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## **Report on organizing the ROSE survey in Portugal**

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### **Rose team**

The Portuguese Rose team consists of Professor José Azevedo of Oporto University, Dr<sup>a</sup> Ana Noronha- Ciência Viva and research assistants Leonor Tato, Ana Isabel Couto, Joana Marques from Oporto University.

### **School system and science teaching**

The Portuguese school system has nine years of compulsory education. Children start at school at the age of 6, and are 14-15 when they leave. Compulsory school is divided into three steps: primary school with grade 1 to 4, preparatory school with grade 5 to 6 and secondary school with grade 7 to 9. The school is free and compulsory. Throughout primary education pupils progress is not automatic and they can be forced to repeat on grade 2 and 4 of primary school, and in each grade afterwards.

In the four first grades (grade 1 to grade 4) there is a subject called "Study the environment" and the contents is mainly taken from biology (plants and animals), geography and geology; ii) in grade 5 to grade 6 there is the subject called "Natural Sciences" where the content is mainly human body, environment and geography; iii) in grade 7 to 9 they have natural sciences (7 and 8) and "physics & chemistry" (8 and 9).

### **Translation**

After a first draft of the Portuguese questionnaire has been translated from English three different persons evaluated it in order to verify the accuracy of the translation as well as the phrasing of the questionnaire.

## **National questions**

We did not add any items for background variables, however four additional survey questions were included concerning the perceived importance and interest of the social sciences in relation to the “hard” sciences.

## **Piloting**

No piloting of the questionnaire was carried out in Portugal.

## **Official permission**

The only official permission needed was from each school. See below the description of the procedures.

## **Population**

The ROSE target population in Portugal was the cohort of 15-year old Portuguese pupils living in our country in 2004. As ROSE samples school classes and not individual pupils, this corresponds to grade 9, that means the grade level with most pupils born in 1989.

## **Sample and participation**

Twenty seven (27) schools were chosen from the database . Twenty-five (25) schools accepted to participate to the research and two schools (2) have answered negative. The twenty-five schools constitute a representative sample of all types of secondary schools of Portugal. As an attempt to secure a national sample and taking into account the dispersion of the population in the country we followed the regional proportions that polling studies normally use in Portugal.

The portuguese population is ethnically quite homogeneous, however in recent years some areas of Lisbon become ethnically divided, however as in National terms they still represent a very low percentage of the population we have not targeted specifically those schools. The statement of ethnicity was not required in the questionnaire so we do not have information concerning this variable.

We have had some missing responses and out of 570 pupils which have participated in the research (27 schools) we finally have had 554 pupils that have filled completely the questionnaires.

There may be some weakness in our sample due to issues described above, like missing respondents and “new” immigrants, but our overall impression is that the quality of the

sample is high. We believe that we can regard the sample being representative for the Portuguese target population.

### **Data collection in schools**

After the schools had been selected the principals or the teacher in charge of the science group of disciplines were contacted and asked if their school was willing to participate in the study and then to name a teacher to carry out the process of surveying one class at the school. Thus the principal and/or the teacher at the school selected the class to be surveyed and therefore took part in the sampling process. When making their selection they were asked to choose a “normal” class, thus not to carrying out the survey in a class that had been selected in any way.

Through these coordinators we could distribute one class set of printed questionnaires to each class. Successively as we received affirmative answers to our invitation, the class sets of questionnaires were sent to the coordinators at the schools.

With the questionnaires we attached a letter with some instructions and descriptions of practicalities for conducting the survey, like: which of the parallel classes that should participate, 45 minutes would be sufficient for most pupils, the school could preferably carry out the survey in a science lesson, the questionnaires should be kept unnamed and anonymous, etc.

From May to June 2004 all 25 schools had conducted the survey and returned the filled-in questionnaires.

One school had rules about parent’s acceptance and in this case the school were provided with a special letter for the kids to take home to their parents giving them an opportunity for their child not to participate in the research.

### **Feedback and experiences**

In several cases, the teachers who had administered the ROSE questionnaires included a short note with the returned questionnaires. The commonest comment was ‘too long’ but several others expressed the desire of knowing more about the results.

### **Coding (also of the open-ended I question)**

The coding of the “closed” questions was done by a team of two research assistants.

They coded directly into the SPSS empty data files that were distributed to all participants and according to the guidelines provided by "ROSE Handbook". In general they found the job interesting and very easy.

In some questionnaires, the respondents had obviously not taken the task seriously and they have written jokes, etc. or they haven't completed the questionnaires. These questionnaires were excluded from the sample.

In cases where only minor parts of the questionnaire were not satisfactorily filled in, the variables were coded with (missing). Otherwise the whole questionnaire was excluded from the SPSS file. We consider that the quality of the data file is of high quality standard.