# School libraries in Spain: A study on the current state of the issue.

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The paper will present the results of a field study accomplished during the course 2004-2005 at Spanish school libraries (2005), where the search main purpose was to gather and analyze data on seven dimensions: its role in the school; installations: equipment and technologies; collection; staff; management and operation; uses and users; evaluations. The study concludes that, since the last report, school libraries have improved in equipments and collection but this improvement does not match with a bigger and better employ. Another aspect to point out is the scarce use of non-printed material and, specially, Internet.

School libraries. Spain.

# **Justification of the Study and Methodology**

This paper will present and comment on the methodology and results of the field study on school libraries conducted under the direction of Ines Miret and Alvaro Marchesi and carried out in 2005.<sup>1</sup>

Despite the fact that in the last decade various projects, regional in scale and oriented towards diagnosing the school library situation in their respective territories, had been carried out, there was no quantitative study in Spain about these libraries that updated the data of the only one conducted up to the moment (M. Baró and T. Mañà, 1997)<sup>2</sup> and offered a wide vision that dealt with the new realities faced by Spanish school libraries. For this reason, the study considered the following objectives:

• Offer an updated vision of school libraries nationwide through analysis of those aspects in which state libraries continue to be in deficit, potential progress, and aspects that may require priority attention in future involvement.

- Complete the evaluation procedures proposed thus far, combining quantitative study with qualitative procedures to obtain and contrast data.
- Incorporate research on the collection of actors who intervene in the creation, development, and use of school libraries: school administrators, library heads, students, and teachers.
- Consider new evaluation criteria, especially regarding effective library use by students and teachers, as well as use of digital information sources and other technological resources (resources, training offered and received, uses).

To plan the methodology and reach of the study, other studies with similar scopes published in recent years were taken into account.

- Quantitative studies regarding the requirements and operation of school libraries, designed to periodically analyze their development. Among these, those projects carried out in the United States by the Department of Education and the National Center for Education Statistics (2004),<sup>3</sup> those initiated by the Chartered Institute of Library and Information Professionals of the United Kingdom (2002),<sup>4</sup> and those conducted by the National Library of Canada (2001)<sup>5</sup> are all worth mention.
- Studies that aimed to research the impact of school libraries on students' learning. M. Lonsdale (2003)<sup>6</sup> in Australia and Williams, Wavell and Coles (2001)<sup>7</sup> in Scotland have conducted far-reaching studies in this area through the analysis of different student abilities.
- Self-evaluation tools for educational centers, aimed at self-diagnosis, understanding libraries as an essential resource in the allocation of a high-quality educational service. The Scottish government, in the initiative How Good is Our School?: Self-evaluation Using Performance Indicators.<sup>8</sup>

The study was conducted with a significant sample of 401 educational centers, distributed in all the autonomous communities; in public, private, and semi-private (partially subsidized by the public education system) schools; and in the primary, secondary, and baccalaureate educational levels. In total, the opinions of 3,848 teachers, 16,056 students, and the school administrators and library heads in each of the centers were obtained.

In order to obtain the quantitative data, various tools were devised and utilized. Thus, a questionnaire intended for the school administration, another for those in charge of the library, and one for teachers, of all grades and subjects, were devised. Additionally, two questionnaires were developed to obtain the students' opinions, with different wordings adapted to each student group, one for students in the fourth year of primary school (10 years old), and another for students in their sixth year of primary school (12 years old), third year of secondary school (14 years old), and second year of baccalaureate (17 years old).

To obtain data on non-quantifiable aspects such as the atmosphere and conditions of school libraries, interviews and direct observation of the libraries were used. A guide for interviewing the school administration and an observation protocol for evaluating the circumstances of the libraries' material conditions were developed, with the purpose of obtaining comparable information. These tools were tested in a pilot study on some centers with different realities and dimensions in different parts of Spain. The data was obtained by a group of people specifically prepared through training sessions on the procedures for data

collection in which the criteria and points of view of the visitors were standardized to eliminate subjectivity to the greatest degree possible.

Given that the idea was to take a complete X-ray of our school libraries, the set of variables that affect libraries' operation -some structural in nature (associated with space, equipment, and staff) and others having to do with operation (management, activities, and services)- was taken into account, as were the uses and assessments awarded to them by the actors associated with the management, development, and use of the library: school administration, library workers, teachers, and students. The evaluation considered seven dimensions, each one incorporating specific assessable aspects.

## Dimension 1 The Library in the Educational Center

- Existence or lack of library.
- Knowledge on the part of its users.
- Relationship with other libraries (classroom, departmental) and functional dependency.
- Library's history (years in operation, innovation and improvement projects, perceived development).
- Library design (components, people in charge, degree of satisfaction and impact).

## Dimension 2 Facilities, Equipment, and Technology

- Location, access, and signposting.
- Surface area and capacity.
- Layout and conditions for reading and working.
- Telecommunications and computer equipment.
- Safety.

#### **Dimension 3 Collection**

- Type and quantity of documents.
- Aptitude for meeting different needs.
- Origin of content.
- Selection agents, criteria, and sources.
- Criteria for arranging the documents.
- Content upgrades.
- Technical processing.
- · Accessibility.

#### **Dimension 4 Staff**

- Profile of the library head (educational qualifications, degree, and areas, amount of time in the position, appointment criteria, functional dependency, initial training, development, and perceived training needs).
- Commitment.
- Other staff with duties in the library (profile and commitments).
- Library committee (existence or lack thereof, composition, tasks).

# Dimension 5 Management and Operation.

- Budget (amounts, entities that provide economic resources, system and people in charge of management).
- Schedule (hours of operation during school and non-school hours, weekly hours, scheduling methods for students).

- Coordination between library heads and teachers.
- Relationships with other libraries and information centers.
- Participation of the educational community.
- Evaluation and statistics.

#### Dimension 6 Uses and users

- Student visits (frequency, times, and methods).
- Teacher visits (frequency and methods).
- General services and information services.
- Loans.
- Specific programs offered and used.
- Activities undertaken by students.
- Activities undertaken by teachers.
- Activities during school and non-school hours.
- Training received by users regarding the use of school libraries.
- Strategies for giving incentives for library use (strategies employed by teachers, strategies reported by students, perception of the library head).
- Strategies for the spread of library use and materials.

#### Dimension 7. Assessments

- Level of satisfaction in performance of the library's principal functions (principal achievements).
- Importance given by the educational community.
- Desired improvements.

# **Principal Results of the Study**

Below we will present the principal results on the resources available in libraries, with the intent of describing what resources exist and what the principal shortages are, how these resources are administered, and how they are used in daily practice in those centers examined in the study. <sup>10</sup>

- 80% of educational centers have a central library
- 28% of libraries have more than ten documents per student
- 8.8% of libraries have 60% informative documents in their collection
- 80% do not have information services
- 51% of centers do not have a specific budget for their library
- 8.7% of libraries have sufficient technological resources
- 62.8% of library heads work in the library less than one hour per day
- 40% of teachers use the library seldom or never
- 50% of students never use the library

#### The Library in the Educational Center

One important piece of information for understanding the situation of Spanish school libraries, preliminary to more concrete analysis, is that 20% of the centers studied do not have a centralized library, although many of them have independent classroom libraries and/or departmental libraries. The remaining 80% evidently have a central library, even though the study highlights the limitations that would have to be applied to the use of this concept,

taking into account essential factors such as organization, quality, and quantity of items in their collection or services they offer.

## Facilities, Equipment, and Technology

80% of the centers that have a central library also have facilities that strictly follow Spanish legislation as far as surface area, but upon analyzing the parameters of location, access, and signposting in the library and capacity and distribution of space, the results indicate that between 65% and 75% of libraries have "partially adequate" spaces and installations that are not very flexible and not organized in a way that allows them to have differentiated areas for different uses and the performing of simultaneous activities. In this aspect, the external observers were very negative in their evaluation: only 15% of libraries have adequate conditions for reading, studying, group work, looking up items in the catalog, ..., although, in comparison with the 1997 study, this is one of the aspects that has improved most perceptibly and the centers have made an important effort to create an acceptable environment that enables work as far as lighting, isolation, noise, decor, and general maintenance conditions. However, the percentage of centers that give other uses to the libraries' space is still very high, as only 20% of centers devoted it to its own functions; the rest shared it with other uses, and it is worth pointing out that 17% of libraries are used as a space for students who cannot stay in the classroom due to poor discipline.

In any case, the abysmal assessment that library technological equipment receives is worth mention. Only 8.7% of them had adequate equipment (up-to-date computers with an internet connection and access to electronic resources, for the library staff as well as for the users). Of the remaining centers, over 50% had a maximum of one computer for the exclusive use of the librarian, and did not have internet connection or access to electronic resources from the library.

#### Collection

Library collections are very far, both quantitatively and qualitatively, from being able to cope adequately with students' reading, information, and learning needs in all areas. A significant proportion of educational centers do not fulfill the requirements established by the IFLA as essential for the configuration of their collections: over 20% of libraries do not have the minimum proposed amount of resources (2,500 volumes); 70 % of them do not have the minimum recommended number of books per student (10 volumes per student); and 90% of centers have unbalanced content between fiction and academic materials (given that, according to international standards, 60% of the content should be on knowledge and information). Nor do the collections take into account that every day there is a greater number of students who have special learning needs or who speak a language of a different origin from that of the co-official languages in each autonomous community. Finally, the data show that libraries do not grow at a sufficient pace and that they are not updated, principally due to the fact that over 40% of them do not have a budget to update content. Thus, 40% would acquire less than 100 volumes each year, and more than 50% failed to periodically remove obsolete or defective documents. Contributing in large part to this lack of updating is the fact that in over 60% of the libraries, electronic documents and internet resources are not utilized to minimize these deficiencies.

However, the problem is not exclusively numerical, and it would be worth discussing the relative quality and usefulness of the collections as well, since 80% of the centers utilize commercial information sources before turning to specialized sources in acquiring or

incorporating new content. This fact is especially meaningful since in Spain there are no centralized support services for school libraries, which means that each library must individually perform the selection and materials acquisition processes.

Nevertheless, compared to 1996, the study also showed that in the past few years libraries have permanently incorporated other supports and formats, apart from printed books, and 65% of them on average now include magazines and press, videos, slides, music, and digital discs in their catalogs, even though they still have not incorporated internet resources into their collections.

The only aspects of school library operations that have experienced an advance in the last ten years are those related to the organization and technical processing of materials. This positive evolution reflects a tendency towards the homogenization and standardization of the libraries' technical tasks (greater use of the Universal Decimal Classification as the organization system, cataloging with normalized systems, OPAC for questions, etc.). In this time, the proportion of computerized libraries has nearly doubled, now reaching 60% compared to 36% ten years ago.

#### Staff

The staff is perhaps the most deciding resource and the one with the most influence on library activity. Having a well-trained library head, with the necessary commitment and stability, proves to be essential in guaranteeing an adequate service. Nonetheless, the data from the study indicate a reality far from this requirement. In 82% of the centers, the responsibility of the library goes to teachers at the center, and very large proportions of them do not have the necessary training (only 29% have some technical training and 27% claim to have been trained in children and youth reading and literature). Only 8% of centers have a professional librarian. The appointment of the library head depends primarily on the criterion of availability of schedule of the teachers and on very few occasions are specific training and previous library experience considered. But perhaps the most striking piece of data is that on the assignment of library tasks, which in over 60% of cases did not even reach five hours per week and only in 15% exceeded 11 hours.

#### Management, Planning, and Evaluation of Resources

The lack of a library project plan, incorporated into the general planning of the center, causes (or prompts) the existent resources to not always be administered in a suitable and coordinated way. Although over 60% of the centers claim to have an annual plan, the truth is that this plan is not developed completely (Inadequate or Incomplete in 60% of cases) and normally, no library evaluation mechanisms are anticipated. Hence, around 60% of libraries do not compile any statistical data on their operation. In any case, library heads and teachers alike state that there is no more or less regular relationship between the two. In this sense, the lack of information for the librarians on the programs developed in the classroom, the lack of common meetings, and the inexistence in the majority of the centers (over 75%) of a support committee for the library made up of various members of the school community are significant.

The shortage of economic resources, when they exist, constitutes another element that determines the inadequate situation of school libraries. The data indicate that over 40% of centers have not had a specific budget for the acquisition of content in the last three school

years. It must be added to this that over 30% of them have had budgets of less than 300 euros per year, and that only 15% of the libraries have an annual budget of over 700 euros per year.

The results obtained indicate that libraries do not have the resources necessary to stay open for a significant number of hours in a school day or outside of school hours. Around 50% of primary school libraries are open less than ten hours per week, while in secondary school libraries the services are broader (66% of them are open over 20 hours per week). Only 40% of centers are open outside of school hours, where these services are more frequent in private or semi-private schools (55% of them) than in public schools (39% of primary and 28% of secondary schools).

The study paints a picture of very isolated school libraries that function independently of local library networks with scant relationship with public libraries, which only 28% carry out. Nor is there a noticeable relationship among school libraries themselves, which only occurs in 10% of cases.

In light of the situation, it is not surprising that over 60% of school administrations consider that there has been no development in the library in the past four years.

#### Uses and Users of School Libraries

One of the most revealing pieces of data from the study is based on the use that school libraries have, regarding both frequency and hours of use. In this sense, students in the third cycle of primary school (10-12 years old) are the ones who go most often to the library: over 70% of them go at least once a month, and among those, close to 50% go once a week. However, this practice does not seem to have continuity, since students in secondary school and baccalaureate apparently use the library very rarely: around 50% of them do not even go once a month and 26% do not ever go to their school library. This data is confirmed by teachers, who claim in 75% of cases not to go to the library with their students.

Regarding the hours in which the libraries are used, the study highlights the fact that, in very high proportions (around 50%), students in all educational levels do not ever go the library during class time, this being the time period in which the library is most frequently in service and that in which it can be most useful as a resource center for learning. Also in this case, students in lower grades are the ones who use it the most during school hours.

As far as teachers are concerned, only 9% of them use the library to work with their students or teach a class in it. Nor does it seem that libraries are used outside of school hours, as around 60% of the centers do not open their libraries when classes are over. In this way, the students who utilize this service outside class hours are few (only 27%), but whenever it exists, students use it.

Certainly, given the analyzed conditions, Spanish school libraries cannot offer the whole range of services that the educational community requires, for which it is not surprising that nearly all their activity is concentrated on borrowing services: close to 80% of centers have this service, borrowing services for classrooms being somewhat more frequent than those for individuals. Loans are offered and used more in primary education centers than in secondary education centers: over 65% of primary school students use them while only 40% of secondary school students do. Other services, such as access to information and technology, only exist in around 20% of centers, and less than 10% of students claim to use them. Information services (bibliographies, indexes of magazines, news bulletins, reading

guides, etc.) do not exist in over 80% of centers, and, in the cases in which they do exist, are barely used by teachers.

The most frequent activities, in the opinion of students, are looking up materials, reading, borrowing, doing homework (schoolwork), and studying with notes. In any case, these activities are undertaken by not very high percentages of students (between 40% and 60%). Attendance in scheduled activities (promotion of reading, training on library use, or training in the use of information sources, etc.) and use of digital media to do projects do not seem to be reflected in significant proportions of their responses (always less that 10%). Primary school students participate in a greater variety of activities (such as meeting authors, thematic presentations,...) compared to secondary school students, who tend to use the library more as a space (for studying with external sources or their own notes) than as a service.

Not only are libraries not incorporated in students' school activities, but also teachers do not use them as a resource to do projects or other professional consultations either (40% of them claim to not ever go to the library for these uses). However, more worrying still is the fact that they are not used as an instructional resource, and that teachers grant so little importance

This would explain why it is precisely students from 8 to 10 years of age who feel most autonomous in libraries (70% claim to be oriented, know their rules, and have been trained to use them). In higher scholastic levels (secondary school and baccalaureate), students feel less trained and express having important problems with essential matters of use: 71% of them claim to not know how to use the catalog, 49% say they do not know how materials are organized, and 41% do not know how to borrow.

On the other hand, this trend is reversed when students are asked about their ability to independently use information: over 50% of secondary school and baccalaureate students state that they know how to use the various sources, whether print or electronic, even when a large majority of them (48%) express that their teachers did not teach them how to use them, but rather that they learned on their own, with friends, or with family. In any case, it is important to consider that in all the analyzed sources --and in the different educational levels-there are still important proportions of students (over 35%) who state that they do not know how to use sources essential for school learning.

#### User Satisfaction

In spite of the precariousness of school libraries reflected by the data obtained, it is surprising that school administrations, library heads, and the teachers consider, in high percentages, that they obtain satisfactory results from the library, promotion of reading habits, access to information, and training on information use, even when the level of usage is very low. Administrators are the ones who give the most favorable evaluations, followed by library heads, and finally, teachers are somewhat more critical.

The only users who show themselves to be openly dissatisfied with essential aspects of library operation are secondary school and baccalaureate students, who in a great majority (between 75 and 90%) evaluate negatively the help received for doing projects, proposed activities, audiovisual resources, and technology in the hours that they can go to the library.

# In Summary

Although the study presented a relatively optimistic assessment as far as the spread of school libraries is concerned, it is also true that it showed their limitations in many other aspects. In particular, the lack of adequate equipment for pertinent library functions and the lack of specialized staff stand out as notable deficiencies and are principal causes of the low quality and variety of services offered by libraries to the educational community. In light of the data contributed by the study, it is possible that said deficiencies do not occur in all cases or at all educational levels.

The precariousness of Spanish school libraries reflects a collection of factors related to the educational system's organization itself as well as to instructional methods. Some of the causes of this precariousness are intrinsic and lie in the school itself, while others are extrinsic in character and have their roots in the belated development that libraries have had in our country and in the slow professionalization of the librarian profession.

Among the intrinsic causes, it would be worth mentioning the generalization of an obsolete model of school library focused almost solely on the promotion of recreational reading, without a true instructional function and without support from instructors, dissociated from IT technologies that, in many cases, have been introduced into the school apart, and completely disconnected, from libraries, denying libraries the consideration as an entrance into knowledge. To this model of a functionally limited school library, it would be worth adding a resistance to change in pedagogical model on the part of the teachers, who furthermore have no education on the instructive use of the library and a total ignorance of the role that the library can play in students' acquisition of information skills. Teachers do not incorporate the use of libraries and their resources because the textbook continues to be, in a very high proportion of cases, almost the sole teaching material. A change in teaching methods in all subjects would give a new perspective to the library and would unavoidably entail the demand for more and better resources. For this reason, school libraries do not quite find their role in elementary schools or high schools. However, the school community does not seem to consider the library an essential element for education either, although it does demand sports fields or computer labs.

Among the extrinsic causes, we could highlight the lack of recognition of the school librarian figure in the ordering framework of the educational system. This implies a lack of professionalization and the inexistence of specific training, which cause the current models to tend to be perpetuated. In any case, the lack of recognition for school librarians entails a completely insufficient time commitment and a temporal precariousness so substantial that it even separates its function from people who have prepared for it. Another cause of inadequate development of libraries is the inexistence of specific budgets intended for constructing collections, which at the present time are ineffective. On the other hand, the lack of true networks of school libraries with their corresponding support services must be mentioned, which results in a poor and very costly management in terms of time and economic resources of these libraries. This deficiency, nevertheless, derives in part from the fact that the library systems in this country are still in the consolidation phase. <sup>11</sup>

The study ended with some recommendations aimed at improving the situation of school libraries in keeping with the purpose of the study to serve as an instrument for analysis and reflection to establish a performance framework with concrete measures and initiatives.

To provide the recommendations with the most objectivity possible, the results obtained were submitted for consideration to a group of experts composed of a score of people with different profiles, linked in different forms to the school library field: professionals with responsibilities in the coordination of regional or provincial plans, specialists in the academic world, representatives of school library associations, work groups, specialized magazines, seminars, and others. The recommendations were centered on:

- Reinforcing national and autonomous community norms for the complete incorporation of the school library into the educational system and the library system;
- Incorporating the contents related to reading and document education in all curricular areas;
  - Creating coordinating centers or technical support services for school libraries;
- Guaranteeing, on the part of educational administrations, the presence in every educational institution of a committed school librarian with adequate technical and pedagogical training
  - Conducting periodic diagnoses on school libraries in Spain.

At that time, it seemed essential to have a wide, coherent intervention program with lasting budgetary allocation that would simultaneously influence the set of requirements for school library operation, which in any case have been indicated by international organizations as unquestionable conditions for their development for decades.

In this sense, it seems that the recommendations that were proposed as a culmination to the study were in part inspired by the performances of recent educational administrations. Thus, the 2006 education law considered for the first time the obligation of a school library in all educational institutions, and a model of library that considers the promotion of reading but also the access to information and acquisition of skills for its use is taking shape. In compliance with the law, funding addressed to libraries of a total of 122 million euros, 61 of which come from the national government and an equal quantity from the autonomous communities, has been assigned. In any case, in the last few years different institutional plans have been initiated, both nationally and autonomous community-wide, such as that of school library improvement that considers a contest for good practices and innovative experiences, rewarded with special economic resources. In addition, numerous reading promotion programs have been initiated from the different administrations (local, regional, and national) that consider the school library the cornerstone of such projects.

#### References

- <sup>1</sup>Las bibliotecas escolares en España. Análisis y recomendaciones. ['School Libraries in Spain. Analysis and Recommentations] Direction: Álvaro Marchesi, Inés Miret; coordination: Fundación Germán Sánchez Ruipérez. Madrid: Fundación Germán Sánchez Ruipérez, 2005. 342 p.
- <sup>2</sup> Situación de las bibliotecas escolares en España. 1995/96. ['The Situation of School Libraries in Spain. 1995/96'] Study conducted by the ANABAD and FESABID associations, under the direction of M. Baró and T. Mañà. A summary of the conclusions of this study can be viewed in "La situación de las bibliotecas escolares en España: estudio a nivel nacional" ['The Situation of School Libraries in Spain: a national-level study'] coordinated by ANABAD and FESABID, Educación y biblioteca, ['Education and Library'] Vol. 8 (1996), #71, p. 7-16.
- <sup>3</sup> National Center for Education Statistics. *The Status of Public and Private School Library Media Centers in the United States 1999-2000*. 2004
- <sup>4</sup> CILIP. Survey of Secondary School Libraries. Main Findings. A Report Prepared for CILIP. October 2002.
- <sup>5</sup> National Library of Canada. *Elementary and Secondary Schools: The Role, Challenges and Financial Conditions of School and School Library Resources in Canada. A Report Prepared by Michel Durand and Maria Waltmann Dashko*. Canada: Culture, Tourism and the Center for Education Statistics. September 2001.
- <sup>6</sup> M.Lonsdale. *Impact of School Libraries on Student Achievement: a Review of the Research*. Australian Council for Educational Research, 2003.
- <sup>7</sup> D.Williams, C.Wavell and L.Coles. *Impact of School Libraries on Student Achievement and Learning. School of Information and Media. Faculty of Management.* Aberdeen: The Robert Gordon University, 2001.
- <sup>8</sup> Scottish Consultative Council on the Curriculum (SCCC). *Taking a Closer Look at the School Library Resource Centre: self-evaluation using performance indicators*. Dundee: SCCC, 1999.
- <sup>9</sup> In Spain, compulsory education is limited to the primary (5 to 12 years) and secondary (12 to 16 years) education stages. Baccalaureate studies, which are not compulsory, are undertaken between 16 and 18 years of age.
- <sup>10</sup> In Spain there are 17 autonomous communities that have sole authority as far as education within their territories. Nonetheless, the national government controls general and common regulations, such as the education law. Thus, the situations of school libraries vary greatly according to their territories. The data in this study are significant for the country as a whole, but not for each autonomous community.
- <sup>11</sup>Library public reading systems depend on the governments of the each of the 17 autonomous communities. This entails different traditions and, overall, different policies that translate into very unequal results. In some communities, school libraries are considered within public reading systems, which does not occur in others.
- <sup>12</sup> Organic Law 2/2006, May 3, of Education (LOE). Official Bulletin of the State (BOE), #106, May 4, 2006.
- <sup>13</sup> A summary of the reading promotion and school library incentive programs can be found in: José Antonio Merlo. *Bibliotecas públicas y promoción de la lectura*. ['Public Libraries and Reading Promotion']. Electronic version: http://exlibris.usal.es/merlo/escritos/pdf/murcia06.pdf

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# **Statement of Originality**

This statement certifies that the paper above is based upon original research undertaken by the author and that the paper was conceived and written by the author(s) alone and has not been published elsewhere. All information and ideas from others are referenced.