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Chamani Gunasekera
University of Peradeniya, Srilanka, chamanig@yahoo.com

R. Balasubramani
lisbala@gmail.com

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Dr. Chamani Gunasekera
Senior Assistant Librarian
University of Peradeniya
Peradeniya, Sri Lanka
chamanig@yahoo.com

and

Dr. R. Balasubramani
Associate Professor
Department of Library and Information Science
Bharathidasan University
Tiruchirappalli, India
lisbala@gmail.com

ABSTRACT

This study examines information resource usage and information literacy skills of school teachers in Sri Lanka. The study population was in-service graduate school teachers who work in government schools in the country. Multistage cluster sampling method was used to select the study sample. The study adopted a quantitative research methodology, and a self-administered survey questionnaire was distributed among 3200 teachers, and collected data were analyzed using SPSS (21.0). The results gave an insight that school teachers in Sri Lanka used a wide array of sources of information to fulfill their professional information needs. The results revealed that teachers have specific information literacy skills, which are imperative for the effective use of information resources.

Keywords: Information Literacy, Information Resources, Resource Usage, School Teachers, Sri Lanka

1. Introduction

In general, professionals seek information from various sources for acquiring particular knowledge for performing their roles and responsibilities in a standard manner. As professionals, school teachers may use different types of information sources to perform their professional duties effectively. Information sources can be defined as the physical (or digital) items in a variety of media providing potential information[1]. These resources encompass the learning resources and relevant teaching materials that are available both in print and electronic format.[2]

Information literacy (IL) is a fundamental skill that needs for lifelong learning, and particularly the teachers who are imparting knowledge to students are required that skill to influence their students in their endeavors to become lifelong learners. According to American Library Association[3] Information Literacy is a set of abilities: "to be information literate, a person must be able to recognize when information is needed and can locate, evaluate, and use the needed

information effectively". According to the definition, an information literate person can find, assess, and use information effectively than others, and others can learn from them.[4] Information literacy encompasses the strategies, skills, and knowledge needed to define information needs and to locate, evaluate, synthesize, organize, present and/or communicate information as required.[5,6,7]

The cognizance of information literacy would be an advantage for the understanding of information-seeking behaviour such as the use of resources as information-seeking behavior and information literacy are two sides of the same coin. Information Seeking Behavior (ISB) is the process followed when seeking information while IL is the skill that developed the information-seeking process effectively.[8]

Therefore there is a need for studying information resource usage of school teachers by linking information literacy to understand the factors influencing the information seeking process. Kuhlthau[9] emphasized the importance of this type of study: "innovative approaches to the interaction between people and information are needed to bridge the divide between information behaviour, information literacy, and impact of information to address the issues of the twenty-first century". These studies help policymakers and information professionals to design and develop smarter tools that can incorporate and make use of knowledge of ISB to behave more intelligently and provide more effective support for the teachers who use them in pursuit of fulfilling their information needs. [10]

Moreover, it was identified from the literature that no studies have yet been carried out to explore the information resource usage and information literacy skills of Sri Lankan school teachers and this study will be filled this existing knowledge gap by providing an original contribution to the existing body of knowledge. Therefore, the study was designed to examine teachers' use of resources and their information literacy skills which are paramount for effective information provision for school teachers.

2. Research Objectives & Questions

The main objective of this study is to examine information resource usage and information literacy skills of school teachers. The study aims to address the following research questions:

1. What is the preference and frequency of use of information sources by the teachers?
2. What are the criteria used by the teachers when selecting information sources?
3. What are the information literacy skills do school teachers possess?

3. Review of Related Literature on Information Literacy Skills of School Teachers

In the literature, it was found many research studies that carried out on school teachers' information resource usage, but very few exist on their information literacy skills. School teachers use different types of information sources to fulfill their information needs which are imperative for effectively performing duties as professionals. Although Uwaifo and Eiriemiokhale[11] found that teachers acquire various advantages by using the electronic information resources but Tanni[12] affirmed that school teachers use both print and electronic information formats to obtain information that is required for their teaching. In contrast,

Attafuah[13] established that printed books and other monographs are the primary sources of information used by the teachers to meet their information needs. Consistent with the above studies Nwokedi and Adah[14] observed that school teachers widely use students' textbooks and magazines and other subject-related textbooks if the information contains in the prescribed textbooks are not sufficient, or the content of the textbooks are false or not acceptable. By affirming the above findings, Mundt[15] said that teachers use diverse information sources such as curriculum materials, colleagues, workshops, seminars, and meeting notes to acquire knowledge that needs for teaching purposes. In the same vein, Merchant and Hepworth[16] observed that print sources, particularly, would help to reinforce a foundation for the topic, enhance subject knowledge to be taught, or for authentic information. Moreover, they established that school teachers use the internet, scholarly journals, magazines, and mass media to get current and extra information that is not contained in prescribed textbooks. By confirming the said findings, Conroy[17] said that school teachers seek information from various sources, and the internet, CD-ROMs, Videos, and the mass media are the topmost sources preferred by them.

Although there was an abundance of studies about the importance of information literacy for education in the literature, a few research-based studies exist that address the perceptions of school teachers of their information literacy skills. The most influential model proposed by Eisenberg and Berkovitz[18] has six skills on the problem-solving process which include task definition; information-seeking strategies, location, and access, use of information, synthesis, evaporation, etc. should be strictly observed and noted to form a stronghold in information literacy and skills. Supporting this view, Olen[19] pointed out that teachers should be role models for their pupils about information literacy. Still emphasizing that Olen[20] opined that teachers need to be competent, confident, reliant, and proactive to handle issues of abilities and disabilities effectively. All of these could be achieved when they are well informed.

Modern definitions of information literacy stress not only the importance of skills to find and use information, but also the importance of intrinsic knowledge of information sources and media. The ease or difficulty of access to a range of sources, appropriate to purpose, is a factor that influences information-seeking behaviour[21] and it is, in turn, influenced by relative confidence in seeking out and using information. An understanding of teachers' views and preferences concerning access to sources of information was an essential aspect of understanding their confidence as information users. Williams and Cole[22] conducted a study to examine school teachers' information usage by paying attention to their information literacy skills, particularly the applied strategies and confidence of particular abilities that are relevant to information literacy. Information strategies and confidence were explored through questions which asked teachers to reflect on their use of a range of formal and informal information sources, and their confidence in various aspects of finding, evaluating, and using information.

On the other hand, Fourie[23] proposed that studying the information needs and information-seeking behaviour of a specific target group is the first step in planning information literacy and authorizes programs, and recommended that ongoing research needs to learn more about specific user groups. Loeber and Cristea[24] endorsed examining why users are seeking information to improve the design of information systems. Best[25] researched to explore the information literacy of teachers, and it found the lack of confidence and ability to find and use the information within their professional life[26] (Best et al., 1990), which were still apparent some years later[27]. Since

those studies in the 1990s, the increased presence of the internet in schools and homes has raised the potential for greater access to information for teachers as well as students.[28] In the same vein, Idiodi[29] found that the perception of information literacy skills and the challenges of information literacy acquisition in develop information from any format. Therefore teachers must be learned about how knowledge is structured and organized by librarians to teach for students.

Williams and Coles[30] indicated that most of the teachers depend on the resources of information that readily available in schools such as colleagues, practical events, newspaper and reports. Perrault[31] stated that teachers use their personal notes, handouts, audio-visual materials and previous tests papers for lesson planning which are readily available at schools.

It is evident from the literature that some research studies recommended including internet searching as the central of IL because of a wide array of sources of information freely available on the internet. Fourie and Krauss[32] outlined a specific initiative to take place with IL skills for the teachers. It was further established that teachers in the developing countries obtained IL knowledge and ICT skills through personal efforts, i.e., training programs conducted outside the schools. Because of that, Yusuf and Balogun[33] found that the training provided by the schools for teachers does not meet the need to integrate IL skills into their teaching. This brings out the necessity of advanced IL skill courses and ICT training for the school teachers. It further emphasized that schools and universities in developing countries should improve their IL skills and ICT techniques according to UNESCO guidance.[34] Therefore it is crucial for studying information resource usage and IL skills of school teachers in developing countries like Sri Lanka as it would provide necessary information for policymakers in planning programs for effective use of information for teaching purposes..

4. Methodology and Procedure for Data Collection

The study population was in-service graduate school teachers who work in government schools in Sri Lanka. It was decided to use the multistage cluster sampling method as a sampling technique because the elements of the study population i.e. graduate school teachers are spread over a wide geographical area in the country. The total population of graduate school teachers who work in government schools in Sri Lanka is 106,756.[35]

In the first stage, out of nine provinces in the country, four provinces such as Central, Western, Southern, and Eastern, are selected randomly. In the next stage, one district from each province is selected, as such the four districts, namely Colombo, Kandy, Galle, and Ampara, which has the highest number of graduate teachers, were chosen from the four provinces. In the next stage, 105 schools that have more than a hundred teachers of the four districts were selected randomly to administer the questionnaire, which was the primary data collection tool for the study. By using a formula, it was calculated the sample size for each district proportionately based on the graduate teacher population of the district. Accordingly, a self-administered survey questionnaire which was specifically designed to collect the required information from the respondents was distributed among 3200 teachers. The data collection was carried out from September 2018 to January 2019, and collected data were analyzed by using SPSS (21.0).

5. Results and Discussion

5.1 Demographic characteristics of the respondents

A self-administered questionnaire was distributed among the selected sample i.e. 3200 teachers, and 2236 returned, and this gives a response rate of 69.87%. The results found that the majority of the respondents (72 %) were female and male, comprised only 28%. Regarding the age, more than half of the respondents belong to the 31-40 year age category while 24% belong to the 41-50 age category and 19.5% belong to the 20-30 age category. Only 5.9% were more than 50 years of age. It is further evident from the results; more than one-third (37%) of the respondents reported having been teaching profession for 1-5 years, and 35% had more than ten years experience as teachers. Teachers who had been in the profession for 6-10 years made up 22.7% of the sample and only 59 respondents reported that they have been working in the profession for less than one year. About the area of schools located, nearly one-third indicated that their schools are situated in rural areas followed by 32% in the suburbs and 31% in a central city. The schools where the respondents teach were located thus reasonably representative of the town area as well as rural areas.

5.2. Information Sources Used by School Teachers

The first research question of the study is: What is the preference and frequency of use of information sources by the teachers? To examine the information sources used by teachers, eight information sources were identified based on the previous research studies conducted in the same context. The eight items identified as information sources were tested for their reliability, and Cronbach's alpha value was 0.614 for all sources of information.

The study adopted the Total Information Score (TIS) proposed by Demiryurek[36] in a survey carried out in the agriculture sector, which is a variable that combines the frequency of use of information sources and their usefulness. Hence, the TIS reflects not only the quantity but also the quality of information resource usage. Accordingly, the teachers were presented with the 8 sources of information and were asked to rate each source of information in terms of 'frequency of use' and 'degree of usefulness' on the five-point Likert scale (0-4).

The information score for a given information source was calculated by multiplying the score obtained for the frequency of use and the degree of usefulness. Then, the TIS for each information source was computed by aggregating the respective information scores of all respondent teachers. Accordingly, the calculated TISs of the information sources ranged from 0 to 35,776. To make the comparison and expression meaningful, the Standardized Total Information Scores (STIS) were computed using the following formula adopted by Kabir[37] to make the comparison and expression meaningful. Calculated Standardized Total Information Scores (STIS) values are presented in Table 1.

$$\text{STIS} = \frac{\text{Computed TIS} \times 100}{\text{Possible highest TIS}}$$

As can be gleaned in Table 1, professional books were ranked in the first position with an average Standardized Total Information Scores (STIS) of 35.93, and the internet was ranked in second place with an average STIS of 35.83. Further, it was revealed that magazines or newsletters were ranked the third position followed by workshops or conferences, and newspapers were ranked fourth and fifth positions, respectively, with average STISs ranged from

34.96 to 34.62. According to the findings, newspapers were ranked in the sixth position, and personal knowledge ranked in the seventh position with an average STIS of 34.18 and 33.21, respectively. However, there is a very low preference placed on colleagues with the lowest average STIS of 29.07.

Table 1: Scores and Ranks of Information Sources (n=2236)

	Information sources	**Standardized Total Information Scores (STIS)**	**Rank**
1	Professional books	35.93	**1**
2	Internet	35.83	**2**
3	Magazines/ newsletters	34.96	**3**
4	Library	34.78	**4**
5	Workshops/conferences	34.62	**5**
6	Newspapers	34.18	**6**
7	Personal knowledge	33.21	**7**
8	Colleagues	29.07	**8**

5.3. Criteria Use when Selecting Information Sources

The second research question is: what are the criteria used by the teachers when selecting information sources? The teachers were presented with some (9) selection criteria and were asked to evaluate them based on their perceived level of importance on the five-point Likert scale (0-4). Next, the Selection Score Index (SSI) was determined following the same procedure adopted when computing the Total Information Score. (TIS) Accordingly, the calculated SSIs of the selection criteria ranged from 0 to 8944. Then, Standardized Selection Score Index (SSSI) values were computed (Table 2) to make the comparison meaningful following the same procedure adopted above.

Table 2: Scores and Ranks of Selection Criteria (n=2236)

	Selection criteria	**Standardized Selection Score Index (SSSI)**	**Rank**
1	Applicability for teaching	67.16	**1**
2	Quality of resources	64.40	**2**
3	Relevancy of resources	63.18	**3**
4	Reliability of resources	62.22	**4**
5	Easy accessibility	61.99	**5**
6	Update resources	59.62	**6**
7	Familiarity of resources	54.10	**7**
8	Availability of resources	52.56	**8**
9	Affordability of resources	52.32	**9**

As revealed in Table 2, applicability of resources was ranked at the first position with average Standardized Selection Score Index (SSSI) of 67.16 followed by, quality of resources (average SSSI of 64.40) and relevancy of resources (average SSSI of 63.18) were ranked second and third

positions respectively. Furthermore, reliability of resources (average SSSI of 62.22), easy to access for the resources (average SSSI of 61.99), updating of resources (average SSSI of 59.62) and familiarity of resources (average SSSI of 54.10) and availability of resources (average SSSI of 52.56) were ranked at fourth, fifth, sixth, seventh and eighth positions respectively, while affordability of resources (average SSSI of 52.32) were ranked at the last position in the ranking. These results gave an insight that school teachers paid more attention on the applicability, quality and relevancy of information sources than other criteria when selecting sources for fulfilling their information needs. This finding is not in agreement with the findings of Williams and Coles[38] and Perrault[39] who found that most of the teachers depend on the resources of information that readily available in schools.

5.4 Information Literacy Skills of School Teachers

The third question of the study is: What are the information literacy skills do school teachers possess? To address that question, the respondents were asked to indicate their agreement for given statements on information literacy skills that are necessary for seeking information from the teachers' perspective. The modified version of the self-efficacy scale developed by Olumide[40] was adapted to explore respondents' competence/confidence levels in their information literacy. The questions were presented as statements, to be answered using a self-efficacy scale, based on a five-point Likert scale. The scale was tested for its reliability, and Cronbach's alpha value was 0.871 for the overall scale.

The statements covered the following elements: defining information needs, locating and accessing the resources, using information, and evaluating the product and process (see Table 3). A five-point Liked scale was used to measure whether respondents agreed or disagreed with a series of statements, to which the possible responses ranged from "strongly disagree to "strongly agree." There was also a "neutral" option. The results of calculated means scores for the information literacy statements are listed in descending order together with frequencies and percentages in Table 3.

As can be gleaned from Table 3, the majority (67%, N=1489) agreed, while 3% (N=70) disagreed, and 21 % (N=458) were neutral for the statement of "I can identify my information need." The mean score of 3.82 suggests that the majority of teachers perceived that they could identify their information needs. Regarding the statement, “I can utilize information effectively," 66% (N=1466) agreed, while only 3% (N=76) disagreed, and 21% (N=475) were neutral. The mean score of 3.82 shows that the majority of teachers thought they could utilize information effectively. For the statement of "I can access information from various sources," 64% (N=1438) agreed while only 2% (N=42) disagreed, and 24% (N=537) were neutral. The mean score of 3.82 suggests that most of the teachers believed that they could access information from various sources.

The respondents were also asked whether they thought that they can evaluate sources of their information needs. More than half of the respondents (57%, N=1272) agreed with this statement, while 5 %(N=117) disagreed, and 28% (N=628) were neutral. The mean score of 3.68 indicates that teachers were uncertain whether they can evaluate sources of information that they need.

When the respondents were asked whether they were aware of various information sources, 52% (N=1170) of the respondents agreed while 3.5% (N=77) disagreed, and 34% (N=770) were neutral. The mean score of 3.64 indicates that teachers were uncertain whether they were aware of various information sources that can be used for fulfilling their information needs.

Table 3: Teachers Perception of Information Literacy Skills

	Information literacy statements	**SDA (%)**	**DA (%)**	**NU (%)**	**AG (%)**	**SA (%)**	**RS***	**MN***
1	I can identify my information need	16 (0.8)	54 (2.7)	458 (22.7)	1228 (60.9)	261 (12.9)	2017	3.82
2	I have ability to utilize information effectively	33 (1.6)	43 (2.1)	475 (23.5)	1177 (58.4)	289 (14.3)	2017	3.82
3	I can access information from various sources	16 (0.8)	26 (1.3)	537 (26.6)	1183 (58.6)	255 (12.6)	2017	3.81
4	I can evaluate sources of my information need	19 (0.9)	98 (4.8)	628 (31.1)	1027 (50.9)	245 (12.1)	2017	3.68
5	I am aware of various sources of information	33 (1.6)	44 (2.1)	770 (38.2)	949 (47)	221 (10.9)	2017	3.64

Scale: (1) SDA= Strongly Disagree; (2) DA= Disagree; (3) NU= Neutral; (4) AG= Agree; (5) SA= Strongly Agree *: RS*= Number of Responses: MN*= Mean Score*

The results of the study reflect teachers' expressed perception in information literacy and are not necessarily a measure of their abilities. The results regarding information literacy gave an insight that most of the teachers were uncertain or neutral on most of the statements of perceived skills of information literacy. The results revealed that the majority of teachers who participated in this survey perceived that they can identify their information needs which are the main component of information literacy. This result is consistent with Olen[41] who pointed out that teachers should be role models for their pupils concerning information literacy, and they need to be competent, confident, reliant, and proactive to handle issues of abilities and disabilities effectively.

On the other hand, these results gave an insight that most of the teachers were uncertain about the perception of information literacy skills, and therefore they should be conducted more training on information literacy (IL), particularly the skills relating to information seeking. The fact confirmed by the studies of Fourie & Krauss[42] and Purcell & Barrell[4] who affirmed that the IL training is particularly required in rural areas for working adults, such as teachers, and could be addressed by considering the approach of IL skills development and the need for international standards and curricula for information literacy.

6. Conclusion

The results affirmed that professional books, the internet followed by magazines, libraries, and workshops, respectively, were the most preferred while the colleagues were the least preferred sources of information used by the teachers. These results gave an insight that school teachers in Sri Lanka used a wide array of sources of information to fulfill their professional information needs. It was further established that the applicability, quality and relevancy of information sources were the main attribute that considered by the teachers when choosing appropriate sources of information to satisfy their information needs. As deduced from the results, teachers have certain skills, which are imperative skills needed for the effective use of information resources. The majority of them perceived that they could identify their information needs, followed by the ability to access information from various sources, the ability to utilize information, and awareness of various sources of information.

7. Recommendations

Since the results show that school teachers are uncertain about their need for information literacy, it is recommended that teachers should be given the opportunity for constant Information Literacy (IL) training for them to become efficient users of information resources. It should be conducted IL skills programs for school teachers as in-service training, and integrated course content of IL and library skills should be incorporated into the course outline of colleges of education and higher education institutions of the country.

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