The Role of the Library on the Evaluation of Scientific Information

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Abstract

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Nowadays, despite the fact that more and more pupils and students have access to scientific resources through the specific channels of new information and communication technologies, there are several gaps regarding its evaluation. Taking into account this reason, a series of global organizations have joined librarians on writing about the need to improve students' information literacy development.

It is very important for an educator to be able to guide the pupils and students on how to obtain useful information in the era of knowledge explosion. Recent research illustrated that this category of *information consumers* had been confronted with difficulties and they needed assistance in the process of information searching. When analyzing that aspect in the Romanian educational institutions, it could be observed that many pupils and students used the public library indeed, but in many situations they do not know what information became available. More, they have difficulties on determining the information they need and its quality, being unable to compare and evaluate various alternatives for getting informed.

The paper tries to offer a reason that puts the library in the role of the evaluator of the scientific information taking also into account the pupils' feedback collected with the occasion of their participation in several workshops (non-formal activities) oriented on the theme of *Meeting the Nano-World*, organized in the frame of the EU FP7 project entitled: "*IRRESISTIBLE - Including Responsible Research and Innovation in Cutting Edge Science and Inquiry-based Science Education to Improve Teacher's Ability of Bridging Learning Environments*".

1. Introduction

Just as in any activity area, holding and obtaining relevant and timely information has a positive influence on the decisions adopted at any institutional level, information being considered a very important resource along with the classical ones: work, nature, capital. It is known that information can be accumulated constantly, yet it has, by excellence, a perishable character, a conclusive example in this sense being the expansion of the Internet (OECD, 2008). At the beginning of the 21st century, we faced an accelerated dynamics of the social changes, especially with their depth, as new development directions emerged on the educational level, aiming to align the instructive-educative objectives to the concrete demands of the knowledge-based society.

On the European level, things related to globalization, multi-culturalism or cultural diversity are becoming more and more intense mentioned (Dragicevic-Sesic, & Stojkovic, 2002), the educational domain being obliged to face the new trends and adapt itself to the technologically performant environment. In the above-mentioned context, the premises of the transition from the information society to the knowledge-based society have been created, where the individual is capable of understanding, evaluating and capitalization of information.

2. The role of the library on transferring of informational skills

At the basis of life-long learning, there are technological and research abilities. Without them we cannot become informationally independent. Information-related skills are the first step towards the realization of the educational objectives and those who can develop them are the specialists in the information and documentation sciences, but also the teaching staff who needs to be involved in the domain of the information-related activity, having the obligation to become aware that they are playing the main role on ensuring the information culture. Unfortunately, there are some barriers in the creation of a pertinent informational culture:

- not knowing the documentary typologies;
- not knowing the informational resources location strategies and techniques;
- not knowing the forms and mode of information dissemination;
- knowing the informational resources and their location, but finding it impossible to access them.

To be able to go over those barriers, we need to master the theories and the techniques of the informational culture. The classical definition refers to *"the ability of locating, evaluating and using information to become, for the entire life, informationally independent"* (ALA Presidential Committee on Information Literacy, 1989). The basic elements of the informational culture involve the knowledge on the information sources and their organization and mastering certain abilities:

- precise definition of the needed information;
- efficient determination of the location of the information sources;
- critical evaluation of the informative elements and of the information sources;
- integration of the information selected in the basic knowledge;
- organization and communication of the information to other persons;
- effective use of the information to realize the activity proposed;

- ethical and legal use of the information;

- synthesizing and building an added-value product based on the existing information.

The aim of the information culture is to provide to each individual with a minimal knowledge allowing him/her to use information, to have diverse skills, in a context calling for informational resources (Erich, 2007). According to a classical model of the information culture application, the stages that each pupil, student, researcher etc. needs to go through are (Horton, 2008):

- knowing the information and documentation structures (location, organization, services, offers);

- library research training (knowing the services offered, the information sources etc.);

- training on the use of information resources (finding the location and exploiting the information regardless of the information source).

Lately the users have been obliged to face a continually growing of information production, especially due to the fact that - regarding the Internet searching action – the filtering of the useful information calls for specific abilities. Therefore, both informational culture and technological culture have become indispensable.

The informational culture represents the primordial condition of the professionalism and success of the future specialist in any area. Consequently, simultaneously to professional training, the student/pupil needs to acquire habits and experience in relation to scientific information, developing his informational skills. Both the specialists in information and documentation sciences, especially the librarians, as members of the educational community, and the teaching staff involved in the domains which claim activities that process the information, need to learn to play the main role on ensuring the information culture.

Using their creative professional capabilities and possibilities, and relying on programmes integrated in the training courses, they need to actively contribute to the educational process, helping the pupils on their aspirations of accumulation and improvement, of cultivation of the habits and skills, knowledge and values, necessary to continue to study throughout their lifetime.

3. The County library and its role as evaluator of the scientific information

In general, the County libraries - taking into account their structure and size of the collections, but also the specificity of the products and provided services -, represent encyclopedically libraries, offering also access to special and specialized collections, in order to answer to most diverse information demands, from the simple reading for fun to the fundamental and applied scientific research. Consequently, the typology of County libraries is extremely diversified. In this sense, we are talking about:

- *Users who are citizens* with different information interests, occupations and needs:

o *pupils/students and teaching staff* who are searching books/documents, generally in strong agreement with the school bibliography;

o *university students and teaching staff* interested in the documents with a high specificity degree, in relation to specific demands of the didactic and research activities. This type of users is interested, as well, in the documents presented in the special collections of the County libraries, with the view to be used in research activities. In order to meet the demands of this type of users, a much

more specific acquisitions policy is needed to be approached, an intrinsic collaboration existing between universities and libraries, in order to avoid the acquisition of the same types of documents. According to the new approaches in the area, we can even speak in this case about the transformation of the County library into a *public university library*;

o   *adults*, interested especially on finding encyclopedic information;

o   *children and teen-agers* who represent a very important group which is treated with priority. In the actual knowledge society, more young people prefer the Internet as an alternative to reading a book, by example;

o   *young people skilled in the literary area* for whom there are organized special programmes, thematic meetings, activities of presentation and promotion of their own creations;

o   *elderly people* for whom a book itself has become a *luxurious object* that not everyone can afford;

o   *users with disabilities*, offering them in this sense the possibility of coming to the library (easy access) but also specific materials (daisy books);

o   *users interested in documents that cannot be found in the library*, but by the means of an inter-library loan can get them. In this sense, the county library plays the role of an intermediary institution.

- Users who are juridical persons

o   *institutions, organizations, associations, economic agents* etc. At the same time, press institutions, foundations, various organizations turn to the collections of the County libraries for specialized informational and documentary resources, with retrospective value, as well as to other specific products and services.

- Librarians and other public libraries

o   In this case, the County libraries have the function of methodological coordinators of the public libraries, being a provider of services and products for this type of users, as well.

The role of the County library as evaluator of scientific information is more evident with the occasion of various workshops or seminars in which pupils, students, but also their teachers are involved. In general, approximately half of the readers are pupils and students, and this proportion can be also easily retrieved in the participation to workshops and seminars organized by the County libraries. As an example, in the case of "Ion Heliade Rădulescu" Dâmbovița County Library and in the frame of the EU FP7 project entitled: "*IRRESISTIBLE - Including Responsible Research and Innovation in Cutting Edge Science and Inquiry-based Science Education to Improve Teacher's Ability of Bridging Learning Environments*" several workshops was organized as non-formal activities, having as main themes different activities related to *Meeting the Nano-World*". Beside the effort made by the researchers and teachers who prepared and promoted those workshops, an important contribution was done also by the librarians who searched and presented the most suitable books, articles or documents which can be found in the library, regarding the chosen thematic area, after a fine process of evaluating the scientific information.

4. Results and discussion

Referring to pupils, it is obvious that they are the main consumers of the information, being also the most active users of the County library. As an example, in 2015, the number of active users (who came to the County library for document loan services or study in the reading room) was 9183**.** Out of them, a number of 3143 persons are newly-registered users. In this context, the number of active pupils was 4055 (44%), 928 being newly-registered users (30%).

Figure 1 illustrates the predominance of the active users, by occupation. It can be easily seen that pupils take a big slice in the diagram, having a great presence - as readers - in the life of the library. According to their occupational status, among the active readers, the pupils (69.75%) are followed by university students (10.86%), intellectual professional people (8.52%), unemployed people (2.62%), retirees (2.30%) etc.
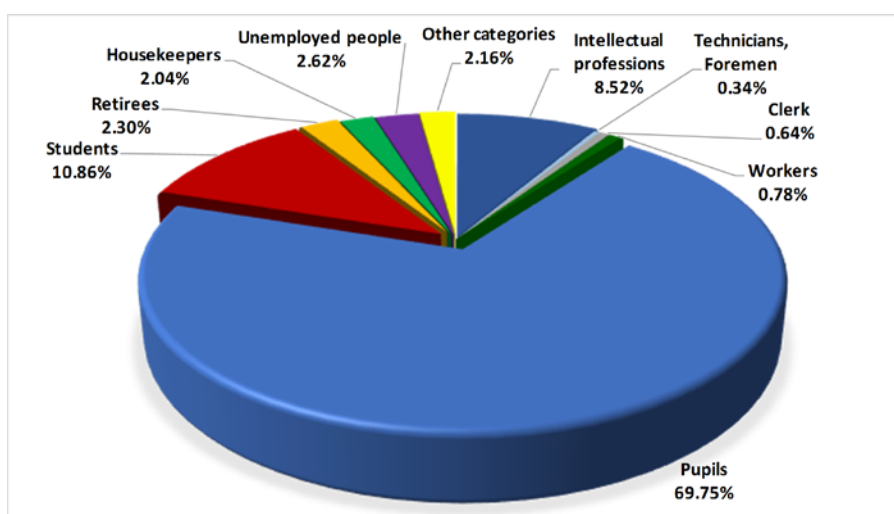
Fig. 1. The users' predominance by occupation

More than that, concerning the age of the users (Fig. 2) who came in 2015 to the library, the statistics highlight that most of them are under 14 years old (44%) and over 61 years old (23%). Once again, the pupils proved to be the main consumers of the information, becoming the main target group addressed by the library.
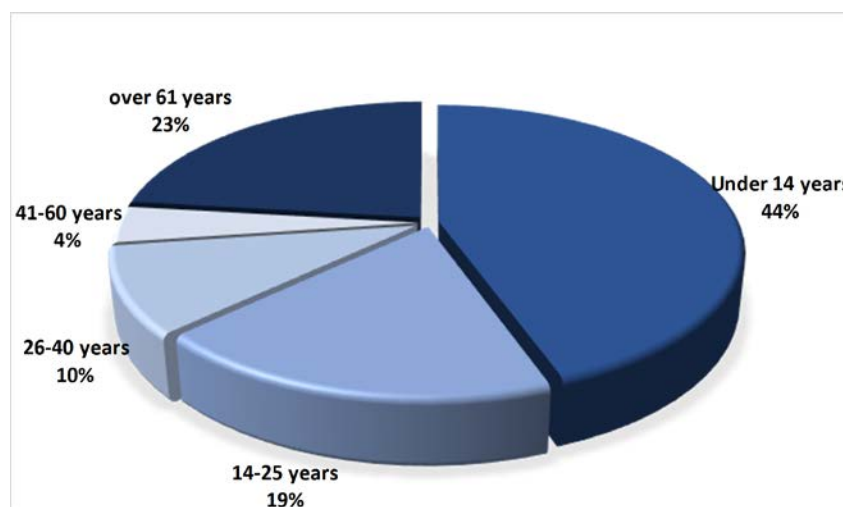

Fig. 2. The users' predominance by age

Taking into account the previous facts, it was normal to propose and prepare a series of workshops dedicated to pupils. In this respect, having the IRRESISTIBLE Project as principal mean for organizing the non-formal activities in the County library - with the declared aim to design activities that foster the involvement of young students and public in the process of *Responsible Research and Innovation* (*RRI)* -, more than 300 pupils under 14 years old were called to participate in several workshops dedicated to the *Nano-World* topic. Figure 3 illustrates the measure in which the pupils perceived the workshop topic as important for their scientific knowledge. As presented in the figure, there is an important proportion (80%) that considered that *Nano* issues are important in a *very great* and *great measure*.
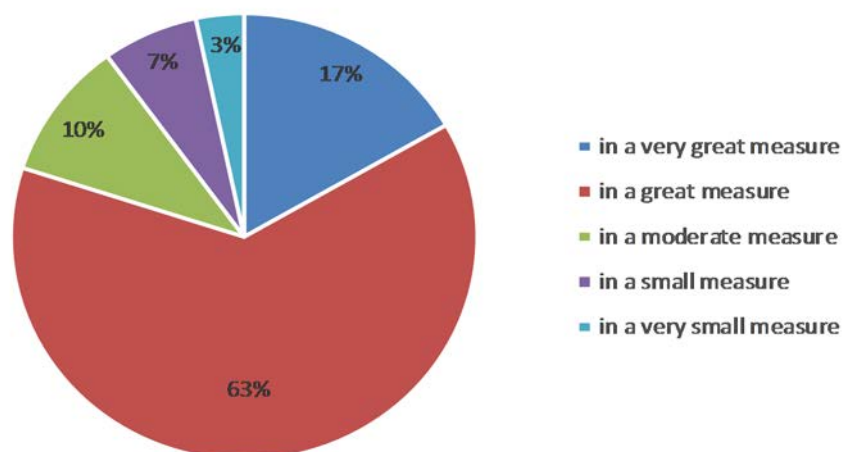
Fig. 3. Pupils' feed-back concerning the workshop topic as important for their scientific knowledge

During the workshops, near printed materials, small experiments and educational video-clips (presented by the project researchers and educational experts), the pupils were introduced in the written world of publications related to *Nano* issues. The librarians had the role to select and evaluate the scientific information, being also the main vector for transferring the knowledge. Several books and scientific articles were introduced, but everything was done coming to the pupils' level of understanding, being adapted to their age. Having the status of novelty, discussions around *Nano* issues were held after the presentation and connections with the previous knowledge (a part of it also gained in the library) were realized. In this sense, figure 4 illustrates the measure in which the pupils were able to find out links with their previous scientific knowledge. Here, even 50% considered that they had that capability, it remains an important proportion (other 50%) situated in the zone of *moderate measure* or *small / very small measure*. This means that the transfer of new knowledge (especially for the topics which are not part of the school curricula, as *Nano* issues) has to be considered with prudence, on a gradually basis, making appeal and posing questions that could easily introduced the content in strong relation with their previous scientific knowledge. On the other hand, the librarians must know very well the actual content of the school curricula, in order to select and evaluate the proper information to be presented to pupils. In addition, the role of multimedia must not be ignored. Matters related to *Nano* issues - where the things are happened at the 10^{-9} meters' level) can be easily explained using educational video-clips, overlapping explanations and further information.
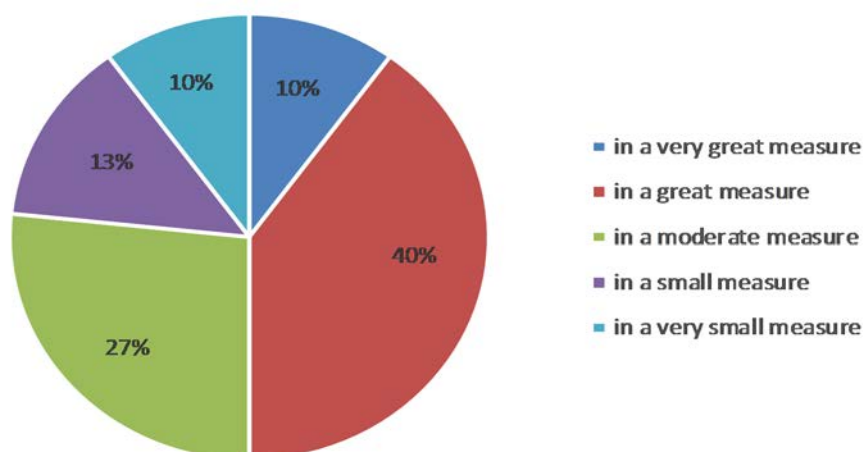
Fig. 4. Pupils' feed-back related to the measure in which they considered being able to make connections with their previous knowledge

5. Conclusion

The County libraries have a major role on guiding the pupils in the process of retrieving the most useful information. As the pupils represent the most active readers, their involvement in scientific workshops organized in libraries (as non-formal activities) become crucial for making them to understand cutting edge scientific issues, as *Nano* ones. In this respect, the librarian plays an important role, becoming a key person on selecting and evaluating the scientific information.

But the direct involvement of the librarian during the workshop activities is not an easy task. In addition to the selection of the relevant documents, books or articles, the librarian must know the school curricula and related contents in order to be able to raise the pupils' interest for science, by making connections with the pupils' prior knowledge, motivating them and involving them in educational quizzes or providing additional information using multimedia. The case of the IRRESISTIBLE workshops proved to be suitable examples in this sense. On the other hand, the young students' *thirst for knowledge* have to be satisfied by all the educational stakeholders who act in non-formal education. Its importance became more and more obvious, especially during the activities organized yearly, during the week: "*School, in another way*: *To know more, to be better!*".

Acknowledgements

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