# Relevance of Dr. S. R. Ranganathan in the 21st Century

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## Introduction



I do not wish to go into the details of Ranganathan's life history except to say that he started his teaching career in 1917 at the Govt. College, Mangalore, where he taught physics and mathematics. He was there till 1920 and again for a few months during 1921. It was then that he founded the Mathematics and Science Association of the College. He later worked at the Govt. College, Coimbatore and then at the Presidency college, Madras. He left Presidency College in January 1924 to take an appointment as the first librarian of Madras University. The rest of his story is well known to all the library and information professionals. People interested to know more about Ranganathan's personal life can read his son Mr.R.Yogeshwar's biography of his father entitled "S.R.Ranganathan – Pragmatic Philosopher of Information Science : A Personal Biography. The book is published by the Bharatiya Vidya Bhavan

You may be surprised to know that to-day the managers of several internet search engines are utilizing the principles, postulates and canons enunciated by Dr. Ranganathan some seven decades ago, in their trials with providing accurate information in as little time as possible. The scheme of classification of subjects which he designed then is being used in the areas of information and communication technologies. Although Ranganathan's Colon Classification is not as popular as other schemes of classification like the DDC or UDC are, the principles behind the scheme of classification are being used more and more in computer and communication technologies. It may be interesting for you to know that Ranganathan's books and articles are being searched more and more by people belonging to different disciplines.

The managers of yahoo! and scores of other search engines that enable netizens to cruise the Infobahn, are all set to revolutionise search-speed and retrieval using the concepts formulated by the late Dr. S.R. Ranganathan.

In the 30s while studying in England, Ranganathan created a classification and retrieval system that formed the technical basis of many of the search engines in use today. What's more, researchers are now studying his books and papers on classification and cataloguing to find clues that will enable faster search.

The Internet's search engines of today are reminiscent of that famous story from Ramayana: when Lakshmana lay dying in the battle field, the physician told Rama that if someone could fetch the Sanjeevini herb, his brother's life could be saved. So the ever faithful Hanuman, leaped across valleys and rivers and finally found the mountain on which the herb Sanjeevani grew. But there was dense vegetation all around and Hanuman wasn't a botanist. So he grabbed the mountain and brought it to Rama and Lakshman survived.

If the browser represents Hanuman in search mode, then the database is the mountain. The information is hidden somewhere. How do you find it? Ranganathan created a revolutionary system in 1933 and published his findings in a book called Colon Classification. The 'facet analysis which he formulated some 70 years ago is being used by the famous Yahoo search engine.

In an article Aimee Glassel, the Internet Scout Project's lead Internet cataloguer says. “What Ranganathan recognized was that the world of knowledge was growing very quickly, with new areas being discovered and new ways to combine existing subjects. Any classification that attempted to enumerate a finite number of subjects without full capabilities for expansion to allow for new areas of knowledge could never meet the needs of the future? “Ranganathan wanted to classify into broad classes which were then broken into basic concepts or elements according to characteristics called facets. Individual facets were then synthesised to form a complete number which could describe in detail a single book. This is the interlying principle of Colon Classification.

And since 'Yahoo' has applied his ideas and in-depth studies are being done, correlate his findings with improvements in search engine technology: Yahoo and many other search engines are using his most popular indexing procedure and probably the earliest one. The chain indexing system of Ranganathan for retrieving information with all its broader narrower and related term

conceptsis being used successfully by 'Yahoo' and many other search engines.

To-day, e-resources often remain hidden from the user. Our reliance on consumer–focussed search engines leaves whole portions of the web-inaccessible-the “invisible web” as Chris Sherman and Gary Price put it in their book with the same title (2005). The larger the invisible web, the likely resources will reach users. Ranganathan had found a solution for it.

Ranganathan formulated objectives and principles for the organization of, access to, and use of library materials. Given the changing information world, this is a very good time to reconsider Ranganathan's five laws. Now that researchers and librarians work in a digital environment, it is useful to see how they apply to 'library' activities in the electronic world.

**Application of Ranganathan's Five Laws of Library Science to the Web**

If information is the currency of the knowledge-based economy, the Web will be the bank where it is invested. Ranganathan developed what has been widely accepted as the definitive statement of ideal library service. His *Five Laws of Library Science* (1931) is a classic of library science literature, as fresh today as it was in 1931. These brief statements remain as valid -in substance if not in expression- today, as when they were promulgated, concisely representing the ideal service and organizational philosophy of most libraries today. They reflect how the library and librarian, and the public relate to each other.

*1.Books are for use.*
*2.Every reader his or her book.*
*3.Every book its reader.*
*4.Save the time of the reader.*
*5.The Library is a growing organism.*

These five laws have been a foundation on which librarians practice librarianship. (Finks, 1981; Rubin, 2004)

Although these statements might seem self-evident today, they certainly were not to librarians in the early part of the 20th century. The democratic library tradition we currently enjoy had arisen in America and England only in the

latter part of the nineteenth century (Sayers, 1957). For Ranganathan and his followers, the five laws were a first step toward putting library work on a scientific basis, providing general principles from which all library practices could be deduced (Garfield, 1984).

**Application of the Laws for Digital Items**



Since Ranganathan came up with his laws there have been many changes in technology and the formats information can come in. Ranganathan's laws refer specifically to books or at least to paper printed materials, but today there are audio-books, electronic materials, the internet, CDs, DVDs, Video cassettes, microforms, etc., but especially digital information. Do the laws apply to these too? Yes and no. While it may not be implemented in every case it certainly can be. There are libraries today which don't even follow the laws with just there books, even though it is possible. There are still closed collections and with copyright laws and electronic access use, some materials are limited to only the users of that library, while with printed materials they can be provided via interlibrary loans.

The fifth law could arguably be considered the easiest or most relevant law to digital collections. The library is growing through digital resources in jobs, organization, implementation, as well as space. In essence, you could have an infinite collection in digital format compared to a physical collection; you are only limited by the size of a monitor and the size of the storage. With the growth of the internet more information has become available, and if we look at the essence of Ranganathan's laws, and this appears to be supported by Lee Finks (1981) and Michael Gorman and his new laws (1995), the laws are not only about the books or the library, but the information contained within, so the laws should apply to all formats, digital or not.

New information and communication technologies suggest that the scope of Ranganathan's laws may appropriately be extended to the Web. Nowadays the same five laws are discussed and reused in many different contexts.

Book, reader, and library' are the basic elements of Ranganathan's laws. Even if we replace these keywords with other elements, Ranganathan's laws still work very well. Based on Ranganathan's laws, several researchers have presented

different principles and laws. For instance, "*Five new laws of librarianship*" by Michael Gorman (1995); "*Principles of distance education*" by Sanjaya Mishra (1998); "*Five laws of the software library*" by Mentor Cana (2003); "*Five laws of children's librarianship*" by Virginia A. Walter (2004); "*Five laws of web connectivity*" by Lennart Björneborn (2004); and "*Five laws of diversity/affirmative action*" by Tracie D. Hall (2004).

Gorman's laws are the most famous. He has reinterpreted Ranganathan's laws in the context of today's library and its likely future. Michael Gorman has given us his five new laws of librarianship:

1. Libraries serve humanity.
2. Respect all forms by which knowledge is communicated.
3. Use technology intelligently to enhance service.
4. Protect free access to knowledge; and
5. Honor the past and create the future (Crawford & Gorman, 1995).

These are the very essence of what Ranganathan's laws are conveying and protect free access to knowledge is what he was saying.

Gorman (1998a,b) believes that S.R. Ranganathan invented the term 'Library Science' and beautifully demonstrates how his laws are applicable to the future issues and challenges that librarians will face. Gorman's laws are a valuable supplement or extension to Ranganathan's laws and should be used to help carry out and understand Ranganathan's laws in modern contect.

Whether one looks to Ranganathan's original *Five Laws of Library Science* or to any one of the many new interpretations of them, one central idea is immediately clear: Libraries and the Web exist to serve people's information needs.

**The Five Laws of the Web**

The *Five Laws of the Web* are inspired by the "*Five Laws of Library Science*" which were the seed of all of Ranganathan's practice. These laws form the foundation for the Web by defining its minimum requirements. These were given by Aliroza Noruzi, Iranian Librarian.

These laws are:

*1.Web resources are for use*.
*2.Every user his or her web resource*.
*3.Every web resource its user*.
*4.Save the time of the user*.
*5.The Web is a growing organism*.



The Web consists of contributions from anyone who wishes to contribute, and the quality of information or the value of knowledge is opaque, due to the lack of any kind of peer reviewing. Moreover, the Web is an unstructured and highly complex conglomerate of all types of information carriers produced by all kinds of people and searched by all kinds of users (Björneborn & Ingwersen, 2001).

This new revised version of Ranganathan's laws gives us the grounding for librarians' profession just as the 193l original did. The Web exists to help users achieve success through serving user information needs in support of the world community. Information needs are met through web pages and documents appropriate to web users. In fact, the *Five Laws of the Web* are really the foundations for any web user-friendly information system. What they require is universal access as a right of cyber citizenship in the information age.

**1. Web Resources are for Use**

This law implies that the Web is for using and learning and information is there to be used. This law is very important because information serves no purpose if it is not utilized and at least available for people to attempt to learn. The role of the Web is to serve the individual, community and service, and to maximize social utility in the communication process.

The Web must contain and preserve all records of all societies, communities and languages and make these records available to all. Old web pages should be protected by Internet Archive (www.archive.org) The Web must acquire materials and make them accessible so they can be used. The Web needs to be accessible to users. What we are producing and delivering via the Web and how well we are doing that, are the tangible results of the Web.

Just as Newton's first law of motion ("A body at rest remains at rest unless acted upon by an outside force") is a statement of the obvious, the first law of the Web also puts forth an obvious and elemental principle. But even so, it is a law that is often violated in the practice and use of the Web.

There is something particularly convincing in the claim that

The Web exists for users. Therefore, the interests of users must be the basis of the Web operations;
The Web exists for researchers and writers, so the interests of researchers and writers should be central in the Web policies;
The Web exists for society, and it should serve the interests of society.
This law dictates the development of systems that accommodate the use of web resources. For instance, updating and regular indexing of web site resources facilitates the use of site resources and the Web in general.

**2. Every User his or her Web Resource**

This law has many important implications for the Web. This law reveals the fundamental need for balance between making web resources and the basic right of all users to have access to the web resources they need anywhere in the world. This makes diffusion and dissemination very important; each web resource should call to mind a potential user.

The collection must be appropriate to the web site's mission. A web site must contain resources appropriate to the needs of *all* its users.

Access policies also have implications for search engines.

Clearly, it is the business of webmasters to know the user, to know the web resources, to actively help in the finding and retrieving by every user of his or her web resource, and to help search engines in the process of indexing web sites.

Web sites must value all means of preserving and communicating the records and achievements of the human mind and heart. This second law dictates that the Web serves all users, regardless of social class, sex, age, ethnic group, religion, or any other factor. Every cybercitizen has a right to information.

Webmasters and search engine designers should do their best to meet cybercitizens' needs.

### 3. Every Web Resource its User

When a web user searches the Web, or gains access to the Web's services, there are certain web resources that will meet his or her needs. Appropriate arrangement of documents in a web site is also an important means of achieving this objective of the third law.



How can a webmaster find a user for every web resource? There are many ways in which a web site can actively work to connect its resources to its users:

Distribution of new web resources via mailing lists, listservs and discussion groups;

Making new web resource list on the home page of the site, etc.;
Submitting resources to popular search engines and directories, which is the most common way of indexing the new resources of a web site.

The use of a structured, well-organized and more categorized site map/index is a necessity, as it ensures uniformity of treatment of various web resources on similar topics. It should be simple, and easy to use.

Webmasters should add content with specific user needs in mind, and they should make sure that users can find the content they need easily.

This law stipulates that a web resource exists for every user, and that resource should be well described and indexed in the search engines' indexes, displayed in an attractive manner on the site, and made readily available to users. "It should be easy for users to search for information from any page on a site. Every page should include a search box or at least a link to a search page" (Google, 2003).

### 4. Save the Time of the User

This law presents the biggest challenge to the Web administrators, webmasters and search engine designers. Webmasters should always bear in

mind that the time of users is very important and precious. A web site must always formulate policies with the information needs of its users in mind. Web site collection must be designed and arranged in an inviting, obvious, and clear way so as not to waste the time of users as they search for web resources they need.

This law has both a front-end component (make sure people quickly find what they are looking for) and a back-end component (make sure our data is structured in a way that information can be retrieved quickly).

A well-planned and executed site map saves the time of the user. Saving the time of the user means providing efficient, thorough access to web resources. It means satisfied web users. This is the prime measure of the web site's success;

This fourth law emphasizes efficient service to the users, which implies a well design and easy-to-understand map/index to the site.

**5. The Web is a Growing Organism**

We need to plan and build with the expectation that the Web and its users will grow and change over time. Similarly we need to keep our own skill levels moving forward (Steckel, 2002).

The Web presents an interesting dilemma for librarians. When a book is published, it has been assessed by editors and publishers, and hopefully has some value. Moreover, when a web page is published, it has simply been uploaded to a server somewhere. There are no guidelines for the Web. Anyone can publish--and does.

The boundless resources found on the Web benefit from a librarian's expertise in such areas as indexing and cataloguing, as well as search techniques; there will be an increased demand for these types of skills as users demand more value from the searches that they conduct (Syracuse University, 2004).

The fifth law tells us about the last vital characteristic of the Web and stresses

the need for a constant adjustment of our outlook in dealing with it. The Web grows and changes and will do so always. Change and growth go together, and require flexibility in the management of the Web collection, in the use of cyberspace, in the retention and deployment of users, and in the nature of web programs. The Web collection increases and changes, information technologies change and people will change. So this fifth law recognizes that growth will undoubtedly occur and must be planned for systematically.



These laws are as applicable to the current practice of the Web as they will be to the Web of tomorrow. These laws are not only applicable to the Web in general but characterize the establishment, enhancement, and evaluation of online databases and digital library services as well. These five laws concisely represent the ideal service and organizational philosophy of the Web. Therefore, we can evaluate web sites by applying the *Five Laws of the Web*.

It is a well established fact that the Five Laws of Library Science have been accepted as fundamental laws and there is no dispute on this. There are only elaborations depending on the changing information environment. Infact even before computers made their entry, Ranganathan had envisaged their importance in information transfer. The laws can also be interpreted like :

Eliminate the obstacles that prevent users from making effective use of electronic sources (second law); Integrate electronic resources into virtual learning environments of the institution (third law); provide metasearching capabilities so that users can search entire sets of electronic resources (fourth law); and offer 24/7, anytime access to libraries through electronic networks (fourth & fifth laws).

**Library Management**

There are many modern management principles which are being adopted to-day not only in libraries but also in many other places have been explained in his five laws of library science seven decades ago. Inspite of this we try to import and adopt the principles and practice of management followed in other countries. Many of the management principles of the famous Harward Business School or the more recent Japanese management principles are being used by us spending enormous amount of money over them.

House keeping and work place organization may not be a very interesting job for many. Keeping and maintaining every article in a right place is a simple organizational technique. If this is followed, standardized operations can bloom which helps in providing good service to users.

In Japan, inorder to keep the house in proper shape, they introduced the "5 S" management principles and spread them in other countries as well. Many large industries in India invited them paying hefty amounts and are trying to adopt these principle in their work place organization. The Principles of 5s are:

**Principle of 5 S**

The 5S are prerequisites for any improvement program. As waste is potential gain, so eliminating waste is a gain.

5S Philosophy focuses on effective work place organization, simplifies work environment, reduces waste while improving quality and safety.
There is no hope for efficiency or quality improvement with dirty work place, waste of time and scrap.

Five **S** stand for the five first letters of these Japanese words:

| | Meaning |
|---|---|
| Seiri | Sorting Out |
| Seiton | Systematic Arrangement |
| Seiso | Spic and Span |
| Seiketsu | Standardizing |
| Shitsuke | Self-discipline |

Calling these principles the "**5S**" is a good way to remember their meaning and content.

**What are 5S?**

**Seiri**

Sorting, keep the necessary items in work area, dispose or keep in a distant storage area less frequently used items; unneeded items are discarded.

Seiri fights the habit to keep things because they may be useful someday. Seiri helps to keep work area tidy, improves searching and fetching efficiency, and generally clears much space. Seiri is also an excellent way to gain valuable floor space and eliminate old broken furniture and fittings, obsolete documents, etc.

**Seiton**



Systematic arrangement for the most efficient and effective retrieval. A good example of Seiton is the book rack. Effective Seiton can be achieved by painting floors to visualize the dirt, outlining work areas and locations. An example of Seiton are "book carts or trolleys". As cleaning is a major part of **5S** the custom made carts hold books and other documents.

**Seiton saying would be: *"A place for everything and everything on its place."***

**Seiso**

Cleaning. After the first thorough cleaning when implementing **5S**, daily follow-up cleaning is necessary in order to sustain this improvement. Cleanliness is also helpful to notice damages on equipment or documents. These minor damages, if left unattended, could lead to loss of use. Regular cleaning is a type of inspection.

**Seiketsu**

Standardizing. Once the first three **S** have been implemented, it should be set as a standard so to keep these good practice work area. Without it, the situation will deteriorate right back to old habits. Have an easy-to-follow standards and develop a structure to support it. Allow employees to join the development of such standards.

**The first 3 S are often executed by order. Seiketsu helps to turn it into natural, standard behavior.**

**Shitsuke**

Finally, to keep first 4 **S** alive, it is necessary to keep educating people maintaining standards. By setting up a formal system; with display of results, follow-up, the now complete **5S** get insured to live, and be expanded beyond their initial limits, in an ongoing improvement way, the **Kaizen way**.

The effect of continuous improvement leads to less waste, better quality and faster lead times.

Ranganathan has in no uncertain terms described and discussed in detail the importance of house keeping and work place organization some seven decades ago in his Five Laws of Library Science.

Ranganathan's Five Laws of Library Science, Chain Indexing to derive subject headings, and Facet Analysis became the cornerstones of the philosophy of the techniques of Western society's library experts. B.I.Palmer and A.J.Wells successfully interpreted and ushered in Ranganathan's classification ideas into the west. They acknowledged him as their Guru and considered his work as the greatest breakthrough in bibliographic classification which is being profusely used by indexers even on the Net



The ISO-9000 series of quality standards helps in maintaining quality of work and service in various sections of different industries including libraries. You may remember Ranganathan had formulated several standards for the then Indian Standards Institution (now) Bureau of Indian Standards for maintaining quality in different areas of library work.

These are like tip of the ice berg. If you study his contributions in greater detail you will know how relevant Dr. S.R. Ranganathan to-day is and will continue to be relevant for ever.

**Spiritually Ranganathan thought of the whole world as one family, one humanity. For him, library services and research were the instruments to promote peace and prosperity in this world for the well being of entire human race. His own outlook was one of an internationalist.**

> … I hold that library service, bibliographic organization and library classification recognize no national or political boundaries. They are international. The library profession is international… As a librarian and as a claffication ist I belong to the world, and not only to any particular country.

**The greatest tribute to Ranganathan has come from D.Ellis from U.K. "his genius is attested to by the very portability of his ideas across time, technology and cultures right into the Internet era."**

Finally, it is not whether Ranganathan is by himself relevant to-day, but it is we who can make him relevant by studying and applying his principles and practices in different areas of knowledge management.