

Using CensusAtSchool data to motivate students

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Imagine being able to engage your students in learning statistics! You would need your students to have access to a large database of real data, preferably about students. It would be even better if your students were part of the database. Ideally, the data would enable your students to ask questions of interest to them. For a teacher, you would want a project that meets the requirements of today's curriculum and modern teaching practice. Just for good measure, the project should be able to use technology in a meaningful way and would it be just too much if someone had done most of the preparation for you?

CensusAtSchool will enable you and your students to take samples of raw Australia-wide data from a large database. The database will contain the answers to questions that your students have provided, and they can use it to investigate questions that may interest them.

The Australian Bureau of Statistics (ABS) has developed a uniquely Australian version of a highly successful international project, created in the UK by The Royal Statistical Society (see www.censusatschool.ntu.ac.uk). Not only can your students make comparisons between themselves and their peers within Australia, but also internationally.

CensusAtSchool also aims to promote the Census of Population and Housing on 8 August 2006.

How schools can get involved

The first thing to do is to register to participate, as explained below.

CensusAtSchool consists of two phases. The first phase involves students completing an online questionnaire. This means that they will be part of the data. This should also mean that your students will have an empathy and attachment to the data; their understanding of the data should be deeper. The questionnaire is suitable for students from Years 5 to 12 and is open from 30 January until 7 July 2006. The ABS has, of course, taken measures to ensure confidentiality and protect the privacy of students who take part in the data collection.

The second phase of the project begins on 11 July, when the data from all students who participated is released on the CensusAtSchool website, through the random sampler. Students will now be able to analyse data in a similar way to a statistician. They can take random samples of up to 200 records and investigate their own questions, or participate in the activities provided.

Students will be able to make comparisons based on sex, age or location, just to name a few. They will also be able to make international comparisons.

Such investigations can stimulate students' curiosity and develop their ability to interpret

and critically evaluate data and information. Prepared data samples, some of which will be simplified for easier use by younger students, will also be available and could be placed on your school's intranet.

CensusAtSchool 2006 will be the first of an ongoing series of collections. Over time, students will have access to longitudinal data: "Are Australian boys getting taller?" is a possible investigation of the future.

Response to release testing

Our test schools have indicated a positive response to the questionnaire by students. Over 2800 students from around Australia completed a questionnaire and all the feedback to date indicates that students took the questionnaire very seriously: they wanted to enter accurate responses. The other common observation was that students were engaged by the questionnaire and worked diligently to complete it.

We also found that students were engaged by the next phase of CensusAtSchool: using data about themselves to perform statistical investigations. The primary and secondary schools that took part in the launch of the project reported that CensusAtSchool was a different way of doing mathematics, and more interesting than working from a text book or worksheet. An interesting observation made by a Year 9 student was that, "there were more students who scored high grades for the task... because more wanted to do the work."

The teachers used the Introductory Activities to show students the basics of using Microsoft Excel. One approach taken was to begin by having each student choose a different question from the questionnaire to analyse.

The primary school students enjoyed surveying the class and constructing the graphs used in the Eye Colour activity. They were engaged in using data about themselves and produced some very good results. They were then keen to move on to other investigations.

The Water Management Activity was used as an integrated project across several subjects in the secondary school. The data responses to questions 39 and 40 was

summarised in mathematics, and the analysis completed in their SOSE class. This analysis was then used as the basis of a letter to the local council expressing concern about a local water issue. The class even focussed on water quality in their science class.

What can be done with the data

In a primary or junior secondary class, students could use the data to draw and use graphs. The graph shown in Figure 1, for example, examines the frequency of different eye colours among students in a class.

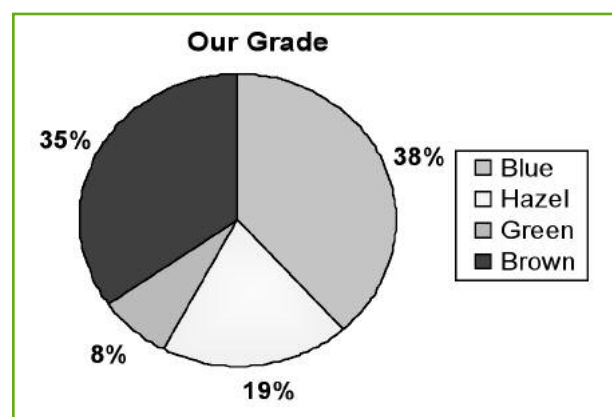


Figure 1

The students can then investigate whether their class is typical of Australian classes.

In a secondary mathematics class, students could use the data to investigate the relationships between different variables. For example, can you estimate a person's height from their belly button height? Figure 2 shows a graph of a sample taken from the release testing data.

Access to such data can be valuable to Year 9 and 10 classes. It can also offer many possibilities for Year 11 and 12 students.

In a secondary SOSE/HSIE class, students could investigate student attitudes to environmental issues, including water use. What conclusions might be drawn from a graph such as the one shown in Figure 3? Students could construct summary tables and graphs.

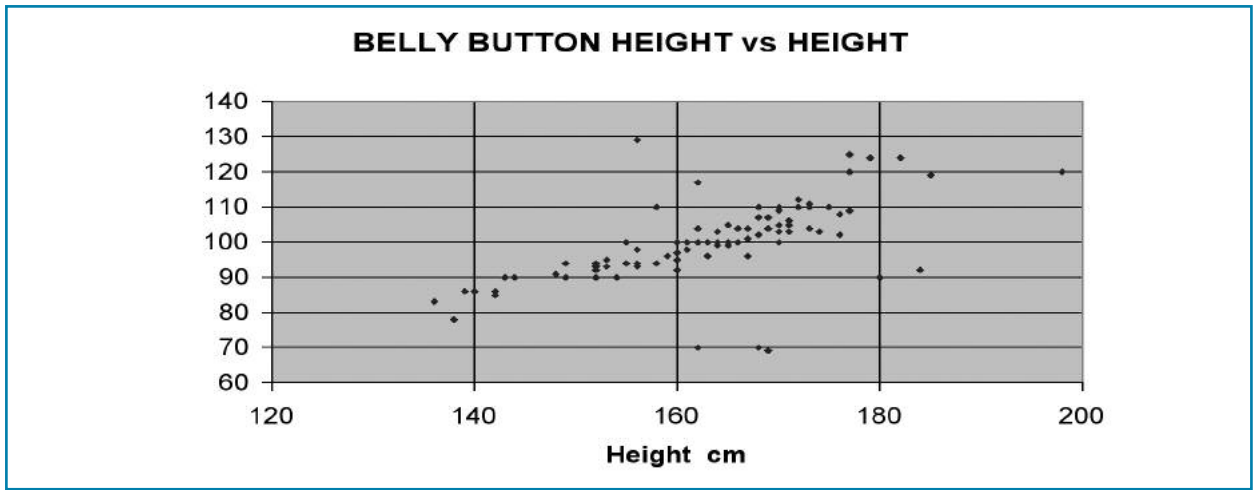


Figure 2

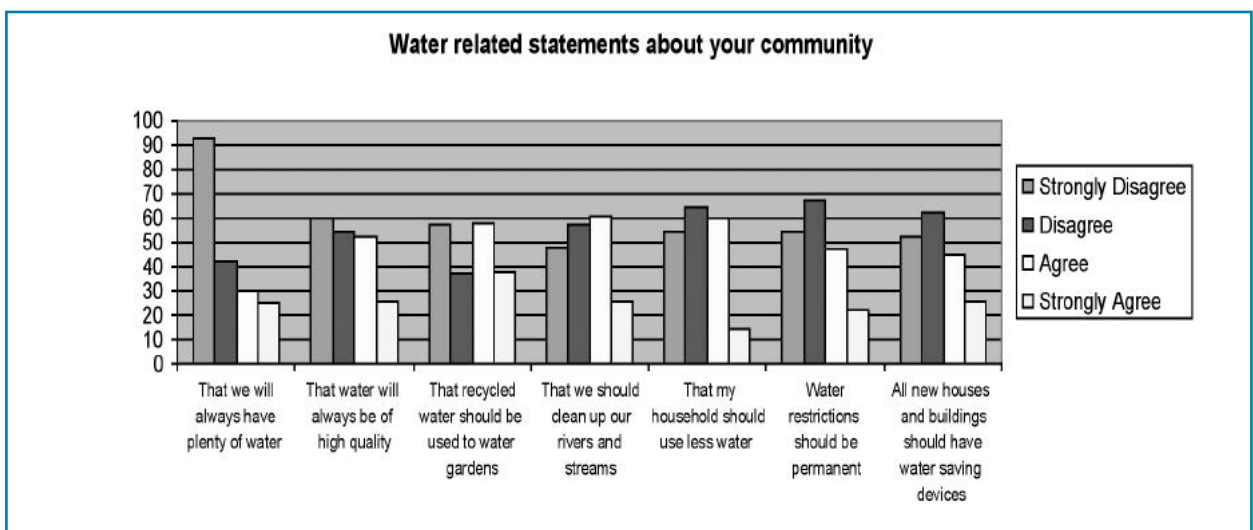


Figure 3

Accessing the data

The first thing to do is to register your school to participate in CensusAtSchool. Registration forms were sent to school principals in late 2005, or you can register on the CensusAtSchool website: go to www.abs.gov.au, click on the CensusAtSchool icon and then go to the “School Registration” link.

After 11 July 2006, you and your students will be able to get data from the Random Sampler on the CensusAtSchool page. It is reasonable to suggest that your students will be more engaged with the data if they have completed a questionnaire.

You can view further details about CensusAtSchool by going to the ABS website as described above.

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