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ISLP Newsletter is the newsletter of the International Statistical Literacy Project of the IASE – the International Association for Statistical Education.

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# The importance of enhancing statistical literacy and ISLP

by Iddo Gal,  
IASE President,  
and Chair of the ISLP Advisory Board



The promotion of statistical literacy worldwide is one of several strategic goals of the International Association for Statistics Education (IASE). Over the last several years, the International Statistical Literacy Project (ISLP) has been a key player in this regard. ISLP is a joint activity of IASE and its parent organization, the International Statistical Institute (ISI), and is helped by other ISI Associations.

While in numerous countries statistics education has gained a strong foothold in schools and universities, there are many places where the teaching of statistics at any level is still lagging behind. Often, teachers focus on computational aspects of statistics, and do not pay sufficient attention to the importance of developing statistical literacy or of deeper understanding of statistical ideas and related reasoning processes. Certainly, knowing statistical terms and procedures does not ensure that students and [future] citizens can comprehend and communicate well about the diverse range of statistical and probabilistic messages and issues that permeate modern life. Dedicated educational activities are needed in order to develop statistical literacy.

Often, a local revolution related to the development of statistical literacy or to statistics education in general starts with a single educator or group of teachers who decide to move forward and adopt a more innovative and modern approach. Such innovators (within their own setting) may have to work hard in order to convince their colleagues of the merit of opening up to new ideas. The existence of the ISLP and its various resources, as well as the possibility to consult with other colleagues in the ISLP and IASE network and to share ideas and suggestions at professional conferences, can be invaluable for many "isolated" statistics educators.

The ISLP is gradually gaining more attention, as evident for example by its expanding newsletter which is getting articles from many country coordinators and from strategic partners such as statistics divisions of international organizations.

During the last ISLP open meeting at the World Statistics Congress in Hong-Kong in August 2013, over 25 specialists from diverse countries attended, and several conference papers reported on ISLP-related activities. I would like to congratulate the ISLP team, headed by the ISLP Director Reija Helenius (Statistics Finland), for working diligently to expand the scope of activities undertaken by the country coordinators in many countries, for promoting the ISLP poster competition, and for encouraging cooperative projects.

I would like to invite everybody interested in sharing ideas and findings about statistics education in general and statistical literacy in particular to join us at the next International Conference on Teaching Statistics, an event held by IASE only once every 4 years. ICOTS9 will take place 13-18 July 2014 in Flagstaff, Arizona, USA. (It is still possible to submit proposals for poster presentations at ICOTS until Jan 31, 2014). ICOTS9 promises to be a lively and very informative meeting, as it draws together several hundreds of people from across the globe interested in statistics education and learning in diverse contexts. These participants include graduate students, statisticians and practitioners, researchers, teachers and teacher-educators, specialists involved in teaching statistics in tertiary and academic institutions, and many others, both new and experienced in this dynamic domain.

Please hurry to secure your place at the exciting ICOTS9, in a venue near world-class attractions such as the Grand Canyon and Sedona. Additional information appears on the conference website: <http://icots.net/9>

# ISLP Executive Team 2013-2017 Introduced

Dear friends of promoting statistical literacy,

For the next four years, Reija, Pedro and Steve will head the ISLP project that operates under the auspices of the ISI and IASE and in close cooperation with the IAOS.

The aim of the project is to promote statistical literacy and user skills in all walks of life around the world. The strength of the ISLP is based on a strong, global cooperation network. We currently operate on all continents with 122 Country Coordinators. The ISLP Executive team would like to thank the ISLP Advisory Board, network supporters and country coordinators for their valuable contribution over the past year. A special thank you goes out to Doctor Sharleen Forbes for her strong contribution in the ISLP Executive team in 2011-2013. 2012-2013 had a record number of participants in the poster competition and marvellous ISLP best cooperative candidates. Considerable progress was also made towards developing an ISLP global strategy.

A heartfelt thank you to everyone and wishing you an energetic year in promoting statistical literacy and user skills in 2014.

Reija, Pedro and Steve



**Reija Helenius,**  
Finland  
ISLP Director<sup>1</sup>



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Portugal  
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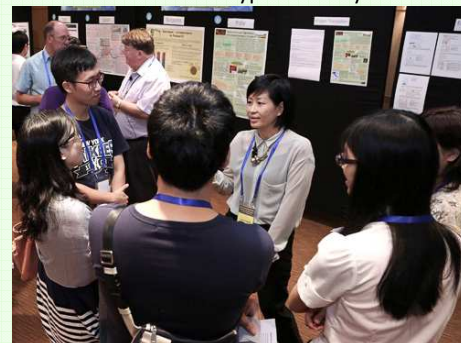
by James Nicholson\*

## How the ISLP poster competition can be used to develop statistical literacy

The ISLP run a biennial competition for secondary school level students, with the results of the latest competition being announced at the international conferences held in 2013 in Hong Kong and Macao. A workshop for local teachers as well as conference delegates was organised in Macao aiming to provide some support for people interested in running poster competitions. The workshop was structured by having a selection of posters on display which included the winners in both age groups and also some posters which did not receive awards. In order to allow attendees to consider the merits of each poster without prejudice, these were displayed without identifying the winners. The chair of the international judging panel, James Nicholson, then outlined some of the characteristics which the panel were looking for in posters and asked the audience to look at the posters again using those comments as a standard and to try to decide which they thought was best by those criteria. James then presented the decisions of the panel with a commentary on the strengths and weaknesses of each of the winning posters – even the best posters had areas in which they could have been improved – sometimes there was too much dense text to allow easy communication of the key ideas, or sometimes the question being addressed by the poster was not clearly articulated for example. The international panel judging the competition felt it would be helpful to construct some advice based on their experiences in evaluating these posters which could be provided to support future ISLP competitions. An early draft of this advice was used in running this session in Macao, and the very positive comments which people attending the session made suggest that such guidance as to what makes a good poster would be welcomed. The panel will be developing this advice more fully in the near future and it will be available on the ISLP website with some additional resources to support people wanting to run competitions.

The key areas identified by the panel are that a good poster will have the following characteristics (i) a clearly identified question being considered; (ii) the analysis and representation of the data will be appropriate for effective communication to the target audience – so it does not require the use of very sophisticated statistical techniques and if the target audience is young then that would be inappropriate. Clarity and focus on answering the question are key considerations; (iii) the interpretation and conclusions again need to focus particularly on the question under consideration – too often the conclusions reached relied on information not presented in the poster; (iv) other features such as the visual appeal to attract attention need to be balanced with substance to sustain the viewer's interest once they have been drawn to look at the poster; (v) the panel wanted to emphasize that competitors could use primary or secondary data, or indeed a mixture of both, but the type of research questions that can be answered effectively are quite different depending on the type of data you choose.

*The photo shows attendees at the conference session discussing the posters, some of which can be seen on the wall in the background. (photo by Brad Payne).*



\* Consultant, SMART Centre, Durham University, on behalf of the International Jury (Adriana d'Amelio, Iddo Gal, John Shanks and Alejandra Sorto)





# Statistical literacy activities in Iran

By Afshin Ashofteh\*

The first day of second month of fall (1st of Aban and 23rd of October) is named 'National Day of Statistics and Planning' in Iran. Statisticians, research centres and universities host many ceremonies around the country to celebrate this national day.

In this regard, Shahid Bahonar University of Kerman and University of Rafsanjan hosted their celebration of the Statistics day and International Year of Statistics in two days. As external speaker, Mr. Afshin Ashofteh, ISLP coordinator for Iran and member of board of directors of Iranian Statistics Society and Mr. Alireza Zahedian, Head of Statistical Research and Training Centre of Iran, were invited to talk about Statistical literacy and the importance of Statistics in Iran and around the world.

Mr. Afshin Ashofteh presented two talks, one about statistical literacy in managerial concepts for managers and the other one, basic concepts of statistical literacy for students of Statistics. Starting his talk for managers by asking "Why Statistics?" he then discussed the use of statistical concepts and statistical literacy in different fields of management, such as: strategic planning, knowledge management, talent management, project management, risk management, information technology and e-citizens.

Several workshops were held on official statistics, sampling, application of stochastic process in industries and R programming were held as part of these events. Additionally, top statisticians from the Kerman province were honoured in a special ceremony at Kerman University.

\* ISLP coordinator for Iran, Senior Officer of Monitoring and Evaluation Group of Training and Human Resource Studies Department at CBI

## Introducing a new country coordinator

### Welcome to the ISLP team, Philipp!



Philipp Ullmann comes from Germany where he is working as a lecturer at Frankfurt University teaching mathematics education. Philipp has a long standing interest in the teaching of statistics with a particular expertise in the analysis of mathematically informed diagrams and infographics. His research interests focus on the cultural prerequisites and implications of visual-statistical literacy.

# Statistics Korea and the National Statistics Competition

By Soomi Jun, ISLP coordinator of Korea



Statistics Korea has held a National Statistics Competition since 1998 to nurture reasonable thinking and improve knowledge of statistics among students. Initially the competition was for elementary school students only but since 2002 it has been expanded to include middle school students. The competition format changed in 2012 from problem-solving to a poster competition similar to the ISLP Poster Competition.

Herbert George Wells stressed the importance the statistics for the modern society, saying "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read or write". However, students tend to find statistics and mathematics difficult. For this reason the competition has been reorganized in recognition that statistics is not simply calculation but also involves logical decision-making and analysis. Hence the slogan for the 2013 competition is "Joy of learning for yourself, Statistics makes children smile".

The National Statistics Competition did not have a specific theme. Competitors submitted posters covering a wide range of topics including: everything from the daily lives of students (using stationery, tardiness, lunch menus, friendship, using smartphones) to environmental and social issues (water use, food waste, reunification of the Korean peninsula, juvenile issues). Over the past two years students are realizing that statistics are not difficult or boring but are a useful and relevant real world topic. The growing familiarity with statistics is a significant achievement for statistics education. It is a great honor that Seungyeon Song and Do Kyoung Lee, students at Daejeon Munjeong Middle School, became the first Korean students to win the international competition.

With the emergence of big data more data scientists are required. Statistics Korea will pave a road to ensure Korean students become statistical literate adults with critical and analytical minds.

# Japanese Statistics Poster Competition marking 61 years of success

By Michiko WATANABE,  
Professor, Keio University and MAKITA Naoki, Director, Statistics  
Production Support Division, National Statistics Center  
ISLP country coordinator for Japan

The National Statistics Office in Japan has many initiatives including educational websites for kids and teachers and an anonymised micro data service. The Statistics Poster Competition (SPC) is significant as it has been conducted annually since 1953. Marking its 61 years, the SPC 2013 accepted 25,852 works. The ‘Minister for Internal Affairs and Communication Award’ went to ‘Our endless summer: Formulating an effective strategy for the last tournament’ submitted by a junior high school student. His poster told the story of his analysis of his school’s baseball team performance and how that analysis actually led the team to win second place in the 2013 summer local tournament (Figure 1).

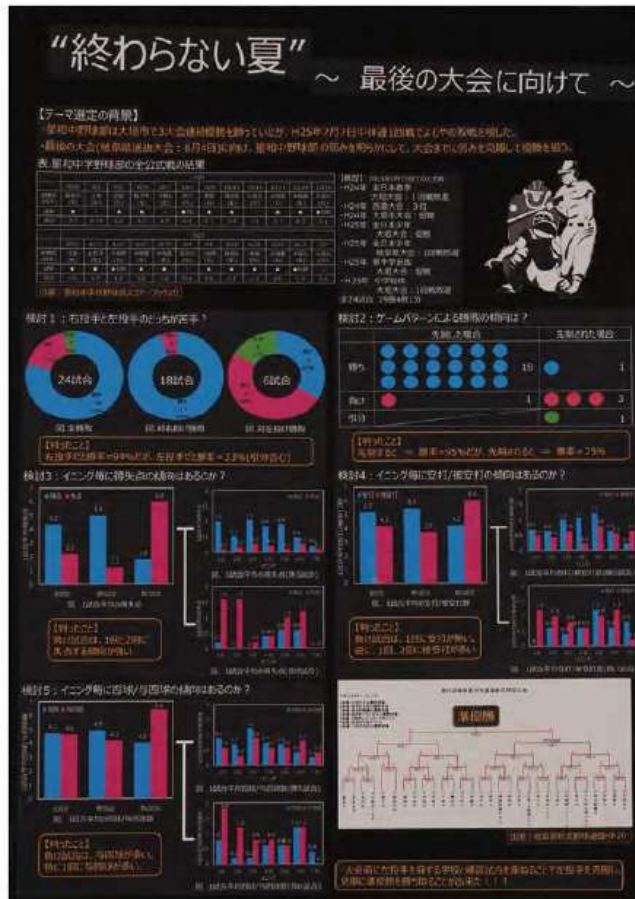


Figure 1. Our endless summer: Formulating an effective strategy for the last tournament, Mr. YAMADA Keigo, Seiva Junior High School, Oogaki city, Gifu prefecture (the Minister for Internal affairs and Communication Award, the Statistics Poster Competition 2013), SINFONICA

## Background and procedures

The SPC started after the war as a side event to the National Statistics Convention where statisticians and enumerators who had long and diligently worked for official statistics are commended. The SPC's purpose is to raise awareness of statistics and to improve statistical knowledge and graphical presentation skills in the general public. SPC applicants design a poster presenting statistical graphs of original or published statistical data of any theme (unlike the ISLP poster competition which has specific theme).

Posters are grouped into five categories according to their school grades. An additional category for computer designed graphs is also open to all age groups including adults (Table 1).

Category	Eligible for	Theme
1	1st and 2nd grades pupils of elementary school	Statistics graph of data originally observed or surveyed by pupils
2	3rd and 4th grades of pupils elementary school	
3	5th and 6th grades pupils of elementary school	
4	Junior high school students	Statistics graph of published statistical data / data originally observed or surveyed
5	High school students and adults	
Computer graph	All ages including adults	

The SPC is organized in two stages: prefectural and national. Prefectural competitions are conducted by respective statistics divisions of prefectural (local) governments under the auspices of the prefectural education boards. The national competition is conducted by a private foundation (the Statistical Information Institute for Consulting and Analysis or SINFONICA) under the auspices of the Ministry of Internal Affairs and Communication (MIC), the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and a number of academic societies. Evaluation criteria for the SPC are: accuracy, neatness, relevance, impact of data and graphical illustration (for categories 1 and 2); and quality of graphs to help better understand statistics and clarity and novelty of the story (for the other categories).

## Schedule and supporting activities

SINFONICA announces the commencement of the SPC every April, the month when Japanese school year begins. In June, SINFONICA convenes a national training session for statistical graph instructors, and many prefectural statistics divisions also conduct local training sessions for school teachers and volunteers. Before and during school summer vacation, statistical poster workshops for pupils and students are organized. Against such a backdrop, the SPC are promoted nationwide and some schools assign their pupils and students to design statistics posters as one of their summer vacation assignments. Applications for prefectural competitions close around the end of school summer vacation. In September, prefectural statistics divisions select local winners by category as

Table 2. The record of the Statistics poster competition 2013

Category	1	2	3	4	5	Computer graph	Total
Prefectural competitions							
#Submitted works (all prefectures)	2.199	5.131	6.626	8.291	481	3.124	25.852
(Preliminary round)	↓	↓	↓	↓	↓	↓	
#Works advanced to National competition	135	152	156	137	56	167	803
National competitions							
(Secondary round)	↓	↓	↓	↓	↓	↓	
#Works of the short list	30	30	30	30	18	30	168
(Final round)	↓	↓	↓	↓	↓	↓	
First Awards	1	1	1	1	1	1	6
Excellence Awards	9	9	9	9	7	9	52
Awards	20	20	20	20	10	20	110
	↓						
Special Awards	The Minister for Internal affairs and Communication award : 1 The Minister for Education award : 1 The Japan Statistical Society President award : 1 The Japanese Society for Quality Control President award : 1						4

In addition, two Honorable Mentions were awarded from the works advanced to National competition, but excluded from the short lists.

the preliminary round of the SPC.

The best works win Governor's awards and prizes sponsored by local newspapers, etc. 'Cream of the crop' works of respective prefectures are forwarded to the national competition.

The national competition starts at the end of September. For the second round of the SPC, short lists for each category are compiled by Staff of MIC and NSTAC. National award winners are then chosen by a panel chaired by Prof. Watanabe with experts from academia and industries and senior staff from MIC and MOE. (Figure 2)



Figure 2-1. The second round selection of the SPC 2013, September 2013, SINFONICA



Figure 2-2. The Final round selection of the SPC 2013, September 2013, SINFONICA

## The result of SPC 2013

Table 2 shows the number of works submitted and national award winners in the SPC 2013. The national competition awards ceremony took place at the National Statistics Convention in November (Figure 3). The result of the SPC 2013 was reported in student and local newspapers (Figure 4). Prize winners' works were exhibited in event spaces (Figure 5); published in a booklet and disseminated to prefectural statistics divisions, schools and public libraries; and printed in a calendar as a small gift for the respondents of official statistics surveys (Figure 6). Award winning works, that satisfied entry conditions, were submitted to represent Japan in the ISLP Poster Competition.





Figure 3. The national competition awards ceremony in the National Statistics Convention, Tokyo, 13 November, Ministry for Internal Affairs and Communication, SINFONICA



Figure 4. An article reporting the SPC 2013 (Asahi Shougakusei Shimbun, 18 October 2013)



Figure 6. A 2014 Calendar, Statistics Bureau, Ministry for Internal Affairs and Communication

### Toward statistical literacy building

Since the war, the development of the Japanese Statistical System owes a great deal to the Statistical Mission to Japan headed by Dr. Stuart Arthur Rice. The Mission was so concerned about the general public's ignorance of statistics they recommended that "Elementary schools are encouraged to study statistical material published by local and national statistical offices as a means to rouse pupils' civil awareness and to develop practice to reason based on facts." Perhaps this recommendation also influenced the launch of the SPC?

"Official statistics as public goods" - This is a key phrase in the new Japanese Statistics Act (2007). We believe promoting the SPC will contribute to raising public awareness of official statistics and to developing people's statistical literacy in the age of information and big data.

Reference: National Statistics Poster competition website (in Japanese language)

<http://www.sinfonica.or.jp/tokei/graph/index.html>



Figure 5. Statistics Data and Graph Fair, Tokyo, 27-28 October 2013, Ministry for Internal Affairs and Communication, Tokyo Metropolitan Government, SINFONICA



**Flagstaff, Arizona, USA**  
**13-18, July, 2014**

# The John Hooper Medal for Statistics

By Steve MacFeely\*



On World Statistics Day, October 10, 2010 the Central Statistics Office in Ireland launched a new statistics competition; The 'John Hooper Medal for Statistics'. The competition is named in honour of the first Director General of the national Statistics office after gaining independence in 1923.

The competition is a national statistics poster competition aimed at post primary students, aimed at encouraging both statistics and team work. It is hoped the competition will also foster a love of exploration and learning. For 2012/2013 competition, 651 students from schools across the island of Ireland submitted a total of 253 posters.

First prize was awarded to Aoife Troxel and Sive Neary for their poster 'Tracing the roots of Irish vegetables'. This poster represented Ireland in the senior section of the ISLP poster competition, where it placed 2nd. Mary Aherne, Zoe Barry and Lucy Ward who received an 'order or merit' award in the national competition for their poster 'Think organic!' placed 3rd in the junior section of the ISLP poster competition.

During 'Maths Week', an annual celebration of all things mathematical in Ireland, a special prize giving ceremony was held in the Department of Education to which students, teachers, proud parents and the media were invited. The Minister for Public Service Reform, Mr. Brian Hayes awarded the John Hooper Medal. Ms. Reija Helenius, Director of the ISLP and Dr. James Nicholson, Chairman of the 2012/2013 ISLP International Judging Panel were there to award the ISLP certificates and prizes.

The highlight of this ceremony was when Aoife and Sive gave an outstanding presentation of their poster. As usual, the event was a very happy, feel good day. The Central Statistics Office in Ireland is very proud to be associated with the achievements of all the students and the ISLP.

You can view all the Irish winning posters, judges feedback and watch a short video of the prize giving ceremony at: <http://www.cso.ie/en/studentscorner/johnhoopermedalforstatisticscompetition/>

\*Assistant Director General - Central Statistics Office, Ireland  
ISLP Deputy Director



# Statistics and some clichés

By Hugo Hernández Trevethan\*

What do the Mexicans eat? According to 'popular knowledge', it should be beans and chili, or maybe corn. But taking a look at the posters participating in the ISLP Poster Competition, curiously there were no entries dealing with chili, beans or corn. Coffee – Yes! There were also posters about poinsettias (a native Mexican flower) and other Mexican gifts to the world, such as, vanilla, chocolate and the tomato.

A very interesting poster about the Mexican tomato highlighted a number of surprising facts. Not least, that in a country supposedly populated with bean and chili eaters (and maybe we Mexicans are?), more than 27% of the total area (including urban areas, natural reserves, forests, beaches and deserts) is used to grow tomatoes, and more than half of that production is for local consumption. So, we may be tomato-eaters not chili eaters - that could change some old clichés!

More importantly, this poster may catch the eye of tomato consumers all over the world, raising awareness of Mexican production. The poster highlighted important questions, such as: 'Is it possible that the ketchup we have on our tables in houses and restaurants, or in the sachets of the most famous fast-food franchises, could contain Mexican tomato?' or 'Where is Sinaloa state, where most of the tomatoes are grown?'

The answers to these questions may be of use. The information contained in the poster about Mexican tomatoes could help the economy or nutrition programmes. How? Well, given the scale and importance of the tomato to Mexico, some investors may be interested in participating in the production, processing or commercialization of Mexican tomatoes. Potential investors would certainly like to know where exactly Sinaloa state is. Maybe some potential trading partners may be interested in buying, or at least sampling, the Mexican tomato. Perhaps individual consumers might be interested to learn if they are consuming processed Mexican tomatoes in some way.

Looking beyond the Mexican poster, no doubt many other posters from different countries participating on the ISLP Competition will have practical messages and useful applications. The research conducted by our young student statisticians all over the world may give us new insights or different perspectives about agricultural production. This will help us to break some old clichés and have a more informed point of view of one of the most important industries in the world. Hopefully this information will help those industries to grow for the benefit of all.

\* ISLP coordinator for Mexico - Universidad Nacional Autónoma de México



Finland

# Interview with the winners of Finland's national competition

## The aim was an interesting poster that would stand

By Kaisa Mäntysaari



Telma Peura, Veera Isotalo, Maija Hakilla, Riikka Ylikulppi and Riikka Muje with ISLP Director Reija Helenius and Finland's ISLP country coordinator Minna Leinonen at Statistics Finland's stand during the Finnish Association for Teachers of Mathematics, Physics, Chemistry and Informatics MAOL ry's spring training days in Helsinki on 20 April 2013. The winners were awarded during the opening ceremony of the training days, after which they presented their winning posters to the participants of the training days at Statistics Finland's stand.

According to the jury, the victory in the category for upper level comprehensive school students was awarded based on an interesting approach to an everyday topic and the snappy way in which the poster was presented. "We wanted to stand out with our topic and contemplate ecological questions in our poster," Maija, Veera and Telma explained. The result – a poster called 'Fruits from the corner shop – Which fruit is most ecological?'

### Development of reindeer farming in 2000-2012

**Objectives** (What are the objectives?)  
The objectives are to analyze the development of reindeer farming in Lapland, Finland, from 2000 to 2012. The focus is on the number of reindeer and the area of reindeer farming.

**Methodology** (How was the data collected?)  
The data was collected from the Finnish Reindeer Herd Statistics and the Finnish Reindeer Farming Statistics. The data was analyzed using statistical methods, including line graphs and bar charts.

**Results** (What were the findings?)  
The number of reindeer has increased significantly from 2000 to 2012. The area of reindeer farming has also increased, particularly in the northern part of Lapland.

**Conclusions** (What are the implications?)  
The development of reindeer farming in Lapland is a result of increasing demand for reindeer products and the expansion of the reindeer herding industry.

### Hedelmiä lähikaupasta

**-Mikä on ekologisin hedelmä?**

Ilmastomuutoksen takia ekologisuusasiat ovat usein pinnalla. Päätimme tehdä projektimme aiheeseen liittyen. Voimmeko hedelmäostokillamme vaikuttaa ilmastomuutokseen?

**Etäisyys Suomesta valtioiden, joista tuodaan paljon kysyjäisiä hedelmiä**

Hedelmä	Appelsiini	Omena	Banana	Mango
Maa	Braasil	Ranska	Costa Rica	Israel
Matka (km)	10 700	2 300	10 100	3 300

Myynti hedelmien kuitustapöytä lasketaan mukaan Hiljalankien. On siis hyvä suosia läheltä tuotettuja hedelmiä.

**Hedelmien hiljalankien**

Hedelmä	Appelsiini	Omena	Banana	Mango
Hiljalankien määrä	~25	~25	~45	~45

**Hedelmien vesijalanjäljet**

Hedelmä	Appelsiini	Omena	Banana	Mango
Vesijalanjälki (litra/kg)	~100	~100	~100	~100

**Luokittelu**

- Appelsiini: X
- Omena: X
- Banana: X
- Mango: X

Riikka M. and Riikka Y. also wanted their topic to stand out; a topic where they did not expect much competition. For students from Lapland, reindeer was a natural choice as they are an essential part of agriculture in that region. The name of the poster was 'Development of reindeer farming in 2000-2012'. The jury of the upper secondary school category found the approach taken by the winning poster to be exceptionally interesting. They also noted that the research question, analysis and conclusions were clearly presented.

The winning posters were the result of hard work. The girls felt it was fun and educational to make the poster, even though it was time-consuming. They also learned a valuable lesson - the theme of the competition, agriculture, seemed boring at first but turned out to be very interesting on closer examination.

The teacher, Anni Närvänen, got interested in the competition after attending an event where the winners of the previous national competition were announced. "This type of competition suited the group of grade nine students I was teaching, [it] has a nice competitive spirit. Also, the work method of creating posters seemed like a good idea," said Anni explaining her reasons for participating in the competition. For teacher Raimo Huhtala, the statistical literacy competition has become a tradition. He has participated in every statistical literacy competition arranged in Finland, and every time he has inspired his students to go on to win both the national and international competitions. Raimo's victorious reputation has spread at school and this year the request that he would supervise the competition came from the students.



By Maria Manuel Nascimento

For the second consecutive time, Portugal is a participant in the second International Posters Competition of the ISLP/IASE. International Association for Statistical Education), which took place in 2012/2013, concluding in 2013. This competition has the objective of supporting, creating, and boosting activities of statistical literacy in every country in the world, materializing through the execution of a project work in statistics and its disclosure by form of a poster.

The work should be executed by teams of students, organized into two categories, appreciably corresponding to students up to middle school (born until 1997) and students of high school (born until 1994). The teams are made of, at the most, three students, that work under the guidance of the teachers that in the respective school volunteer to guide them. All of the applications are subordinate to a theme, given by ISLP, the guidance rules, for the teachers as well as for the students.

In each country, at a first stage, two posters are selected, one by category, which compete in an anonymous process by the international rules of ISLP. The Portuguese national jury has a diversified and specialized composition, and, this year, was made-up of: Arsélio Martins, Jaime Carvalho e Silva, Irene Oliveira, José Alexandre Martins, Margarida Abreu, Olga Alves and Pedro Campos. Student's work was appreciated by them all, as well as that of the teachers and students that took part in this competition since, according to the rules of ISLP, the execution of this poster is a motivating and demanding project!

The subject of this second competition was Agriculture, and despite that in Portugal 123 students being enlisted, only 15 groups, involving 40 students, ended up submitting posters for the competition.

In the category of the younger students, Diogo Queirós Pinto, Juliana Maria Pereira Ferreira and Rita Bateira Costa of the sixth grade of Escola Básica 2,3 Souselo, do Agrupamento de Escolas de Souselo, won the national competition with poster named "Past, present and future of Agriculture" made under the guidance of the teacher Ricardo Poças. This teacher describes the work done by the students: *"The class, after discussing the subject and uncovering each one's positions about matters regarding*

# Portugal in the International Posters Competition

*agriculture and the region, was divided in three groups, each of which with their query or problem in study.*

The winning group investigated: "The Past the present and the future of Agriculture" in Souselo's region. They organized a survey that sought to know if the parents or grandparents of the students in the class had been farmers (in the past), if their parents are (or were) farmers (at the present) and if they would like to or would see themselves as farmers later in their lives (in the future). The group chose a sample in each class of the school and after the data had been collected, they were analyzed and organized into tables and charts and, finally, the poster answering the initial problem was constructed. This poster was made by the students Juliana Ferreira, Diogo Pinto, Rita Costa, Bruna Costa, Diogo Alves, Carla Sousa, Lúcia Pinto and Marta Ferreira.

The second group investigated "Farming Practices" and the third group investigated "The consumption of farming products" also by means of a survey. With everyone's collaboration, it was possible to get more than 300 questionnaires intended for adults and 100 questionnaires intended for students. The fifth grade class D had the help of the fifth grade class C.

In the category of the older students, the winners were, at a national level, the students Ana Beatriz Sousa Pinto, Ângela Sofia Santos Leite and Beatriz Cecília Santos Leite, of the 11th grade, that worked under the guidance of teachers Paulo Duarte Bastos e Gil, Rui Moreira and Vasco Ribeiro, of Escola Básica e Secundária de Pinheiro of the Agrupamento de Escolas de Pinheiro, Penafiel, which did the poster named "Statistics Farm". It is written by the students the text that explains their work: *"These days, and maybe since the beginning of mankind, agriculture is an activity to which human beings intensively dedicates. This is because this practice enables a way to obtain food that, obviously, ensures the survival of our species (...).*

To look into [the local portuguese] situation, we resorted to a statistical study of young people today, which will be the future employees and employers.



Essentially, we investigated, the interest of young people in agriculture, how and how frequently they do it and if they consider using it as a future job. For this, we selected randomly two classes of each year, from 7th to 12th year, and put them through the survey done by us. We also decided to investigate the farming practices of their parents or caretakers, to know what is currently done by adults, regarding agriculture (...)." Portugal is satisfied for its participation in the International Competitions of Statistical Literacy of ISLP/IASE. Here it should be highlighted that in the school year of 2011/2012, in the first CIP-ISLP, both second places at the international level were given to teams of Portuguese students! 2013 also brought luck to the Portuguese posters where "Statistics Farm" Group got an Honorable Mention from the ISLP/IASE jury during the ceremony that was held at Hong Kong, China, during the 59<sup>th</sup> ISI World Statistics Congress (2013).

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# Are Deer, Sable and Winnie the Pooh heroes of the new Russian fairy tale?

*By M.Ju. Balakhnev, ISLP coordinator in Orel region, Russia,  
Head of the Department of summary statistical works, regional accounts and balance sheets  
of Rosstat regional office in Orel.*

Russian fairy tales are fascinating, but we want to tell you not about them, but about the best students' statistical posters in Russian. Market research on honey by Winnie the Pooh, the importance of reindeer breeding in Murmansk region and the development of sable breeding in Russia are some of the questions that the participants of the international competition touched upon in their research. This year, Russian students participated in the international competition of statistical posters for the first time. The Central office of the Federal Service of State Statistics of Russia asked all of its agencies to hold regional trials as input to a national competition in December 2012. The logistics and organization of such a large-scale event fell on the shoulders of the most active employees of the Russian Statistical Service. A few young, enthusiastic professionals registered as regional ISLP coordinators and organized the collection and processing of the posters. Close cooperation with the regional Departments of Education enabled educational institutions to be quickly informed about the poster competition.

In order to conduct such a large-scale informational outreach, the coordinators joined forces to create a web page on the popular Russian social network (vk.com/islp\_russia). Here they responded to questions, promptly informed students about the rules of the competition and shared experiences and ideas on the organization of regional stages. Later competitive works were placed on this website, so that everyone could express their opinion.



**Prizes for winners of the Internet voting.**



**The participants of the regional stage of the competition. Orel region, Russia.**



## **Awarding of the participants of the regional tour.**

*(from left to right: Maxim Balakhnev, Galina Kaznacheeva – Head of the Department of Education, Youth and Sports of Orel region, Tamara Ustinova – Head of Rosstat regional office in Orel.)*

This collective discussion helped surface many valid criticisms and improved the quality of the posters substantially. The possibility of plagiarism did not bother anyone, "Can you do better? – Do it!"

An Expert jury of the Federal State Statistics Service was given the very difficult task of determining the winners of the national competition. After much debate the posters: "Deer breeding. Yesterday. Today ..." representing the senior group and "Honey for Winnie-the-Pooh" from the junior group were chosen to represent Russia in the international competition. Following the formal jury vote an alternative on-line vote was held using the social network. The winner of this online vote was the poster "Sable is the national symbol of Russia." So now the national winners have been selected and the Russian students are eagerly looking forward to the results of the international competition. They say a firm **"YES!" to the International Year of Statistics.**



# The keys to promoting statistical literacy

By Barbara Ascari and Marina Peci\*

One of the fundamental aims of a National Institute of Statistics is to increase people's statistical literacy. The importance of this task lies in the fact that, in our information society, people who are not able to read and critically evaluate statistics are also not able to be citizens in the full meaning of this term.

From this point of view, young people are one of the main targets for the dissemination of statistical literacy in Italy. As in the past Istat is engaged in educational projects for young people and schools. Different from the past, however, is the idea of using the high computer technology and Web 2.0 skills which young people nowadays possess in order to attract them to statistics.

Istat has therefore developed a virtual laboratory (School of Statistics-Lab) with the aim of getting more contact with young people. The lab is open to teachers and students' contributions through an on-line platform. With the help of an interactive and dynamic visualization tool (Statistics eXplorer) this platform is a workroom for statistical knowledge. It is designed to have increasing levels of difficulty and has different access for students and teachers. Another important feature of the platform is that it facilitates cooperative learning allowing users (teachers and/or students or simple users) to create stories together using uploaded data.

Istat also promotes competitions among students to develop 'learning-by-doing' and problem solving skills.

A statistical quiz for lower-secondary school students, entitled 'Who wants to be a statistician?' has proved very successful. The quiz is modelled on a typical television quiz and is designed to encourage students to learn basic statistical vocabulary.

To begin with, participating students were trained. A little handbook, with statistical definitions and exemplifying charts was produced to help students learn key statistical concepts. Once the handbook had been studied, students are divided into two teams, each with a team captain. A complex PowerPoint file was prepared to support the game. Videos and role-playing games were also used to make the game funnier and more involved. Students were usually enthusiastic about the quiz and actively participate. They also became very competitive.

Another contest was launched on October 21th, during the third 'Italian Day of Statistics'. Upper secondary schools students have been challenged to develop a multimedia product describing how official statistics can help make evidence informed choices.

Another important competition addressed at lower secondary school students, involves another Istat product developed in cooperation with Fondazione Giovanni Agnelli, a private foundation in Turin. The tool 'Facciamo Statistica!' (Let's make Statistics!) is composed of three questionnaires on Environment, Leisure time and Gender stereotypes. Guidelines for teachers and video tutorials are provided where young people explain some statistical and economic concepts. Young participants are asked to create a statistical poster describing the results of a statistical survey undertaken in their classroom or in their school.

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## Poland and the ISLP

By Katarzyna Logwiniuk, ISLP coordinator for Poland, Researcher, Education & Science Foundation

For the first time Poland took part in International Statistical Literacy Project. The Polish eliminations were mainly organized by the City Government, the Educational Advisory Department and XI High School in Białystok. The scientific patronage over the event was carried out by the Department of Economy and Management at the University of Białystok, Białystok University of Technology and a private firm 'StatSoft sp.z.o.o.' from Cracow. The honorary duties were performed by the Marshal of Podlaskie Voivodeship, the President of Białystok and the Voivode of Podlasie. 115 students from Poland participated in the event; 16 projects from junior high schools and 25 from secondary schools. The participants prepared posters presenting their research. In May 2013 the jury chaired by Ewa Roszkowska, a professor from the University of Białystok, chose the winners. In the middle schools category, the winners, with a poster entitled 'Do Fertilizers Influence Plant Growth and the Amount of Crops?' were Bartłomiej Kosiński and Wiktor Krukowski from Białystok. In the secondary schools category, the winners, with their poster 'The Influence of Wind Turbines on Organisms in the Village of Sierakowo' were Monika Leończyk and Nicola Leończyk from Słupsk.

On 5 June 2013, there was a celebratory award ceremony for the laureates of the contest in a lecture theatre at The Department of Economy and Management at the University of Białystok. In addition to the students and their teachers, there were some high profile guests in attendance, including D.E. G. Łaska Educational Vice – President of the Technical University, Professor H. J. Wnorowski – The Dean of the Department of Economy and Management and W. Janowicz – The CEO of The Education Department at the City Government.

During the gala awards some of the participants presented their findings. Monika and Nicola Leończyk drew the audience's attention to the neglected and overlooked problem of noisy wind turbines. Their research, intended to raise social and political awareness of the negative impacts of turbines, underlined the necessity to produce eco-friendly wind turbines. Bartłomiej Kosiński and Wiktor Krukowski wanted to inform the audience that as more fertilizers are used, fewer crops will grow – so striking the right balance is the solution.

Some students from student governments of the Technical University and Białystok University eagerly helped organize the ISLP. Students from The Independent and Self-governing Student Union of the Technical University and the Department of Economy and Management at the University of Białystok presented the history of these universities and gave a tour of the faculties and extra-curricular activities available.

Students from Białystok University of Technology helped young guests visiting from other cities, collecting them from the train station and delivering them to the student dormitories where the participants stayed overnight. The Students Government took the young scientists to visit the university campus. Students from the Faculty of Computer Science showed some particular logic and board games. All of these efforts were organized by students from the Independent Association of Students of Białystok University of Technology. The winners were also guided around the Old Town of Białystok and the Branicki's Palace.

# Advancing Statistical Literacy in Australia: ISLP Poster Competition

By Frances Mawdsley, Assistant Director, Education Services, Australian Bureau of Statistics (ABS), ISLP country coordinator for Australia

The ISLP Poster Competition in Australia for 2012-13 was sponsored by the Australian Bureau of Statistics (ABS). Coordinated by the ABS Education Services team, 41 students from across a range of Australian schools embraced the challenge of the competition, with teachers demonstrating great support for the competition and the rich learning achieved through preparing a statistical poster. The successful poster from the junior division in Australia was titled 'Project Sunflower: How climate, water and fertilizer affects sunflower growth in Western Australia.' Students investigated how different variables affected sunflower growth. The winning team of students - Isha Singh, Chani Geldenhuys and Tim Cusens – completed their poster as part of their mathematics studies through the Gifted and Talented Education (GATE) program. Separated by over 1,600km, the students managed ways to communicate and collaborate effectively via electronic media, using Centra, Google Docs and email – they worked largely independently, investing time outside of school hours to complete their entry. 'Thank you very much for organising this competition; the students enjoyed it immensely and gave great feedback as to the amount they got out of the process,' said Jason Calloway, coordinating teacher for Project Sunflower. ABS wishes to congratulate the Australian team, who went on to win second prize in the junior division at the International phase of the competition. ABS also wishes to thank all Australian schools, teachers and students for their ongoing interest in advancing statistical literacy.

# CensusAtSchools wins the Best Cooperative Project Award 2013

By Sharleen Forbes, former ISLP – Deputy Director, and head of Judges' panel 2013

The CensusAtSchools project met all the criteria for the award including having international outreach and being implemented in more countries with each passing year. The project involved online collection and analysis of school students' data. There continues to be on going collaboration between countries on the content of an international component but each country also has freedom to develop their own questions. This project is interesting in that it was nominated by a participating country, the US, not one of the cooperating institutions, the Royal Statistics Society and the office of National Statistics in the United Kingdom.

Two runners up have been named:

• **First runner up:**

Radical Statistics included a number of excellent initiatives for raising statistical capability with an online competition, an adventure camp and a training course for teachers.

• **Second runner up:**

KZN Maths4Stats involved a set of lectures and workshops for teachers and the concept of training teachers in elementary statistics could have wider international applicability.

The award recipients at the World Statistics Congress in Hong Kong were:

1. Royal Statistical Society Centre for Statistical Education (RSSCSE), Kate Richards. Email: [katharine.richards@rsscse.org.uk](mailto:katharine.richards@rsscse.org.uk)
2. Portuguese Statistical Society, Bruno de Sousa. E-mail: [bruno.desousa@fpce.uc.pt](mailto:bruno.desousa@fpce.uc.pt).
3. Kwa Zulu Natal Maths4Stats, Delia North. Email: [northd@ukzn.ac.za](mailto:northd@ukzn.ac.za)

It is the opinion of the 2013 convener that this competition has resulted in the promulgation and recognition of some examples of innovative collaborations that have the potential to raise statistical capability. There are administrative improvements that could be made to assist future applicants:

**1. Promotion of the competition**

Only one project was submitted by the original closing date of the end of May. This date was then extended by the IASE President to the end of July. Following the President sending a personal email to all IASE members inviting submissions for the award a number of projects were received for consideration. The convener suggests that the mass but personal email approach be used in future.

**2. Clarity of criteria**

The criteria were given on the ISLP website and emphasised that nominated projects should involve cooperation between at least two organisations that would not normally work together, have readily accessible materials, international outreach or appeal and pedagogically sound materials for raising capability in statistical literacy. Not all the submitted projects met the criteria of either being cooperative projects or being aimed at raising statistical capability. Several were rejected by the convener before being distributed to the other judges. The ISLP Advisory Board should determine the 3 or 4 critical criteria and highlight these in all publicity material. It is recommended that a project should:

- involve at least two organisations that would not normally work together (i.e. NOT universities and schools?)
- be designed to raise statistics capability
- have potential or existing international outreach

**3. Timing**

A standard timeframe be established (working backwards from the final date awards need to be known) that allows adequate time for the international judges to evaluate the submissions and negotiate the winners.

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and **ISLP**  
websites

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