

## Chapter 6

### Italy National Institute of Statistics: emphasizing the metadata

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#### 6.1 Introduction

The Istat web page is ([www.istat.it](http://www.istat.it)) and the page for statistical literacy is called "For students" (per gli studenti) ( <http://www.istat.it/servizi/studenti/> ). Since 2002 it provides students with a guide to data and methodologies adopted at national and international level. The goal is to make the statistics familiar to the students through the co-operation between the school and the university. Istat makes available tools for understanding and using statistics and provides information about how the activities can be carried out. Teachers and students can find several types of educational resources. These educational resources are both useful for teachers in order to prepare the lessons in the classroom, and for students in order to study a lot of themes.

The approach adopted when the student's web page was created is twofold. The Italian national statistical institute, working in co-operation with professors of statistics, scientific societies and experts in web communication, stressed two aspects: i) awareness, not only of when and how to use statistical data, but also of how to be discerning about sources, their quality and reliability; ii) the importance and the difficulty of using plain language to deliver statistical content without losing scientific precision.

To achieve good results when collaborating with other institutions in Italy, it is necessary to make use of the polarization of skills within every team. Each expert has to give up a little turf and contribute knowledge to attain a common outcome worth communicating. This kind of co-operation is needed because of the Italian cultural tradition; there is a cleavage between humanities and sciences and priority given to classical studies. On the other hand, the information society asks for a strong integration of competencies and skills and the above dualism is a hindrance to cultural and professional growth.

The approach quoted above is adopted in every kind of initiatives: from the tools provided (as will be illustrated) to the meetings organized. The stress is always put on the ability to understand data through the use of metadata. Often, the teachers carry out a survey in their schools and then ask for rating and comparing; the approach adopted allows Istat researchers to give priority to description of the methods used, the classifications, the definitions and only after that the results of the survey. As the reader will notice, this results in an educational product in Istat very different from the product of the other statistical offices described in this book. Istat reflects the nature of Italy.

## **6.2 Some details about the Istat experience and the organizational and logistic issues of the educational project**

Istat created a small unit (three persons) in 2001 with the goal of planning and carrying out initiatives for the improvement of statistical literacy. These persons were skilled in different fields: statistics and communication. In particular, the basic idea was - and is - that in order to improve statistical literacy you need to communicate in a plain and simple language, and the more rigorous and precise is the content the simpler should be the communication.

This unit organized the “Per gli studenti” work both on the basis of its own efforts and through the long experience of the Istat co-operation, also at an informal level, between university and NSO. So when an initiative had to be planned, this group involved teachers and researchers from the university. Similar cooperation existed with the Italian Statistical Society. The initiatives could be carried out both at informal and at institutional level. For example, the Census at school was carried out in co-operation with the Italian Statistical Society and some teachers from the Ministry of the Education, through a working group whose members were Istat and the Italian Statistical Society researchers. The *worth of the data (Il valore di dati)* has been made by Istat and a group of teachers from the university.

One of the main aspects in order to promote this kind of initiatives involves the financial costs in terms both of the skilled people involved and the technological resources needed. The lack of funds can be overcome through different solutions: people, sometimes, work at a voluntary level because of their interest in developing these issues and this is important also if not enough. Sometimes the projects are partially financed (e.g. The worth of the data was partially financed by the Ministry of Education within a competition for the improvement of scientific literacy).

Maintaining the program is not easy because the people involved cannot work in these activities full time. As said before, the resources are not sufficient to maintain the program because they are shared between different activities. As a suggestion to the sister NSOs: if you plan to carry this type of activity, you should start from small and limited initiatives, in particular not expensive ones; you can involve people with different skills and look for the widest co-operation you can obtain.

## **6.3 The initiative carried out for the Census of Population 2001**

### **6.3.1 CensusatSchool**

This project started in 2001, the year of the Census of the population, in primary and secondary schools, and was carried out in co-operation with Italian Statistical Society, the Ministry of Education and the Italian Mathematical Society.

The tools provided are two Guides (for primary <http://petra1.istat.it/censb/el.pdf> and secondary <http://petra1.istat.it/censb/med.pdf>) which help to understand concepts, definitions, the basics of statistics and the history of the census.

### 6.3.2 Tools provided in the section called [Binariodieci](#)

#### 6.3.2.1 Statistics through Examples

([http://www.istat.it/servizi/studenti/binariodie/Stat\\_per\\_esempi/index.htm](http://www.istat.it/servizi/studenti/binariodie/Stat_per_esempi/index.htm)) is an online handbook which explains how to use statistics, how the information is collected and how the data are represented through simple examples from every day life, such as the reading of the newspaper, how to organize the results of the football games and of the other sports and how to calculate the money value. The chapters are available in word and pdf format. Here is the index

1. [Un gioco: ritrovarsi nelle statistiche ufficiali](#) (How we find ourselves in official statistics)
2. [Una lettura statistica dei giornali](#) (Reading the newspaper)
3. [Uomini, donne, sport](#) (Men, women, sport)
4. [Quanti eravamo, quanti siamo, quanti saremo](#) (How many we were, how many we are, how many we will)
5. [Il campionato di calcio italiano di serie A](#) (The A Italian football game)
6. [La pesca sportiva in acque dolci](#) (The fishing in the lake)

#### 6.3.2.2 How to use excel with statistics

An online handbook which explains how to use excel. The inspiration came from a similar product, “Alea”, prepared by the National Institute of Statistics of Portugal. There is also a PowerPoint version in order to facilitate the use for non expert students. After the Introduction the handbook provides also the Glossary and the Bibliography.

#### 6.3.2.3 The Worth of Data

This hypertext is a set of materials – accessible from Istat’s website – prepared to help students, the general public and non-expert readers to improve their use of statistics and directed at anyone interested in using numbers to describe real life situations and make decisions. The inspiration came from similar products prepared by international bodies and national statistical offices in other countries: in particular Canada and Australia (*Statistics: A Powerful Edge!*). This product is the result of a joint effort of national official statistics (Istat is an independent public research body and has a long tradition of interaction with the academia), the Italian Statistical Society and the world of education (universities and scientific societies), as a flexible set of tools for

understanding and putting to use statistical concepts and data. The emphasis is on awareness: the reliability and quality of sources, the application of statistical data and concepts to everyday situations, the meaning of data and their relevance.

*The Worth of Data* is not a course in statistics (each “leaf” is self-contained and can be understood without reading the previous ones), but may be used systematically. The modules and tools forming the hypertext lend themselves both to self-paced unassisted distance learning and to traditional learning settings (lesson in front of a class, workshop, seminar). The hypertext is organized in three sections, which outline possible paths in the exploration of statistics. The main contents are in the central column and are organised in four chapters (but keep in mind that the leaves are largely self-contained):

Using statistics to make decisions and evaluate policies (statistical data and decision making; statistics and equal opportunities; official statistics in Italy and in the world) <http://www.istat.it/servizi/studenti/valoredati/Cap1/Cap1.htm>;

The fundamentals of statistics: collection, production, dissemination (censuses; sample surveys; administrative sources; how data are collected, processed and disseminated) <http://www.istat.it/servizi/studenti/valoredati/Cap2/Cap2.htm> ;

How to rely on the quality of statistical data (principles and norms governing the activity of national statistical offices and international bodies; shared methodologies, classifications, definitions and standards; protection of confidentiality) <http://www.istat.it/servizi/studenti/valoredati/Cap3/Cap3.htm> ;

How to use statistical data (statistical measures; how to prepare tables and charts; how to write a paper based on statistical data) <http://www.istat.it/servizi/studenti/valoredati/Cap4/Cap4.htm> .

The side-by-side columns open alternative paths. The left one links to statistical information on a few main statistical areas:

Population: [http://www.istat.it/servizi/studenti/valoredati/Tavole/Tav\\_Popolazione.htm](http://www.istat.it/servizi/studenti/valoredati/Tavole/Tav_Popolazione.htm)

Short-term indicators [http://www.istat.it/servizi/studenti/valoredati/Tavole/Tav\\_Congiuntura.htm](http://www.istat.it/servizi/studenti/valoredati/Tavole/Tav_Congiuntura.htm) Labour

statistics: Prices: Environment...) each area is presented in a clear and concise way, before giving access to the actual data.

The right column gives the interested user the opportunity to link to other materials on statistical numeracy available on the web.

#### **6.4 Meetings and seminars**

Other activities carried out by Istat include the organization of meetings and seminars where Istat researchers present the activities, the surveys and the methodologies adopted, and where they stress the importance of metadata for a right understanding of the statistical information. The goal is to stimulate data awareness, the ability to understand statistical concepts; the ability to analyse, interpret and evaluate statistical information; the ability to communicate statistical information and understandings. Sometimes the teachers organize a survey in their schools and in the meeting they reason about the results and compare them to the results of the surveys carried by Istat

at national level. But, as quoted before, the researchers stress the centrality of the metadata vs the data, in order to achieve good skills in the use of statistical information.

## **6.5 Other issues**

Istat co-operates with the Italian Statistical Society in order to organize a National Competition for the best work, such as a research, an article or a study, in statistics. The collaboration includes provision to students and teachers of statistical data and a guide to the use of data and metadata. This year the Competition is about women and their condition in the Italian society.

Istat co-operates with the International Association for Statistical Education (IASE) within the International Statistical Literacy Project (ISLP), the International Project to improve statistical literacy, in order to let others know the experiences of countries in this field.

The Istat section devoted to students and teachers hosts material from other organization, such as Italian Commission for Europe. This section also provides links to other institutes or organization, useful for understanding statistics.