International Statistical Literacy Project Newsletter

March-June 2009, Volume 2(2)
http://www.stat.auckland.ac.nz/~iase/islp/home

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Phase 2 of the International Statistical Literacy Competition is completed.

Dear Colleagues,

It is with pleasure that we announce the end of phase 2 of the Statistical Literacy Competition. You may see the names of the winners, their schools, teachers and national committees in the front page of the ISLP web site

http://www.stat.auckland.ac.nz/~iase/islp/home and, by clicking on the country's name in that list, more details and more photos in the country-specific pages. A few countries are not there yet, but their results will be in soon. Keep visiting our site.

The huge amount of work and dedication that has been put into this phase of the competition by committees, teachers, students and other volunteers who proctored exams is impressive. Each committee has managed its competition autonomously, in its own creative way and with country specific exams but all exams have shared the same high standards and similar contents for the 5 levels of students tested.

What now? National committees and teachers have been and are still busy looking for sponsors to cover the trips of the children and their teachers to South Africa for the period of August 18 to 24 to participate in the ISIBALO/ISLP final Statistical Literacy Competition. Statistics South Africa's ISIBALO program is sponsoring the event and have prepared a program for the students that will make those days an unforgettable experience and a significant milestone in the road to statistical literacy across the globe (see calendar of events at the end of this newsletter).

The competition will take place on August 20 and other activities for children around soccer, statistics of participating

countries and data handling will wrap up the academic program.

Students and teachers will be meeting in an area of Durban's International Convention Center during the week and will participate in some of the ISI 57's events. All of them will be staying at the same hotel and sharing other transportation and activities where they lodge. ISIBALO's chaperones will accompany the children at all times.

We are still short of funds for a few students and teachers. If you are reading this and know of institutions that could donate at short notice, please let us know. You may see a list of sponsors that have already contributed to partially or fully pay the flight of the students and teachers throughout the world in our web site http://www.stat.auckland.ac.nz/~iase/islp/home Most sponsors have chosen to do the funding directly to the students. Your friends and institutions may choose to do the same.

We are very helpful for all the help that Mehta Shabani, of the ISI headquarters office and Jairo for all their help in organizing everything and leading us successfully to the final of this competition.

Signed by: Heads of the National Committees of Phase 2 of the International Statistical Literacy Competition (Gabriella Ottaviani, Maria Ines Rodriguez, Jean Claude Girard, Mary Townsend, Reija Helenius, Mina Korhonen, Juana Sanchez, Maria Manuel da Silva Nascimento, Koleka Rangaza, Vicente Novegil Souto)

Good bye to Dr. Miranda Mafafo, former manager of ISIBALO

Dr. Mafafo resigned a few months ago. She was the architect of the ISIBALO program and, since the 56th session of the ISI in Lisbon, worked hard to make sure that South African children from all regions in South Africa could participate in the International Statistical Literacy Competition. But not only that; other South African developing countries have completed all phases of the competition and will be participating in the final in Durban thanks to her eagerness to have African children participate in the huge capacity building program via Statistics that Africa is engaged in.

She shared a vision that the International competition is not about today, or the 57th session of the ISI, but about the future, about ISI-57 leaving a legacy of practice and respect for Statistics as the venue to reach a society in Africa that is evidence based. Without her vision and hard work since August 2007, we would not be where we are at now.

South Africa will be the first country in the world to hold a International Statistical Literacy Competition thanks to her vision and Statistics South Africa's crusade to build Statistical Capacity in Africa.

Nominations Received for the 2nd Best Cooperative Project Award in Statistical Literacy. Submit your vote.

The ISLP has received 5 nominations for the 2nd Best Cooperative Project Award in Statistical Literacy. They are:

- "EarlyStatistics: Enhancing the Teaching and Learning of Early Statistical Reasoning in European Schools" (Cyprus) http://www.earlystatistics.org
- "New Zealand Certificate on Official Statistics" (New Zealand) http://www.statisphere.govt.nz/certificate-of-official-statistics/default.htm
- "Statistics for School:E-school" of Statistics Lithuania (Lithuania) http://mokyklele.stat.gov.lt/index.php?id=74
- "Maths4stats project of Statistics South Africa (South Africa) http://www.statssa.gov.za/maths4stats/index.asp
- "Statistical Literacy in Mendoza" of DELE, Argentina. http://www.deie.mendoza.gov.ar/aem/

A panel of international judges will be evaluating these projects and selecting a winner. The winner will be unveiled at the ISLP open meeting during the 57th session of the ISI in Durban. But we would like to open the process to everyone. All the materials in support of the projects, including their internet locations, and a link to submit your own vote can be accessed from our ISLP web site

http://www.stat.auckland.ac.nz/~iase/islp/bestproject The popular vote will be taken into account by the judges in the final   selection.

New Resources and events in Statistical Literacy.

• Invitation to Statistics by Xiao-Li Meng http://www.stat.harvard.edu/Academics/invitation_chair.pdf presents a set of puzzles with which you can challenge students in science and mathematics to motivate them to take Statistics.

• Best Cooperative Project Award Candidate Projects. See the section   presenting the candidates for the Best Cooperative Project award elsewhere in this newsletter. All those are new projects with resources for the classroom and adult statistical literacy.   They have been added to the pages of the ISLP web site.

• Hipotesis Alternativa, Vol 10 Number 1 is out at http://www.ucv.ve/hipotesis/Data/Hipotesis%20alternativa%20N18.pdf

• Seminar on Innovative Approaches to Turn Statistics into Knowledge. The programme for the forthcoming Seminar on Innovative Approaches to Turn Statistics into Knowledge, Washington, D.C, 15-16 July 2009 can be found at http://www.oecd.org/dataoecd/29/15/42667493.pdf   More details of the conference (list of participants, etc...) can be found at http://www.oecd.org/progress/ict/statknowledge

• Innovative Visualization Tools: A Way to Engage Citizens and Influence Policy - A session organized by the ISI at the Joint Statistical Meetings to be held in Washington DC, Sunday August 2, 2-3:50 pm. View the program at http://www.amstat.org/meetings/jsm/2009/onlineprogram/index.cfm?fuseaction=activity_details&activityid=4&sessionid=204097

• Animated population pyramids for Australian states and territories are available on the main website of the Australian Bureau of Statistics. The recent addition of Interactive age-sex pyramids to the 'ABS Datasets' on the Teacher pages of the ABS Education web site, enable students to build their own population pyramid. Students have the opportunity to compare the age-sex profile of both indigenous and non-indigenous people based on 2006 census data. In addition, through the Geography classroom activities they build pyramids for areas such as the inner parts of Australian capital cities (Geo_12 Moving In and Moving Up). Additionally, they may enter their own data from other census products e.g. census tables, community profiles, into the interactive pyramids to create a picture of a neighbourhood.http://www.abs.gov.au/websitedbs/cashome.nsf/51c9a3d36edfd0dfca256acb00118404/958e7b159518abe0ca2572fe001e2ad8!OpenDocument

• CensusAtSchool goes live on TeacherTube! CensusAtSchool has taken a new direction in professional development. With close to 1000 hits so far, the TeacherTube videos are proving a success for the ABS CensusAtSchool project. The video segments, which last only a few minutes, introduce the project and show how to use MS Excel. The video segments which have been most popular are those showing how to create graphs and calculate mean and median. The videos are found under Professional Development on the Teacher area of the CensusAtSchool website or visit http://www.abs.gov.au/websitedbs/cashome.nsf/89a5f3d8684682b6ca256de4002c809b/74010d336c2f6503ca25747b0013bd35!OpenDocument

• Google offers data charts from government agencies .This is an article that appeared online in the San Francisco Chronicle. Users who enter a query like "California unemployment rate" will get a chart that tracks the rate since 1990. Clicking on it

opens a bigger version and offers users the ability to refine the data by county, or compare the rates in different counties . To see the article http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/04/28/BU1F17AS9Q.DTL&type=tech

• Democratize data that the taxpayers have already paid for. The Obama administration launched Data.gov, a Web site intended to increase public access to data collected by the government. "Data.gov is going to democratize data that the taxpayers have already paid for," chief information office Vivek Kundra said in a video posted to the White House blog. Applications will soon be developed by the private sector to allow the public to see the raw data in a summarized way (see Google article above). See the original article on Data.gov at http://www.nytimes.com/2009/05/26/opinion/26tue3.html?th&emc=th

UIS RUSSIA team's initiative to launch Statistics education at school level in Russia.

by Tatiana Yudina, UIS RUSSIA Project Director

Moscow State University Research Computing Center-based University Information System RUSSIA project (http://uisrussia.msu.ru) plans to launch a statistics education initiative in Russia and compose an infrastructure, with the UIS RUSSIA being the core. Since 1999 UIS RUSSIA cooperates with the RF State Statistics Service (Rosstat).

 The initiative started with work on the educational program for school children. It is planned to be multi-functional and consisting of several modules.

Going spatial!

 Australian Bureau of Statistics

What did you do when you first saw Google Earth? Was it to look at your own home? A fascination with the world around us usually starts with familiar places, namely home and for students, their school.

Students are excited and engaged by exploring their world through the use of data visualisation tools and what better way than Google Earth. The Australian Bureau of Statistics is developing lesson plans for Geography students, which integrate mapping as a way of presenting and analysing data.

Spatially linked databases are creating new ways of gathering, storing, manipulating and analysing information. Every place on earth has a location provided as its latitude and longitude. Imagine a database of crime scenes. The locations may be pin pointed and information stored about each crime such as the date of the event, the type of crime, names and addresses and so on. When location is attached to points e.g. malarial outbreaks, nesting sites and they are displayed on a map, the concept of distribution takes on a new meaning. Add the location to crime and new patterns emerge. The Google earth image provided (figure 1) shows the location of students in a class.

Consider a map as a mixture of points, lines and polygons, the latter two being created by joining points. Line data may appear on a map as a road, rail, air route, a river course, contour line or fault line. The rail owners, volume of passengers, maintenance schedule may be some of the attributes stored about the rail network. Line data overlaid on the distribution of students in a class would reveal the main modes of transport available to students.

Figure 1: *Placemarks on Google Earth are identified by their latitude and longitude.*
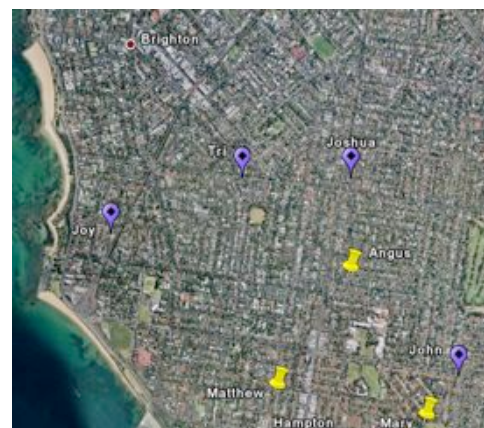
Area or polygon data may include information about a country, state or smaller administrative area, a census collection district, an area of forest or a farm. A census provides one of the largest collections of demographic information about persons, families and dwellings. Increasingly data from a census is being represented on maps.

Spatial data is of growing importance in the fields of natural resource management, land and asset management, demographic and socio economic analysis. There are endless possibilities for students to become engaged with the analysis of spatial data through the investigation of social and environmental issues. Spatial analysis is integral to the modelling of current global environmental issues.

Providing co-ordinates for information stored in a database, enables location, and distribution patterns to be analysed using appropriate software. It is often quoted that 80% of information has a geographic or spatial component. The significance of this fact is made more meaningful with the use of computers and geographic information system (GIS) software. A picture says a thousand words and displayed on a map both poses questions and provides answers. It facilitates inquiry based learning.

Students are engaging with the spatial nature of data in the Geography activities being developed on the Australian Bureau of Statistics website. Exploring how students travel to school is one way of integrating a range of technologies with a variety of data about journey to school and work. From Google Earth to MS Excel, geographic information system software and the CensusAtSchool database, students compare their mode of transport to school and make comparisons with census data. These ideas form the basis of one of the new lessons being developed for the Australian Bureau of Statistics Education web pages.

Students discover their own latitude and longitude from websites such as Google Earth and compile a class list showing the location of all students. The mode of transport and journey times are recorded and stored in a simple Excel spreadsheet. When this information is transferred to a map using geographic information system software, individual map layers may be created that show the distribution of students travelling by car, foot, bus or by bicycle

Figure 2a. *Location of students in a class*.
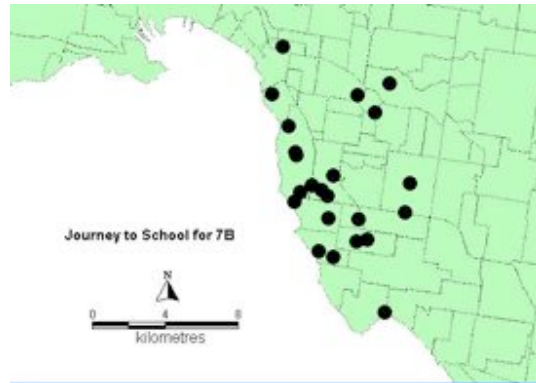
Figure 2b. *Distribution of students and their mode of transport using GIS software.*
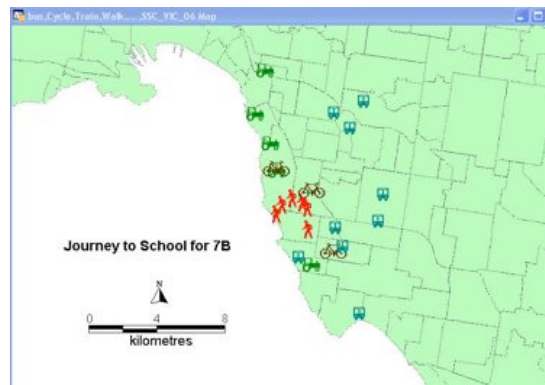
The ability to spatially represent and analyse data taken simply from a class of students models the capacity of the GIS to spatially analyse thousands of points, lines or polygons and the associated data.

The activity may be enhanced by comparison with other Australian school students using the CensusAtSchool database, with students in other countries using the International CensusAtSchool database and with the wider population using census data.

The rapid changes taking place in data visualisation make this an exciting time to be working with data. Increasingly, information is being collected, stored, manipulated, displayed and analysed from a spatial perspective. Remember to include statistical, temporal and spatial distribution in your data analysis skills. After all – a picture says a thousand words.

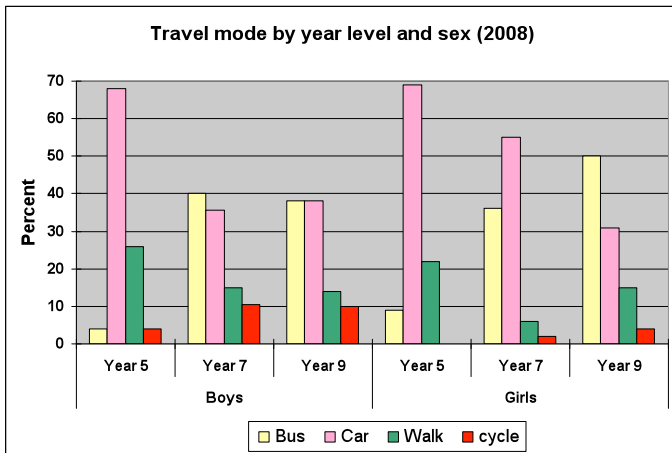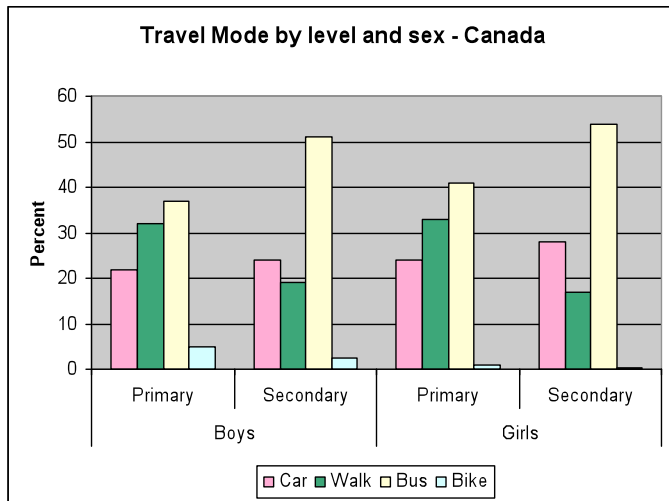**Figure 3** *How Australian students travel to school (2008, CensusAtSchool, ABS)*

Figure 4 *How Canadian students travel to school (CensusAtSchool, 2006-2007, Canada)*

ISLP Wiki undergoing some changes

Kaisa Pitkänen works as a trainee in Statistics Finland for this summer and Reija Helenius (advisory board member of the ISLP) is her leader. Kaisa studies mathematics, statistics and computer science and will graduate as a teacher soon. She checked the web pages of the ISLP called Statistical Offices / Training and Statistical Offices/

Projects and found some links which don't work. She also had some great ideas on how to integrate those two web pages into one. Because she did not know how to work on our Wiki, she asked me. I sent her a file with instructions and she did the job in no time. Using the Wiki is very easy. Your resources could be updated much faster if you looked at our web site often and just entered the Wiki and updated your project link.

Having said that, what did Kaisa change? Two pages that were created many years ago by Reija and also by Paola (also advisory board member), became repetitive over time. Projects and training sometimes overlapped. Kaisa thought that it is more efficient to have the Statistical Offices in one place and put the two older pages together. As a consequence, the only page now in the ISLP that contains all the programs of Statistical Offices with updates is http://www.stat.auckland.ac.nz/~iase/islp/training

Kaisa and Reija are also going to write e-mails to all statistics offices listed in the Training and Project web pages and ask if anyone has anything to add, replace or delete.

You two can help us make the wiki a more suc-cessful way of communicating about our resources by entering your own links and comments. Signing up is free. Contact me if you would like to get started. Email me at jsanchez@stat.ucla.edu

ISIBALO/ISLP Final of the International Statistical Literacy Competition.Tentative program for the ISI-57 week

ISIBALO and Statistics South Africa are very busing preparing the week of activities for the learners that will be participating in the final of the International Statistical Literacy Competition. Phase 3 of the competition is really the International phase (all other phases having taken place at the local country level). Thus South Africa is the first country to ever hold an International Statistical Literacy Competition for school children. Below is a sketch of the program that Statistics South Africa put together. The final is

on August 20th, in two phases: country and individual competition. You are all invited.