9. HOW TO DEVELOP FUNCTIONALLY WITHIN THE INFORMATION SOCIETY

In order to develop functionally within the information society, a person should attain, maintain and strengthen a set of abilities and capacities which enable him/her to critically create, integrate and share information and knowledge in his/her daily, official or personal activities using Information and Knowledge Technologies (IKTs)
### How to develop functionally within the Information Society

#### 2nd Version, May 23, 2015

#### Definition
In order to develop functionally within the information society, a person should attain, maintain and strengthen a set of abilities and capacities which enable him/her to critically create, integrate and share information and knowledge in his/her daily, official or personal activities using Information and Knowledge Technologies (IKTs).

#### Objective
To develop a personal strategy including the options for the exchange of information and knowledge, learning and use of new technologies within a critical analysis of opportunity and effectiveness.

#### Expected results
- Timely access to the required information
- Free and equitable access to health scientific contents
- Quality of the Organization’s scientific production
- Add value, through solid scientific evidence, to every institutional activity
- Digitally literate staff

#### Premises
- **Accessibility**: open access to reliable information and knowledge
- **Exchange**: the exchange of health knowledge, by means of the proper use of information and communication technologies, is the key to the development of health in the Region
- **Literacy**: It is important to understand literacy as a process rather than a state.
- **Individual and collective commitment**: The Organization’s commitment to continuous literacy, as well as that of its members since they join it, is the basis of a learning organization.
Figure 1: Cycle to functionally develop within the Information Society

Source: http://marcelodagostino.wordpress.com
Phase I

Know

Knowing the tools, methodologies and information available for the type of activity usually developed, both at professional or personal level.

This phase, which the officials of an organization usually develop rather intuitively, consists in looking for all those tools, methodologies and information required for routine as well as for unusual work.

A person that is functionally developing within the information society is required to incorporate, strengthen and use certain abilities related to the incorporation of new technologies and large amounts of information coming from different sources, which could be very helpful for his/her daily work and for his/her personal life.

Some of them are:

1. **Critical thinking or judgment**: making informed and balanced value judgments differentiating content from presentation;
2. **Understanding hypertext**: Reading, writing and understanding within a context of dynamic and not sequential hypertext;
3. **Knowledge building**: building a wealth of reliable information coming from different sources, with the ability to collect and evaluate both the fact and the opinion, with objectivity and common sense;
4. **Search capacities**: using the concept of Internet search engines and accessing the invisible web;
5. **Creating a “personal information strategy”**: which includes source selection, use and distribution mechanisms;
6. **Virtual collaboration**: Active participation in virtual communities and forums in order to contact people, discuss topics, find solutions or ask for assistance;
7. **Problem solving**: ability to understand a problem and follow the steps to solve it in an informed manner;
8. **Learning**: knowing how knowledge is organized, how to find information and how to use information so that others can learn (knowledge recirculation).

Developing or strengthening these capacities relies largely on incorporating some routines to daily work, reinforcing them with continuous education and training along with improved integration in networking.

**Situation analysis**: In order to know your personal situation at the time of deciding the tools and sources required for your work, it is important to consider at least the following:

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2 The information Society is a hyper-connected society that gives us the possibility of benefiting from professional knowledge in the use of information and communication technologies, in order to be able to apply them to our personal life.
3 Invisible web is the term used to describe all the information available on the web that cannot be found through traditional search engines.
4 Refer to PAHO Methodology for the development of Communities of Practice.
5 Refer to PAHO Methodology for the development of Lessons Learned.
a. **Information needs**: Identify the information you need for your daily work, for sharing with colleagues or team, and for your technical counterparts inside and outside the Organization. At this time you can recognize what information you need to search for, analyze and share.

b. **Identification of Tools**:

- **Sources**: Identify the sources, information resources and databases from which you usually obtain that information. Check which of these resources include bibliography and evidence-based information.
- **Technological tools**: Identify what technological tools you usually use for your work, for searching information, for communicating with your colleagues and counterparts, for disseminating information. Which of them are provided/authorized by the institution.

**Identification of Needs**: Based on the situation analysis made, it entails searching information resources and technological tools available for the requirements of the job. Although it may be comfortable to use always the same tools and resources, it is important to perform an exploratory work to discover other possibilities, it is part of the process of incorporating novelty and innovation to routine work.

The search can be organized as follows:

1) **What is available inside the Organization?** Although available institutional resources to obtain technical information inside the Organization are usually perfectly known, there are often new developments or unknown spaces. Contacting people who habitually use or manage information within the organization to explore news and get acquainted with new trends may clarify the following:

- Bibliographic databases in the institution with previous records of informational production (library catalogues, technical consultation reports, travel reports, list of publications and other institutional information products, etc.);
- Availability of documents and other already digitalized sources;
- Tools or technological resources available or allowed by the organization to facilitate work.

2) **What is available outside the Organization?** Contacting qualified people in the field, inside and outside the Organization, can provide data on currently not used information resources that you may incorporate to your work according to your needs. For instance:

- Health databases such as Pubmed, Medline, VHL, Lilacs, are very frequently used; however, many health workers do not have due knowledge on their use. Furthermore, there may be others, helpful for your daily activities, that your colleagues can recommend.
Available tools not used or not usually available in the organization but that can be useful for the task you wish to carry out. The aim of incorporating technological tools is to facilitate or reinforce work. These tools may be suitable for performing collaborative work through virtual meetings, discussion forums, online work, blogs, wikis, etc. It is very important to have the adequate advice regarding their correct use and efficacy in the task to be performed.

Types of technological tools:

a. According to the Platform in which they were developed:
   - Web-based
   - Locally used

b. According to their use:
   - For (formal or informal) communication
   - For information exchange
   - For information dissemination
   - For searching and collecting information
   - For learning

c. According to temporality:
   - Synchronous
   - Asynchronous

### Phase II

**Understand**

Understanding the tools, methodologies and information available for the type of activity usually developed and their intended objective

**Key premise:** Tools are created with a purpose and they should be used in that way if we wish to make the most of them.

**Correct use:** Understanding the intended use of tools is as important as knowing which tools are available. For instance: Is it possible to create a document using PowerPoint? The answer is: Yes, it is. However, this is not the intended use of PowerPoint and, if we use it incorrectly, we minimize the power of the tool as well as the possibilities it offers.

**Example or incorrect use of tools:**

- Using MS Word for an audiovisual presentation
- Using MS Excel for a letter
- Using Twitter exclusively for RTs
- Using Wiki if comments from users are not expected
- Using Facebook as a Virtual Discussion Forum platform
- Using the concept of “social media” for every social network
What is necessary to understand? It would be impossible to know and understand everything in this hyper-connected society or Information Society. Nevertheless, and according to the current trends (an annual review is advisable) we recommend to dive deeper into the following concepts:

- Knowledge Management
- Information Society
- Knowledge Networks
- Distribution lists
- Strategic Relationship Networks
- eHealth - TeleHealth
- Communities of Practice
- Scientific Communication
- Scientific vs. Non-Scientific writing
- Information Services
- Information Products
- Virtual Forums
- Organizational Learning
- Digital Literacy
- Social Networks
- Twitter
- Facebook
- LinkedIn
- Google+
- Instagram
- YouTube
- Wikipedia

Phase III Learn Identification of possible learning and skills gaps that should be strengthened

Once tools, information sources and the necessary resources to streamline and innovate on daily tasks have been identified and understood, it is necessary to identify individual knowledge and skills gaps in order to use them for a personal learning plan.

It is advisable to establish a personal program of Digital Literacy oriented towards increasing our knowledge of these products to be able to use them. The plan should include a self-learning stage assisted by peers and organizational experts in the necessary tools, resources and web sites that provide information on how to use each of them. The possibility of institutional learning should be also considered, among other possibilities. The important aspect is to learn more about the possibilities each of the products identified as required may provide in order to be able to critically identify their real worth for daily work.

Phase IV Apply Applying new technologies, methodologies and information resources to our daily work to make it more efficient and effective

Although the literacy process is continuous, once a tool and/or resource is known it is necessary to incorporate it to our daily work and dive deeper in its usage to get the most of its potential. A learning organization requires its staff to incorporate these criteria to its daily work in order to
provide feedback and generate new knowledge. The organization is responsible of establishing mechanisms, spaces or procedures to motivate individual learning actions⁶.

Seek: As a part of applying this new knowledge, it is important to establish a consistent search mechanism that enables to keep the minimum level of knowledge required. In order to optimize the time to access information, it is necessary to consider at least the following:

- Identify, select and configure sources of information (search engines, virtual libraries, thematic repositories, databases, scientific journals, social networks, grey literature and invisible web);
- Corporative or institutional web sites (governmental sites, statistics institutes, associations, universities, journals ...);
- Search engines you are most familiar with;
- Social networks accounts of “leading” people or institutions within your field of work.

**Phase V Share**

This phase implies individual reflection on the relevance of sharing the knowledge acquired in our personal and professional lives for the benefit of Public Health

We are living in a world in which, with the required resources and knowledge, lower or higher quality information and technologies can be accessed in different ways. Nevertheless, having the resources and the training to know how to gain access to them and their real value and capacity is a privilege that is not equally available to all. This methodology is aimed at offering the minimum and necessary information a health worker should have to functionally develop within the information society, thus reinforcing the actions towards better people-centered universal health coverage. Those having this possibility and knowledge are responsible of sharing it for the benefit of others. This is the aim of the phase we decided to refer to as “Share”.

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⁶Refer to PAHO Methodology on “How to Become a Knowledge- and Learning-based Organization”
Collaborate: It is important to participate in the production of publications or journal articles, as well as in the development of standard operating procedures that allow capturing our knowledge and added value acquired in the course of our professional experience. It is also important to offer our knowledge and experience in technical, virtual, or face-to-face seminars, as well as in international congresses relevant at supranational level. Finally, and depending on our possibilities and time, it is important to collaborate with our own less formal and structured contents through blogs, Twitter, LinkedIn or Facebook, among others.

Answer: If you use blogs, Twitter or other social network, it is really important to reply to those users who wish to communicate with you. Besides, it is important to check institutional email accounts since many people communicate and send relevant messages, suggestions or questions through these channels.

Criticize: Social networks have incorporated the concept associated to content rating. This can be observed in sites of hotels, restaurants or tourist resorts, where people can leave their rating. Although we are not used to “criticize” or “rate” the sites we browse, it is important to do it as part of our intellectual contribution to the contents published on the web.

Interact: As a health worker with the proper knowledge to functionally develop within the Information Society, it is very important for you to interact with different users of virtual spaces. It is important to make comments on tweets or blog posts as well as to provide notes that can be published in other social networks or virtual spaces. Remember that your interaction may take 5 minutes and could be a source of invaluable knowledge for someone looking for reliable and relevant information on public health.

Disseminate: The correct dissemination of information is the last step of scientific production or communication and it should be assumed with responsibility. It is not worth producing a
publication which is not read or does not reach the target audiences. Therefore, before producing a scientific or technical publication, bear in mind your target audiences, the cost of dissemination, the languages to be considered and how its impact will be measured. This is the only way to achieve cost-effective information dissemination.

The following are some tools that will enable “sharing” – and increasing – your knowledge:

1. Social networks, including blogs, wikis, Twitter, LinkedIn, among others
2. Virtual discussion forums
3. Virtual meetings
4. Information dissemination list
5. Communities of practice
6. Infographics
7. Technical publications
8. Distance courses
9. Knowledge networks
10. Licenses for information use (copyright and copyleft)

**Final thought:** Although this methodology proposes a set of actions to strengthen individual and collective knowledge, it is important to understand that new sources of knowledge may appear as a result of practices established by internet users and individuals, particularly new generations, who are heavy “consumers” of information and communication technologies.

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*Refer to PAHO Methodology “How to effectively participate in a virtual forum”*