන ගාස්තු
- j. මායිම් තාප්ප ඉදිකිරීම (පෙරසැරි ගාස්තු) පිළිබඳ තොරතුරු
- k. ගොඩනැගිලි ඉදිකිරීම
- l. සේවා ගාස්තු පිළිබඳ තොරතුරු (නේවාසික, වානිජ හා වෙනත්)
- m. අනුකූලතා සහතික ලබා ගැනීම පිළිබඳ තොරතුරු
- n. විවිධ සේවා පිළිබඳ තොරතුරු
- o. ඉඩමක් අනුමතකරගන්නා ආකාරය පිළිබඳ තොරතුරු
- p. කඩකුලී අයකිරීම පිළිබඳ තොරතුරු
- q. අනතුරුදායක ගස් පිළිබඳ තොරතුරු
- r. ගලිබඩුසර සේවාව
- s. ජලය ලබා ගැනීමට මාර්ගය කැඩීම පිළිබඳ තොරතුරු

රාජ්‍ය අංශයේ විවිධ ආයතන, අමාත්‍යාංශ, දෙපාර්තමේන්තු වෙබ් අඩවි තුළින් ලබාගන්නා විවිධ තොරතුරු ද මෙයට ඇතුළත්වේ. එහිදී ජාතික හැඳුනුම්පත ලබාගැනීම, විදේශ ගමන් බලපත්‍රය, උප්පැන්න හා මරණ ලියාපදිංචිය පිළිබඳ තොරතුරු, බලපත්‍ර, වරිපනම්, ආධාර, ණය, විශ්‍රාම වැටුප් යනාදිය පිළිබඳ ජනතාවට නිවැරදි තොරතුරු ලබාදීම මෙහි අරමුණ යි.

කඩුවෙල මහා නගර සභා බල ප්‍රදේශයේ අධ්‍යාපනික ආයතන, පාසැල්, දහම් පාසල්, උපකාරක පංති, උසස් අධ්‍යාපනික ආයතන,

විශ්ව විද්‍යාල, වෘත්තීය පුහුණු ආයතන, දුරස්ථ අධ්‍යාපනය, ශිෂ්‍යාධාර ලබාදීම වැනි තොරතුරු මෙම ප්‍රජා තොරතුරු මධ්‍යස්ථානය තුළින් ලබා දෙයි. එහිදී එම ආයතනයන්හි ලිපිනය, දුරකතන අංකය, ඊ මේල් ලිපිනය, ආයතනය විවෘතව පවතින වෙලාවන් සහ දිනයන්, පාඨමාලා ගාස්තු යනාදී ඕනෑම තොරතුරක් මෙම ප්‍රජා තොරතුරු මධ්‍යස්ථානය තුළින් ලබාගැනීමේ පහසුකම් හා අවස්ථාව සලසා ඇත.

නාගරික සීමාවෙන් තරමක් දුරස්ථ ප්‍රදේශයන්හි ජනතාවට අවශ්‍ය සෞඛ්‍යමය තොරතුරු එනම් සායන පිළිබඳ තොරතුරු, සායන පවත්වන ස්ථාන, ලබාදෙන සේවාවන්, රජයේ රෝහල්, පෞද්ගලික රෝහල්, ජංගම සායන, ආයුර්වේද සායන, විශේෂඥ වෛද්‍යවරුන් පිළිබඳ තොරතුරු එම ආයතන පිහිටි ස්ථාන, දුරකතන අංක, විවෘතව පවතින දිනයන් හා වෙලාවන්, එන්නත් පිළිබඳ තොරතුරු, සනීපාරක්ෂාව පිළිබඳ තොරතුරු, සුවනාරි සායන සහ නොමිලයේ ලබාදෙන සේවාවන්, ප්‍රජනන සෞඛ්‍ය සම්බන්ධ ගැටලු සඳහා විසඳුම් ලබාගතහැකි ආකාරය, විවිධ වසංගත රෝග සඳහා ප්‍රතිකාර ලබාගත හැකි මාර්ග, ඩෙංගු, මී උණ, බරවා, ජලභීතිකාව සඳහා මහජන සෞඛ්‍ය පරීක්ෂකවරුන් විසින් පවත්වන විවිධ වැඩසටහන් හා ප්‍රතිකාර සඳහා නිවැරදි යොමුකිරීම් තුළින් මෙම ප්‍රදේශයේ ප්‍රජා සෞඛ්‍ය යහපත් මට්ටමකට පත්කිරීමද මෙම වැඩසටහන තුළින් ලැබෙන්නාවූ ප්‍රතිලාභයකි.

තවද කෘෂිකර්මාන්තය සිය ජීවනෝපාය වූ ජනතාවට අවශ්‍ය තොරතුරු ද මෙම මධ්‍යස්ථානය තුළින් ලබාදීමට අපේක්ෂා කෙරේ. සුදුසු බෝග, නවීන වැඩිදියුණු කළ බීජවර්ග ලබාගතහැකි කෘෂි මධ්‍යස්ථාන, බෝග මාරුව, කෘමි උවදුරු සහ මර්ධන ක්‍රම, පොහොර භාවිතය, පොහොර සහනාධාර ලබාගන්නා ආකාරය, අස්වනු නෙලා ගන්නා ආකාරය, සාර්ථක ඵලදාවක් සඳහා අවශ්‍ය උපදෙස් ලබාගත හැකි මාර්ග, නවීන කෘෂි උපකරණ භාවිතය පිළිබඳ නිවැරදි උපදෙස් ලබාගන්නා ආකාරය යනාදී වශයෙන් කෘෂිකර්මාන්තයට අවශ්‍ය තොරතුරු එක්රැස් කර අවශ්‍ය පුද්ගලයාට ඕනෑම අවස්ථාවක අතුරුගිරිය මහජන පුස්තකාලය

ආශ්‍රිත ප්‍රජා තොරතුරු මධ්‍යස්ථානයෙන් ලබාගැනීමට අවශ්‍ය පහසුකම් සපයා ඇත.

කෘෂිකාර්මික ණය, දේපල ණය, සමෘද්ධි ණය, කර්මාන්ත ණය, විවිධ ආයෝජන, ඉතිරි කිරීම් යනාදී වශයෙන් විවිධ මූල්‍යමය තොරතුරු ද නීතිමය තොරතුරු ද විදුලිය, දුරකථන පහසුකම්, මහාමාර්ග, ජලය වැනි යටිතල පහසුකම් ලබාගැනීමේදී අවශ්‍ය උපදෙස් හා එම සේවාවන් ලබා දෙන ආයතන පිළිබඳ තොරතුරු ද ඇතුළත් එදිනෙදා ජන ජීවිතයට අත්‍යවශ්‍ය වන්නා වූ තොරතුරු නිවැරදිව ලබාදීම කුලීන් මෙම ප්‍රදේශයේ ජනතාවට සාර්ථක ප්‍රතිඵල අත්කරදීමේ වගකීම ද ප්‍රජා තොරතුරු මධ්‍යස්ථානය කුලීන් ඉටුවන්නාවූ වැදගත් මෙහෙයක් ලෙස සැලකිය හැකිය.

4 ප්‍රජා තොරතුරු පිළිබඳ ඉල්ලුම

‘ප්‍රජා තොරතුරු ඒකකය’ කුලීන් මෙතෙක් ලබාගත් සේවාවන් පිළිබඳ තොරතුරු පහත වගුවේ දැක්වේ.

වගුව 1. 2012 පෙබරවාරි මස සිට අප්‍රේල් දක්වා ප්‍රජා තොරතුරු ඒකකය පරිභරණය කළ පිරිස සහ සපුරා ගත් තොරතුරු අවශ්‍යතා වර්ගය. N=59

තොරතුරු වර්ගය	තොරතුරු ලබාගත් පාඨක සංඛ්‍යාව මුළු සංඛ්‍යාවේ ප්‍රතිශතයක් ලෙස
කඩුවෙල මහා නගර සභාව විසින් සපයන සේවාවන්	52.54
ඉඩම් සහ දේපල පිළිබඳ තොරතුරු	13.55
රාජ්‍ය අංශයේ තොරතුරු	8.48
අධ්‍යාපනික තොරතුරු	8.48
සනීපාරක්ෂක හා සෞඛ්‍ය තොරතුරු	6.77
රැකියා තොරතුරු	5.09

විවිධ කර්මාන්ත පිළිබඳ තොරතුරු	3.39
කෘෂිකාර්මික තොරතුරු	1.70

මෙතෙක් ලබාගත් දත්ත අනුව, කඩුවෙල මහා නගර සභාව විසින් සපයන සේවා පිළිබඳ තොරතුරුවලට ප්‍රදේශයේ ජනතාවගේ වැඩි ඉල්ලුමක් ඇති බව දක්නට ලැබේ. කෘෂිකාර්මික තොරතුරු පිළිබඳ විමසීම මෙතෙක් ඉතාම අවම මට්ටමක පවතී.

අතුරුගිරිය මහජන පුස්තකාලයට පැමිණෙන පාඨකයින් අතර තවමත් මෙම ප්‍රජා තොරතුරු සේවාව පිළිබඳ දැනුවත්භාවය අවම මට්ටමක පවතී. පළමු මාස 03 තුළ දී තොරතුරු ලබාගැනීමට පැමිණි පිරිස පුස්තකාල පාඨකයින් නොවීම සුවිශේෂී තත්වයකි. එසේ ම, කිසියම් තොරතුරක් විමසීමට ‘ප්‍රජා තොරතුරු ඒකකය’ වෙත පැමිණි පසු අදාළ අතිරේක තොරතුරු පිළිබඳව ද විමසීම් සිදු කරන බව නිරීක්ෂණය කර තිබේ.

මෙම ‘ප්‍රජා තොරතුරු ඒකකය’ පිළිබඳ ජනතාව දැනුවත් කිරීම සඳහා කුඩා පත්‍රිකාවක් පුස්තකාල පාඨකයින් අතර බෙදාහැරීමද සිදුකරමින් පවතී.

නිවැරදි යොමුගත කිරීම තුළින් තම අවශ්‍යතාවන්ගෙන් තෘප්තියට පත් වූ තොරතුරු ලබා ගත් පුද්ගලයන් තම ස්තූතිය පවා පළකර ඇත. ඔවුන් එදින පටන් මහජන පුස්තකාලයේ සාමාජිකත්වය ලබාගැනීමට යොමුවීම ද මෙහි සාර්ථකත්වය විදහා දක්වයි.

5 දැනුවත් කිරීමේ වැඩ සටහන්

මෙම සුවිශේෂී සේවාව පිළිබඳව පුස්තකාල සේවක පිරිස හා ප්‍රජාව දැනුවත් කිරීමේ වැදගත්කම ද අප හඳුනා ගෙන ඇත. ඒ අනුව 2011 මාර්තු මස 09 වන දින කඩුවෙල මහා නගර සභාවේ පුස්තකාල කාර්ය මණ්ඩලය මේ පිළිබඳව දැනුවත් කිරීමේ ප්‍රථම වැඩමුළුව ශ්‍රී ලංකා විවෘත විශ්ව විද්‍යාලයේ පුස්තකාලයාධිපතිනී ආචාර්ය වත්මානෙල් සෙනෙවිරත්න මහත්මියගේ ප්‍රධානත්වයෙන්

පැවැත්විණි. එහිදී ප්‍රජා තොරතුරු අවශ්‍යතා ගවේෂණය (Community Needs Survey) පිළිබඳ පුස්තකාල කාර්ය මණ්ඩලය දැනුවත් කිරීමත්, ජනතාවට එම තොරතුරු නිවැරදිව ලබාදෙන ආකාරය පිළිබඳවත් දැනුවත් කිරීම සිදුවිය.

ආශ්‍රිත මූලාශ්‍ර

Senevirathne, W. (2010). *Community Information needs and its behaviour in rural Sri Lanka*. Colombo: National library and documentation Services Board

Investigation on Effectiveness of Applying Essential Oil Fumigation Technology in Libraries as a Pest Control Method

T.C.P.K. Thilakarathne

library@ifs.ac.lk

I. Thumpela

ithumpela2@gmail.com

*Institute of Fundamental Studies, Hantana Road,
Kandy*

1 Introduction

1.1 Background of the study

Preservation and conservation of library books are among the major duties of a librarian. Library materials could be damaged in several ways. The process of decaying and disintegration of the books in a library can be divided into three categories, namely biological, physical and chemical. This study addresses the protection of library materials from pests. Only some types of insects impose damages to archived library materials. They are silverfish, cockroaches, booklice, bookworms and termites. All these insects are classified under the phylum Arthropoda. These insects damage books in various ways. For example biting, laying eggs, building nests to lay eggs, excretion etc. This causes

rapid deterioration of paper discoloration as well as the development and spread of unpleasant smell. Such damages can be considered as biological destruction. Furthermore, the changing of the colors of the books and removal of the print and blurring of letters can be considered as chemical deterioration of books.

Destroying these injurious pests, using chemical fumes and chemicals, such as Thymol fumigation are hazardous to health and are costly. Therefore improving the traditional methods of using raw materials readily available in the country is more important than chemical fumigation methods (Wimalarathne, 1989).

There are two fumigation methods which are presently used to conserve books. They are vacuum fumigation and fumigation in a cabinet. Out of these, fumigation in a cabinet is suggested for this study. For small libraries, a 4 feet high and 2.5 feet long cabinet is suitable.

The genus *Cymbopogon* from Family Poaceae, comprises of about 50 species. *Cymbopogon nardus* is commonly grown in tropical countries. It is common in Sri Lanka and is known as Citronella grass in English and *Pengiri Mana* in Sinhala. This grass is a perennial shrub about 2m tall and the leaves are coarse. This emanates lemony smell. The chemical constituents are mainly aromatic Geraniol, Citronellol, Citronellal. It is reported that this plant has various types of medicinal properties: antibacterial, antifungal, acne control and insect repellency as well as inhibitory action of hyperpigmentation in humans (Ranasinghe et al., 2004).

Cymbopogon nardus, is normally grown by cultivators,

especially in tea cultivations to loosen the soil, nemotodian control and landscaping. The extract is obtained by crushing the plant materials. The fumigation cabinet contains a dish and a heater bulb. The fumigant should be kept on this dish and be allowed to heat gently. Fumes will then be accumulated inside the cabinet.

The extracts are allowed to evaporate under 80°C and the fumes slowly gather in the cabinet. The phylum arthropoda (insects) has special respiratory organs calls tracheas. These tracheas are covered with fumes and they are unable to respire. Organic fumes do not contain oxygen and thus the respiratory system of arthropods gets blocked, resulting a death of insects.

This study is significant because there previous study on use of Citronella oil for fumigation of library books. However, there are instances where citronella has been used for preservation of Ola leave manuscripts.

Keywords: Cymbopogon nardus : Bookworms, insect repellent, antibacterial, antifungal, non-irritable

1.2 Objectives

This study focuses on the following objectives.

- a. Introducing a simple and practical fumigation system to the libraries with no environmental pollution.
- b. Manipulate a low cost method for preservation of library materials changing the conventional fumigation method by utilizing commonly available non-irritable and non-toxic raw materials as

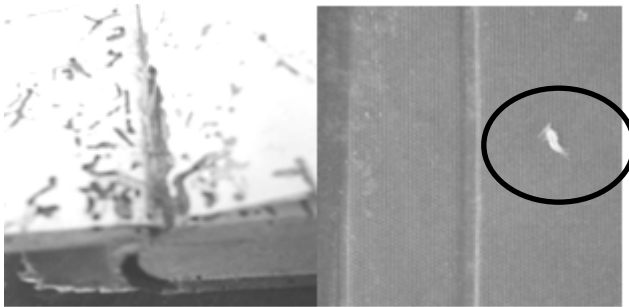
fumigants

- c. Instead of using hazardous chemical like thymol for removing fungi and bacterial growth, has less side effects like allergies, sneezing and rashes in humans can reduce developing of this method.

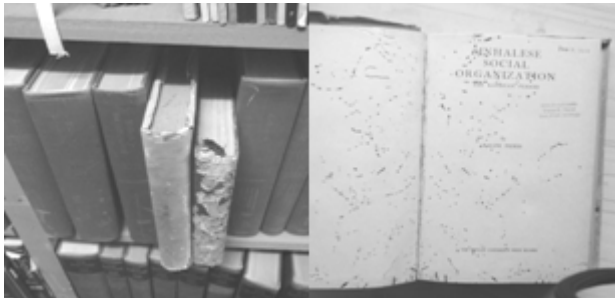
2 Methodology

The main characteristics of the citronella, Ceylon type are lemon citrus smell and the other main constituents are citronellal (32-45%), citronellol (11-15%), Geranyl acetate (3-8%) limonene (1.3-3.9%), elemol and sesquiterpene alcohols (2-5%). (*Cymbopogon nardus* (L.) Rendle.

The studies conducted by the Forest Research Institute Malaysia (FRIM) –Extraction and characterization of essential oils, formulation and product development, medicinal Plant Program, identified as properties of the citronella oil (*Cymbopogon nardus*) conclude those on antibacterial, antifungal control, insect repellency also exhibited inhibitory activity of polyphenol oxidase (tyrosinase) responsible for the hyperpigmentation in humans could be used as naturally occurring inhibitors for this enzyme (Ranasinghe et.al, 2004); (Zaridah et. a., 2003) and investigated that larvicidal properties of essential oils contain in *Cymbopogon nardus*.



Silverfish (See inside the circle)



Cockroaches

White ant

Fig. 1 Example for damaged books found in a library from various insects

According to these investigations it is imaginary, that the essential oils has no effect on papers because main content of plants is cellulose. Also understood this fumigation method does not show any environmental pollution or any hazardous fume releases to the environment. So this is actually environmental friendly proposal.

This study will be performed in the Library at the Institute of Fundamental Studies (IFS) situated in the central province of Sri Lanka. Relative humidity in the premises is high around 70% -90%. This library contains 6080 books including monographs, manuals and theses. Around 15% of the books have been damaged by humidity. The rest is affected by destructive insects, fungi, moulds etc.



Fig. 2 Plant, Leaves and the inflorescence of Citronella (From Hantana Cultivation)

The extract can be used as a dry powder or mixed with an ingredient such as wax or as it is. The base should have a low melting point to support ready fumigation. Experiments should be done on the selection of the fumigant base and the form of the fumigant (solid, powder or cake).

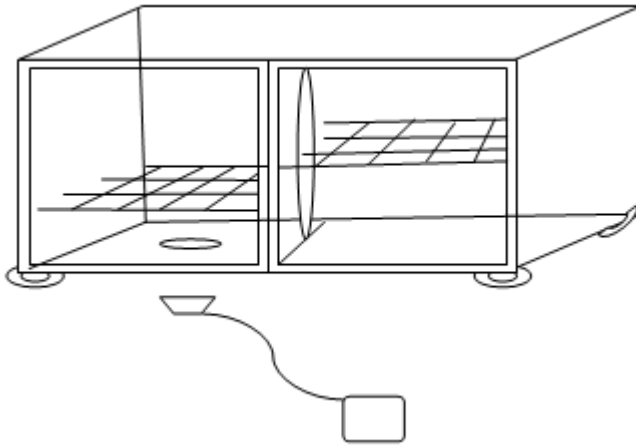


Fig. 3 Model of a fumigation cabinet

Also, the part/s of the plant (root, stem and leaves) with a high percentage of the effective ingredient. In addition, the leaves of books should be checked for individual insect genera before and after fumigation.

Total duration of this proposal project is 2 years.

3 Sustainability

Sustainability of the project heavily depends on the outcome of the investigations. This study will be extended to other destructives such as fungi, viruses and bacteria. It is understood that the quality of paper and quality of printing method will be determining factors in deciding whether the method is applicable. Also, effects on special materials such as oil paintings should be investigated.

This study could also be broadened up to selecting other varieties of anti-repellent plants in Sri Lanka. For example, Khus-Khus Grass (*Vetiveria zizanioides*), Holy Basil (*Osimum sanctum*) could also be used.

4 Impact on Science, Health and Society

- a. Identification of the special volatile oils and their activity on fungi, viruses and bacteria could be beneficial.
- b. These natural chemicals are non toxic to humans. Extracts of this plant is already used in mosquito repellents and cosmetics.
- c. Cultivation of citronella grass will be an income for the farmers.

References

- Barrow, J. W. (1943). Restoration methods. *American Archivist*, 6, 151–154.
- Barry, B. (1983). A simple and practical fumigation system. *Abbey Newsletter*, 7.
- Belankaya, N. G. (1964). *Methods of restoration of books and documents*. Washington D.C.: Office Technical Science, United States Department of Commerce.
- Burkill, I. H. (1966). *A dictionary of the economic products of the Malay Peninsula*, (Vol. 1). University of Agriculture.
- Jaganath, Indu Bala, & Ng, L. T. (1999). *The green pharmacy of Malaysia*. Kuala Lumpur: Malaysian Agricultural Research and Development Institute.

Jayaweera, D. M. A. (1981). *Medicinal plants - Part 3*. Colombo: National Science Council of Sri Lanka.

Nor Azah, M. A., Abu Said, A., Abdull Rashih, A., Mohd. Faridz, Z., & Khozirah, S. (1998). Chemical evolution of the essential oils of *Cymbopogon nardus* from Penicular Malaysia. *Malaysian science and technology congress* (p. 1198). Presented at the Agriculture Biology Marine, Medical and Social Sciences, Kuala Rerengganu.

Mountain Valley Growers (n.d.). Our complete list of certified organic herb plants and perennials..*Mountain Valley Growers: USDA certified organic herbs and perennials*. Retrieved June 14, 2012, from <http://www.mountainvalleygrowers.com/herbplantlist.htm>

Sammy, J., Sugumaran, M., & Lee, K. L. W. (2005). *Herbs of Malaysia*. Berhad: Federal Publication.

White lotus aromatic blog. (2011). Retrieved form Monograph-Citronella (*Cymbopogon nardus*). <http://blog.white-lotus.com/2011/07/monograph-citronella-cymbopogon-nardus.html>.

විමලරත්න. කේ. ඩී. පී., (1989). පුස්තකාල ද්‍රව්‍ය සංරක්ෂණය සහ ප්‍රතිසංස්කරණය, කොළඹ 7: ශ්‍රී ලංකා ජාතික පුස්තකාල සේවා මණ්ඩලය.

Managing Automation in a Multi-Library Environment

S.K. Illangarathne
saman42812@yahoo.com

Main Library, Rajarata University of Sri Lanka, Mihintale

Keywords: *Library Automation, Library Management, Open Source software, Rajarata University of Sri Lanka, Koha, Win-ISIS*

1 Introduction

Today free and open source software (FOSS) has become a better alternative to proprietary software (Free and open source software, 2012). Libraries also have quickly acquired the concept into their information systems. There are multivariate open source software solutions in the market such as Koha, Avanti, Emilda, FireFly and Karuna (Open source software, 2012). Koha is one of the most advanced and cost effective open source library automation solutions and its functionality has been adopted by thousands of libraries world wide (About liblime koha, 2012).

The library system of the Rajarata University of Sri Lanka (RUSL) adopted computer technology to enhance its services since establishment in 1995. At the initial stage the system used CDS/ISIS DOS version to computerize the catalogue (P. Ranasinghe, Personal Communication, April 26, 2012). In 1998 the system could be able to successfully update above CDS/ISIS database using Windows version, WIN-ISIS 1.31 (C.

Dissanayake, Personal Communication, April 26, 2012). In 2007 the Library Management took a strategic decision to automate their information systems under FOSS framework (A. Siriwardhane, Personal Communication, April 26, 2012).

At present the Library System of RUSL is consisted with a Main Library and three other Faculty Libraries (Faculty Library of Agriculture, Faculty library of Applied Sciences, Faculty Library of Medicine). These are located in different geographical areas within the Anuradhapura district (The library system of the Rajarata, 2012).

At present the system provides its services to 4290 undergraduates, 215 academic staff members and 340 other administrative and non academic staff members. The staff of consists of 7 professional members (Librarian, 2 Senior Assistant Librarians, 4 Assistant Librarians), 15 paraprofessional staff members and 15 supportive staff members. The whole system holds about 100,000 books and about 100 journal titles (foreign and local). These resources are available in both print and electronic formats. Services of the library include lending, reference, interlibrary loan, current awareness programs, workshops and library website maintenance. Useful links for online resources are also provided (limited abstracts only) through the library web site (http://www.rjt.ac.lk/maiin_library/main_Lib.html). The system wishes to manage its information system through the newly implemented library automation project (Rajarata University of Sri Lanka, 2011).

2 Methodology

Interviews, secondary sources and observation methods were used to collect data. Tables, Figures and Some screen shots of the applications were used to enhance clarification.

3 Discussion

Table 1: Software & Hardware requirements at the project implementation

Software requirement		
Name of Software	Purpose	Nature of Software
Debian 6.0	System functioning	FOSS
Koha 2.2.8	Application + modules	FOSS
MySQL	Data Base Management	FOSS
PHP Perl	Programming Language	FOSS
Apache	Web Server	FOSS
Firefox Mozilla	Web Browser	FOSS
Hardware requirement		
Name of H/ware	Purpose	Nos.
Local Area Network + Distribution Hub	Get access to the system within university premises	04 LANs + Maximum 25 Access points in each LAN
V-LAN	Get access to the system from other Networks	01 at Main Library
Application Server	Install Applications and DBMS	02 – 01 Main Server + 01 Replication Server

Work stations	Login to the system for staff + OPAC users at the university	15 – Main Lib.,08 – App. Lib. 07 – Agri Lib.,10 – Med. Lib.
UPS	Provide uninterrupted power supply	04 - 2 kva UPS for Main lib + 3 fac. Libraries
POS printer	Print slips at check in-check out terminals	02 – Main Lib, 02 – App. Lib. 02 – Agri Lib.,02 – Med. Lib.
Barcode readers	Smooth functions at check in-check out terminals	02 – Main Lib.,02 – App. Lib. 02 – Agri Lib.,12 – Med. Lib.

Source: Rajarata University of Sri Lanka. (2011), & Personal observations

As shown in table 1, it is noted that software cost was none or minimum due to the use of free and open sources software by the RUSL. The library system of RUSL used a Replication Server System for backing up data.

Table 2: Current progress of the project

Activity	Main Library	App. Sci. Library	Agri. Library	Med. Library
Koha version	2.2.8	2.2.8	2.2.8	2.2.8
The way of Input bib. data into the system	Converted Data from Win-ISIS	Fresh data feeding by lib. Staff - 80% complete d	Converted Data from Win-ISIS	Converted Data from Win-ISIS
Preliminary data	Completed	-	Completed	Completed

editing				
Secondary data editing	80% completed	-	70% completed	Completed
Parameter setting of cataloguing module	Completed.	Complete d.	Completed	Completed
Input member data	Academic staff data completed	-	Academic staff data completed	Academic staff and student data completed
Issuing rules setting of Member Module	Set issuing rules	Set issuing rules	Set issuing rules	Set issuing rules
OPAC function through Local IP	http://10.95.8.200		-	-
OPAC function through Real IP	http://192.248.95.7		http://192.248.94.140	
Using serial Control module	Not in use yet	Not in use ye	Not in use ye	Not in use ye
Using Acquisitions module	Not in use yet	Not in use yet	Not in use yet	Not in use yet
Server Allocation	01 Main Server, 01 Replication Server, 01 WEB OPAC Server		01 Main Server + WEB OPAC Server, 01 Replication Server,	
Backup	Manual + Replication		Manual + Replication	

collecting				
Staff trainings	03 individual workshops have been done			
User awareness programs	01 has done	01 has done	02 has done	02 has done
System installed and consulted by	Senior Assistant Librarian, University of Ruhuna			
System administer ed by	Overall administrated by Assistant Librarian, Main Library			
	Faculty wise administrate d by Assistant Librarian, Faculty Library	Faculty wise administrat ed by Assistant Librarian, Faculty Library	Faculty wise administrat ed by Assistant Librarian, Faculty Library	Faculty wise administrat ed by Assistant Librarian, Faculty Library

Source: Rajarata University of Sri Lanka. (2012), Personal observations. (2012)

5 Conclusion

It is observed that only few modules of the information system are used by the library system (only cataloging module and OPAC module are used by the whole system, & the Circulation module is used only by Medicine faculty library). However, software and hardware requirements have been achieved by the library system. The Faculty of Medicine Library has achieved much of the task while the Faculty of Applied Sciences library is still at the data feeding stage

because bibliographic data of that branch was not available in electronic form. Real time as well as manual backing up is used at the moment. It is shown that server allocation of the system is very high, and merging of two systems [(Main + Applied) and (Agri + Medicine)] could reduce the number.

Training activities for staff is in peak level. However, more user awareness programs have to be conducted.

Because of this project, the library management has gathered a massive amount of experience in library automation from top to bottom level, including data conversion, data editing and parameter setting.

References

About Liblime Koha. (2012). Retrieved April 25, 2012, from <http://www.koha.org/>

Free and open source software. (2012). Retrieved April 25, 2012, from http://en.wikipedia.org/wiki/Free_and_open_source_software

Open source software and we the information professionals. (2012). Retrieved April 25, 2012, from <http://www.slideshare.net/Ashoksatapathy/oss-in-libraries-and-we-information-professional>

Rajarata University of Sri Lanka. (2011). *Hand book of Data Input instructions for Library Automation System*, Main Library, Mihintale, Sri Lanka.

Rajarata University of Sri Lanka. (2011). *Institutional Review report to UGC submitted by the library-RUSL*, Main Library, Mihintale, Sri Lanka.

The library system of the Rajarata. (2012). Retrieved April 25, 2012, from http://www.rjt.ac.lk/maiin_library/main_Lib.html

Lighting the Digital Darkness: Implementation of a University Digital Repository

A.H.K. Balasooriya¹, A.S. Siriwardena² and S.K. Illangarathne²

bala.allmail@gmail.com

¹*The Open University of Sri Lanka ,*

²*Rajarata University of Sri Lanka*

Keywords: *Digital repository, digital document management, Dspace*

1 Introduction

Digital document management which refers to systematic storing, tracking and indexing digital document in a computer, is a challenge to any organization in modern era. Today, many documents are born in digital form. Therefore there is a chance of getting the document being hidden and even getting damaged. For this reason, many organizations tend to keep printed copies of the digital documents and maintain them in conventional archives/repositories. In long term, this is not an effective solution. It involves high amounts of cost, space and labour for maintenance of the physical archive.

Advancement of the Information Communication Technology (ICT) opens new ventures to find solutions for the problematic area of archiving. The solution is called a digital

repository (DR). It is identified as ‘an *electronic system that capture, preserves and provides access to the digital work products of community*’ (Foster and Gibbons, 2005).

The DR project at The Rajarata University of Sri Lank (RUSL) which is a state owned and consists of about 4000 students and 500 staff members population (Rajarata University of Sri Lanka, 2011), is an example for how a library can take leadership in building a university wide digital repository.

2 Planning

The DR project at RJS� consisted of several phases. It included feasibility study, obtaining approval from the university management, and implementing the DR. Presently, the repository can be accessed through <http://repository.rjt.ac.lk>.

The total project duration was around five months of period.

3 Motivation behind the project

Following key motives can be highlighted.

- a. Saves physical space
- b. Supports archiving documents at different levels of their life cycles
- c. There was no central repository for archiving important born digital & digitized documents.
- d. Enables keyword & full text searching
- e. Promotes the concept of ‘Green University’ by reducing use of carbon based materials (Eg: documents and ink).

- f. Uplifts the university rank in Webometric evaluations.
- g. Increases visibility of the university in cyberspace, especially because these articles are indexed by search engines

Following concerns were frequently raised at meetings at advocacy, planning and implementation levels.

- a. Respecting the copyright law
- b. Authority control and security for highly sensitive documents (Eg: Council Minutes)
- c. Responsibility for addition of content
- d. Upgrading and maintenance of the system

4 Collection Building

The following collections were suggested at initial stage of DR implementation.

- a. **Theses:** The collection has a high demand. Postgraduate theses were concerned at the first stage
- b. **Research and scholarly publications:** Every year about 50-100 research publications are produced by the university academics. Most of them were not systemically indexed & organized in a central location.
- c. **Annual reports of RJSL :** The reports enable easy information searching and archiving an original copy
- d. **Past question papers (PQP):** One of the most demanded and enable effective search and archiving values of the materials

5 Finance & Budgetary Constraints

To overcome constraints, following guidelines were set;

- a. System be implemented on available hardware/other infrastructure in the university
- b. DR management software must be Free and Open Source (FOSS)
- c. Technical support easily available locally
- d. Project to be implemented in stage wise approach (Research Publications, Theses, Annual reports etc.).

6 Software Selection

The software selection is the most challenging task especially if FOSS is the choice, because there are many such applications available (Organ, 2007).

GreenStone ([www,greenstone.org](http://www.greenstone.org)) and DSpace (www.dspace.org) are the most popular DR management software in the world FOSS market. DSpace was selected over Greenstone, mainly because of the following factors.

- a. Some other leading universities and institutions in the country use DSpace as their DR (Eg: Open University of Sri Lanka, University of Colombo, University of Peradeniya, University of Moratuwa and the National Science Foundation (NSF).
- b. Technical help and supports locally available
- c. Being a web based solution, easy to manage even from a remote location.

Dspace sources state that there are more than 1000 institutes using the software (Dspace, 2012). Therefore it has a large & strong community around the world.

7 DR Installation

Dspace installation it a complex process and many discussion forums dedicated for the software have raised this matter. The RUSL sought external assistance to install, configure and customise. Dspace Version 7.2 was installed on a Server and it CentOS, a Linux variants is used as Operating system.

8 Customization

The customization is the biggest challenge in Open Source Software. After installation of Dspace, the front-end and configuration files were customised to suit the university requirement and also different collections were created for faculties and departments. All collections are made available to public without a restriction.

Security of system and database were ensured.

9 Staff Training

All staff members from data entry operators to librarians were trained to handle the DR. All level of staff members were easily grab the basic operation of DL and took confidence in a day. After training the system was allowed to staff members to play around and test their own. Method was very success and most of are confident with DL.

10 Challenges

The DR project itself was a challenge to the university, because of its salient features and the amount of decision making associated. Lack of pre-defined policies related to the matters arisen was major drawback. Written documents have to be prepared at National level regarding copyright and digitisation concerns. A proper disaster recovery plan of the DR is essential to keep the system up and running. It could also improve users' trust and system's reliability.

11 Conclusion

The setting up a digital repository is a challenge to an organization because it demands skills and resources. Dspace is more user-friendly in front-end management but installation and customization are difficult so it demands high level of ICT skilled labour in the initiation stage.

Lack of support of digital archiving policy and concern in the university is a barrier for maintenance of the digital archive. Librarians' role in the digital archiving is important and their responsibility of achieving cannot be ignored in an organization.

References

Annual report of Rajarata University of Sri Lanka. (2011).
Mihinthale: Rajarata University of Sri Lanka. pp. 2-6.

DSpace. (2012). Retrieved from <http://dspace.org>

Foster, N.F., & Gibbons, S. (2005). Understanding faculty to content recruitment for institutional repositories. *D-Lib Magazine*, 11(1).

Organ, M. (2007). Outsourcing open access, OCLC systems and Services. *International Software digital Library perspectives*, 23(4), 353-362.

Poster Papers

(Abstracts)

Enhancement of the Library System Through Seeping Technology into Library Services

W. M. Thusithakumari
thusithak@wyb.ac.lk

Library, Wayamba University of Sri Lanka, Kuliypitiya

Keyword(s): *university library, library services, innovative practices*

1 Introduction

The Wayamba University of Sri Lanka was established on 01st October 1999 under the section of the Universities Act No. 16 of 1978. (Sri Lanka Universities year book 1999/2000). It is the 13th University of the National University system of the country.

Wayamba University has four (4) faculties in two premises, Kuliypitiya & Makandura. Faculties of Applied Sciences and Management Studies & Finance functions at the main University premises at Kuliypitiya. Faculties of Agriculture, Plantation Management & Livestock, and Fisheries & Nutrition are at Makandura.

The Library of Wayamba University consists of the main library at Kuliypitiya and the branch library at Makandura. These libraries serve the respective faculties in those premises.

2.2 Branch library at Makandura

2.2.1 Collection

The library collection is growing steadily including both in the form of conventional and non-conventional materials. As of 31st December 2011 the collection of books was 16973.

Following e-resources are also available.

a. Databases (Emerald)	01
b. Floppy, CD, DVD etc.	450
c. In-plant training reports	575
d. Maps	126

2.2.2 User community

The University academic staff, research scholars, undergraduate students, postgraduate students, administrative and non-academic staff of the University are the regular members of the library. There are about 800 regular members of the library. Besides there are a number of visitors, (including researchers, postgraduate students of other universities etc.) who are not registered members. But they are encouraged to avail themselves of the library facilities.

2.2.3 Library staff

The present staff positions of the branch library are as follows;

a. Senior Assistant Librarian	01
b. Library Assistant	04

c. Library Attendants	04
d. Laborers	01
Total	10

2.3 Automation status

The Wayamba University library system initiated its automation process in 2005. The online catalogue is being completed using a variant of Koha Open Source Software.

Present automation status of the library is as follows;

- a. Feeding old records to the data base.
- b. Updating the Database with new additions
- c. Installing Bar Code system for circulation (In progress)

3 Branch library services

Library services are made available from 8.00 a.m. to 6.00 p.m. on all working days during the normal semester. During study leave and examination periods, the library opening hours are extended from 8.00 a.m. to 8.00 p.m. on week days and from 8.00 a.m. to 4.30 p.m. on Saturdays.

3.1 Information services

Currently, many information services are being provided for the users of the Makandura branch library, Wayamba University of Sri Lanka. Here are some of the services related to ICT.

- a. Easy access to the e- information resources.
- b. Easy document delivery (e- journals articles)
- c. Assistance from the professionals to the e- resources made available through Information Networks. (AGRNET, SLSTINET etc.)
- d. User education.

5 Conclusion

When introducing the new innovative practices, the form of the delivery of library services really changed. Therefore it can be concluded that seeping technology into libraries really enhance the library system as a whole.

References

Prospectus, Wayamba University of Sri Lanka 1998-2001.

ආසියාවේ දැනුම් කේන්ද්‍රස්ථානය කරා යන ගමනේ දී පුස්තකාලයෙන් ලැබෙන දායකත්වය

එම්.ඩී. ආර් කුමුදිනි
renu_dil_ku@yahoo.com

ප්‍රලේඛන හා තොරතුරු සේවා අංශය,
ශ්‍රී ලංකා ප්‍රමිති ආයතනය

බීජ පද- තොරතුරු තාක්ෂණය, සමාජ හා ආර්ථික සංවර්ධනය,
තොරතුරු සේවාවන්, පුස්තකාල සේවාවන්. පාඨක අවශ්‍යතා,
පාඨක සේවා

1 හැඳින්වීම

තාක්ෂණික ලෝකයේ විප්ලවයක් ඇති කරමින්, තොරතුරු සන්නිවේදන තාක්ෂණය ලොවට බිහි වී ඇත. ප්‍රබල සන්නිවේදන රටාවක පුරුක් වන වත්මන් පාඨකයන් වෙත සෑම මොහොතක් පාසාම අති විශාල තොරතුරු සම්භාරයක් ශීඝ්‍ර ව ගලා එයි. වර්තමාන ලෝකයේ දියුණුව පිටුපස සිටින අසම සම අධ්‍යාපනික ආයතනයක් වශයෙන් පුස්තකාල සහ විඥාපන මධ්‍යස්ථාන අද තොරතුරු ධාන්‍යාගාර බවට පත් වී තිබේ.

පුස්තකාලයක් යනු එක් විට භූමිකා රැසක් රභ පානා ආයතනයකි. එය විටෙක පොත් පත්, සඟරා, ආදි මුද්‍රිත මෙන්ම ශ්‍රව්‍ය දෘශ්‍ය මාධ්‍ය කියවීමේ සහ දැනුම වර්ධනය කිරීමේ අධ්‍යාපනික ආයතනයකි. තවත් විටෙක තොරතුරු ජාල, සම්මන්ත්‍රණ, පාඨක සමාජ, සාකච්චා, ජංගම සේවා පවත්වමින් තොරතුරු සහ විඥාපන මධ්‍යස්ථානයක් ලෙසද,

එක් එක් පුද්ගලයන් අතර දැනුම හා තොරතුරු හුවමාරු කරගන්නා අදහස් හා දැනුම සම්ප්‍රේෂනය කරන සන්නිවේදන ආයතනයක් ලෙසද, විවිධ ප්‍රසංග සාකච්චා ආදිය පවත්වමින් සංස්කෘතික ආයතනයක් ලෙසද විවිධාකාර වගකීම් කරට ගනියි.

2 පරමාර්ථ

ශ්‍රී ලංකාව ආශ්චර්යමත් රටක් බවට පත් කිරීමේ ක්‍රියාවලියේ දී, පුස්තකාලයෙන් සහ පුස්තකාලයාධිපතින්ගේ සහයෝගය කෙසේ ලබා දිය යුතු ද යන්න සලකා බැලීම මෙම අධ්‍යයනයේ ප්‍රධාන පරමාර්ථය යි.

3 පුස්තකාලයේ කාර්ය භාරය

ආර්ථික, සමාජයීය, අධ්‍යාපනික, සංස්කෘතික මෙන්ම දේශපාලන වශයෙන් පොහොසත්, දැනුම් සමාජයක් බිහි කිරීමෙහි ලා පුස්තකාල වෙත ඇත්තේ වැදගත් කාර්ය භාරයකි. මෙහි දී පුස්තකාලයාධිපතිවරුන් සෑම විට සමාජයේ අවශ්‍යතාවයන් සහ ප්‍රවණතාවයන් මොනවාදැයි හොඳින් අවබෝධ කරගෙන කටයුතු කළ යුතු ය.

ශ්‍රී ලංකාව, ආසියාතික තොරතුරු සන්නිවේදන ජාලයෙහි කලාපීය මධ්‍යස්ථානය ලෙස පත් කිරීම ද ආසියාවේ දැනුම සැපයීමේ කේන්ද්‍රස්ථානය ශ්‍රී ලංකාව තුළ බිහි කිරීම ද රජයේ බලාපොරොත්තුව යි (විදුලි සංදේශ හා තොරතුරු අමාත්‍යාංශය). මෙහි ප්‍රධාන පරමාර්ථය මුළු මහත් ආසියාව තුළ ඉහල සාක්ෂරතාවයකින් හා කුසලතාවයකින් පිරි දැනුමෙන් පරිපූර්ණ වූ මානව සම්පත් සමාජයට උරුම කිරීමට පූර්ණ සහයෝගය ලබා දීමටය. දැනට ඇති තොරතුරු තාක්ෂණ සාක්ෂරතාවය 20% සිට 60% දක්වා ඉහල දැමීමට

අවශ්‍ය පියවර ගනිමින් පවතී (ලෝක බැංකු වාර්තා). මේ සඳහා පුස්තකාලයේ දායකත්වය අත්‍යවශ්‍ය වේ.

ආවේණික වූත් සුවිශේෂ වූත් සේවාවන් අනුව ප්‍රධාන වශයෙන් මහජන පුස්තකාල, විශ්ව විද්‍යාල පුස්තකාල, විශේෂ පුස්තකාල, අධ්‍යාපනික පුස්තකාල හා රාජ්‍ය ආයතන පුස්තකාල වශයෙන් පුස්තකාල විවිධත්වයක් ගනී. මව් ආයතනයේ, රජයේ හා ජනතාව ගේ සුවිශේෂී අරමුණු හා සමාජ ප්‍රවණතා මගින් පුස්තකාල මෙහෙයවනු ලබයි. උදාහරණ වශයෙන්, යුධමය තත්වය නිමාවෙද්දී වර්තමාන ශ්‍රී ලංකාවේ දේශීය සහ විදේශීය ආයෝජකයන්ගේ පිබිදීමක් දක්නට ලැබේ. එනම් අප රටේ ආයෝජන කෙෂත්‍රයේ වර්ධනයක් ඇත. මේ සඳහා පුස්තකාලයකට දායක විය හැක්කේ, එම ආයෝජන කලාප තුළ ඊට අදාළ පුස්තකාල සේවාවන් සහ අවශ්‍ය තොරතුරු, වාර්තා, ලිපි ලේඛන අවශ්‍යතා පරිදි සපයා දීමෙනි.

4 යෝජනා

දැයෙහි සංවර්ධනයට සමගාමීව පුස්තකාලය තුළ ද සංවර්ධනයක් හා නවීකරණයක් සිදු විය යුතු ය. පුස්තකාලයේ අනාගත පැවැත්ම උදෙසා උපාය මාර්ගික සැලසුම් හා ප්‍රතිපත්ති කාලයානුරූපව වෙනස් කළ යුතුය. වෙනස් වන පරිසරයක් තුළ පාඨක අවශ්‍යතා හඳුනාගෙන ඒ අනුව දිගු කාලීන සැලසුම් සකස් කළ යුතුය. එයට දායක වන සියලු පාර්ශවයන්ගේ දැනුම වර්ධනය කර ගැනීමට අවශ්‍ය තොරතුරු, සම්පත්, ආදිය නිසි අකාරයට ලබා දීමෙන් ඊට දායක විය හැකි ය.

දැයෙහි සංවර්ධනය කරා යන ගමනේ දී ප්‍රතිපත්තිමය තීරණ ද වැදගත් තැනක් ගනී. කලාපීය වශයෙන් එක් එක් විෂයයන් සම්බන්ධ තොරතුරු ජාල ස්ථාපිත කිරීම, දත්ත බැංකු, දත්ත ගබඩා ආදිය පිහිටු වීම, තොරතුරු මධ්‍යස්ථාන හෝ පුස්තකාල සම්පත් හුවමාරු කරගැනීමට අවකාශ සැලසීම ආදිය මේ යටතට ගැනේ. මේ අනුව රාජ්‍ය අනුග්‍රහයත්, හිතකාමී ප්‍රතිපත්ති ක්‍රියාත්මක කිරීමත්, පුස්තකාල නිලධාරීන් ඇතුළු සමස්ත ක්‍රියාකාරීත්වයේ උපරිම සහයෝගයත් තුළින් ආසියාවේ දැනුම් කේන්ද්‍රස්ථානය බවට ශ්‍රී ලංකාව පත් කිරීමේ හැකියාව ඇත.

මූලාශ්‍ර

ජනතාව, කොළඹ, මහජන පුස්තකාලය, 1975

තොරතුරු තාක්ෂණ ආයතනය, නැණසල ලෝක බැංකු
වාර්තාව, කොළඹ, නොවැම්බර් 2007

ලංකාගේ, ජයසිරි, ශ්‍රී ලංකා පුස්තකාල සංගමය, පුස්තකාල හා
විදුලි සංදේශ හා තොරතුරු අමාත්‍යාංශය.
<http://www.ictmin.gov.lk>

වීරසිංහ, එස්.කේ.එම්.එච්. පුස්තකාල වර්ධනය තුළින් සමාජ
සංවර්ධනය. 1993

Department of National Planning. 2010. Mahinda Chinthana:
Vision for the Future. Colombo.
<http://www.treasury.gov.lk/publications/mahindaChintanaVision-2010full-eng.pdf>. Visited 01.05.2012.

Hall, H N , Library and Society, Bangalore Social Science
forum, Bangalore, April 2009

Information & Communication Technology Agency; Nenasala
outcome Evaluation final report, Colombo – October
2010

World Bank Reports. Sri Lanka's Information Infrastructure.
[http://siteresources.worldbank.org/SOUTHASIAEXT/
Resources/223546-1206318727118/4808502-
1206318753312/slknowledgechapter3.pdf](http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/223546-1206318727118/4808502-1206318753312/slknowledgechapter3.pdf) Visited
01.05.2012.

Public Access to ICT

Mohammed Sajeer
sajeer241@gmail.com

7A/1 Lake Road, Sammanthurai

Keywords: *ICT tools, OPAC, public access*

Introduction

We are experiencing a growing international and social crisis due to inequities between nations in accessing and using Information and Communication Technologies (ICTs). The common term for this phenomenon is the digital divide, a concept describing the division of the world into people who have access and the capability to use Information Technology (IT) and people who do not. The world's decision makers and experts are working to close this technological gap through growth in computer-based systems implementation and training while research has been carried out in Higher Education (HE) on both the use of ICT and information literacy, little research has been carried out in Further Education (FE).

Communities need access to the benefits and services only found online but the ICT infrastructure is often prohibitively expensive for individuals to buy for themselves. Mobile phones, while ubiquitous, do not provide for any meaningful depth of information acquisition. In contrast, adding ICT to the library has a great potential in community development.

Author Index

Name	Affiliation	#
Alwis, K.A.M.	Teacher Librarian, Mahamathya Vidyalyaya, Athurugiriya	09
Anandatissa, R.D.	Senior Assistant Librarian, Gampaha Wickramarachchi Ayurveda Institute University of Kelaniya	02
Attanayake, Geethani	Senior Assistant Librarian, Postgraduate Institute of Pali and Buddhist Studies University of Kelaniya	01
Balasooriya, Harsha	Assistant Librarian, Open University of Sri Lanka	13
Dambawinna, K.P.K.	Senior Assistant Librarian, Faculty of Allied Health Sciences, University of Peradeniya	04
Gamage, Ruwan	Senior Lecturer, National Institute of Library & Information Sciences (NILIS), University of Colombo	06
Illangarathne, S.K.	Assistant Librarian, Main Library, Rajarata University of Sri Lanka	12
Jayasinghe, J.E.A. Sevewandi	Librarian, Athurugiriya Public Library	10
Kiriella, Anura	Assistant Librarian, Library University of Moratuwa	03
M.D.R. Kumudini	Documentation and Information Division, Sri Lanka Standards Institute	15

Ramanan, T.	Senior Assistant Librarian (Technical & Clients Services), Library, Eastern University of Sri Lanka	05
<u>Ranasinghe, Tharanga</u>	Assistant Librarian, University of Kelaniya.	07
<u>Ranaweera, Prasanna</u>	Senior Lecturer, National Institute of Library & Information Sciences (NILIS), University of Colombo	08
Ravikumar, M.N.	Senior Assistant Librarian (E- Resources & Services), Main Library, Eastern University of Sri Lanka	05
Sajeer, Mohammed	-	16
<u>Siriwardene, A.S.</u>	Librarian, Rajarata University of Sri Lanka	13
<u>Thilakarathne, T.C.P.</u>	Librarian, Institute of Fundamental Studies, Kandy	11
<u>Thumpela, I.</u>	Senior Staff Technical Officer, Institute of Fundamental Studies	11
<u>Thusithakumari, W.M.</u>	Senior Assistant Librarian, Library, Wayamba University of Sri Lanka, Kuliyaipitiya	14
<u>Wijewickrema, P. K. C. M.</u>	Assistant Librarian, Library, Sabaragamuwa University of Sri Lanka	06

This publication was
sponsored by

