ISLP Newsletter
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PAKISTAN

The International Day of Statistical Literacy: An important initiative of ISLP

Saleha Naghmi Habibullah*

In today's data-driven world, the importance of promoting statistical literacy all over the world cannot be over-emphasized. For more than two decades, the International Statistical Literacy Project (ISLP) has been playing its role in this regard. One of its latest initiatives is the launch of the International Day of Statistical Literacy, an annual event to be organized during April/May every year. I hope you will enjoy this edition of the ISLP Newsletter, which is a themed issue for the event.

The boom of online real-time interaction in the post-COVID era has brought new opportunities such as networking with colleagues located in different parts of the world for sharing experiences and best practices. Operating in a virtual environment enables more equal participation worldwide. Whereas in the past years, ISLP country coordinators were doing a lot of good work in their countries without much interaction with their counterparts in other regions of the world, the recently launched **Online Meeting with Country Coordinators (OMCC) Series** leading to an online conference by the name of **International Day of Statistical Literacy (IDSL)** along with a **Pre-Conference Workshop** has become possible due to the widespread recognition of the advantages linked with online interaction.

IDSL 2024 is to be held on Tuesday, 21st May 2024. The conference will be a mix of keynote addresses by invited speakers and contributed presentations by ISLP country coordinators and winners of competitions being organized by ISLP. The various sessions of IDSL 2024 will thus highlight initiatives that are being taken and can be taken for the promotion of statistical literacy around the world by its 175 country coordinators in 92 countries.

I would like to invite everyone interested in statistical education in general and statistical literacy in particular to join us at the first-ever International Day of Statistical Literacy. Registration is free of cost and can be accomplished by filling out the online registration form available at:https://docs.google.com/forms/d/e/1FAIpQLSfZYnoMccfOmu5EI3M6izIB1Mo-88_BVpAfq_7ZnlgoILIlog/viewform

I am confident that you will find IDSL 2024 an interesting and informative conference which, along with a number of invited and contributed sessions, contains opportunities for networking with colleagues from distant countries of the world during the two breakout sessions included in the conference (in addition to exchange of email addresses using the chat feature of the video-conferencing mechanism).

The International Day of Statistical Literacy is just a few days away.

Please secure your place at this event by registering without delay.

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International Statistical Poster Competition 2024–2025

The Poster Competition has started in February 2024.

Participating countries can submit winning posters until 20.4.2025.

To sign up, please contact islp.coordination@gmail.com

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IRELAND

Technology, AI and statistical literacy

Steve MacFeely*

In the past year or two there has been much discussion regarding AI, provoked in no small measure by the rapid advances in Generative AI. I, like everyone else, was curious to understand how good these new tools were – was it all hype or can ChatGBT and its competitors really produce good quality material? Naturally, I experimented with topics I knew well so that I could assess the quality. In general, the output wasn't bad – and I'm sure with practice and more refined queries I could elicit better output. The answers to my queries produced, for the most part, material I expected to see. It even produced a few surprising but useful suggestions that I hadn't thought of myself. But perhaps, not surprisingly, it also produced some material that while not wrong per-se was not correct either.

In April this year, I was invited to speak as part of a panel discussion, hosted by UNHCR, on the pros and cons of Generative AI. As part of my intervention, I reflected on my experiences using Generative AI, with the conclusion that now, more than ever statistical literacy will be essential. In particular, the abilities to understand and critically assess nuance, and the ability to exercise a healthy skepticism. One of the main dangers I anticipate from AI, is not from AI itself, but with our use of AI – our willingness to believe everything we read on a screen; our inability to think 'hang on a second, that can't be true'.

These skills – critical assessment and skepticism – are becoming ever more essential when dealing with other forms of technology and AI too. Recent engagement with a technology platform/search engine provided a graphic illustration. Everyone wants to access and repackage UN data – this in itself is not a problem – the data are produced as public goods, licensed under CC 4.0 BY to facilitate usage. However, many platforms are atomizing the data and then re-assembling the data in a way that facilitates data matching. Sounds good! But, in doing so, they are often reassembling data to make inappropriate comparisons. An eagle-eyed reader may spot this, but the average consumer most likely will not.

The lesson? Technology and AI are unquestionably powerful tools that can yield many benefits. But used carelessly, they may produce erroneous results, with potentially very serious consequences. We all have a responsibility to exercise caution – to critically assess any information and statistics we are presented with. Perhaps counter intuitively, technology and AI have increased the need for statistical literacy, rather than reduced it.

GHANA

Promoting gender balance in statistical literacy in Ghana

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Abstract

This paper explores the imperative of promoting gender balance in statistical literacy, focusing on Ghana. It begins by highlighting global and Ghanaian gender disparities in statistical involvement and acknowledges governmental efforts while emphasizing the need for broader action. The importance of monitoring gender representation in education is underscored, alongside challenges like societal expectations and educational barriers. A number of solutions are suggested, such as encouraging gender-inclusive teaching, dispelling myths, and establishing safe spaces in educational settings. Overall, the paper calls for collaborative efforts to achieve gender balance in statistical literacy in Ghana

Introduction

Statistical literacy is the ability to read and interpret summary statistics in the everyday media: in graphs, tables, statements, surveys and studies. Statistical literacy is needed by data consumers – students in non-quantitative majors: majors with no quantitative requirement such as political science, history, English, primary education, communications, music, art and philosophy (Schield, 2010). In October 2018, the Global Partnership for Sustainable Development Data found that less than 21% of the world's researchers in the areas of science, technology, engineering, and mathematics are women (Adams and Baddianaah, 2023). In Ghana, according to the UNESCO Institute of Statistics, women account for 25% of the total researchers in the same field. However,

the government of President Akufo-Addo has made it a policy that every year, through the Ghana Statistical Service, 1000 graduates are enrolled to educate people in the countryside on the national census and the use of data for national development (Appiah-Castel et al., 2020). This initiative is worthy of praise.

This research work is to create awareness of the gender disparities in statistical involvement in Ghana and to kindle the commitment of the statistical fraternity, government, non-governmental organizations, and private institutions in addressing the gender gap. In view of the availability of only a few empirical evidence in Ghana that specifically aims to promote or advocate for the increase of women's participation in statistics, this work is anticipated to make both academic and policy impact.

Statistics on gender representation in statistical education

Prior studies have indicated the existence of racial and gender disparities in the education sector. To attain gender equality, more effort needs to be done in many sectors, even if there is some data that suggests gender disparities are decreasing. By investigating gender representation in the field of education, we are enabling policy makers to develop informed interventions for change. Secondary level education, sometimes referred to as high school education, is a key site in which gender disparities in statistics may emerge. In the UK, the gender split for students choosing to study A-Level statistics qualification has been explored. This is a nationally recognised qualification that is studied by 16 to 18 years olds and is often used as an entrance requirement for UK university courses. In 2012, 78% of students who were awarded an A-Level in statistics were male. A recent analysis of the 2018 A-Level results found that 68.6% of statistics A-Levels were achieved by male students (Plaister, 2021). Although this percentage has reduced over time, the disparity in male and female students studying statistics at this age is concerning. The

data regarding gender representation in higher education amongst both students and staff was less accessible and less conclusive as there is currently no statutory requirement for organisations to publish the data.

Promoting gender balance in statistical literacy in Ghana

Advocating for gender equality in statistical literacy is essential for achieving gender balance and empowering women in decision-making procedures. Within the context of Ghana, females are frequently marginalized in statistical domains, consequently resulting in the absence of gender- specific data and a biased comprehension of gender-related concerns. To promote gender balance in statistical literacy in Ghana, several steps can be taken:

1. Increase awareness: Increase public, policymaker, and stakeholder understanding of the value of statistical literacy and the necessity of gender parity in this field.
2. Improve data collection: Ensure that data collection processes are gender-sensitive and capture information on both men and women. This can be achieved by training data collectors on gender-sensitive data collection techniques and incorporating gender- disaggregated questions in surveys and censuses.
3. Enhance statistical capacity: By giving female statisticians and data analysts the assistance and training they need, you may contribute to the growth of statistical capacity, especially among women. This could lead to a higher proportion of women working in statistical fields and better quality gender-disaggregated data.
4. Promote gender-responsive policies: Motivate policymakers to use data that is gender- inclusive to enhance gender equality and inform decisions. Ensuring that policies are
5. tailored to the unique requirements and obstacles encountered by men and women can be facilitated by doing this.

Identified challenges in achieving gender balance

Societal expectations and cultural influences

In Ghana, conventional gender roles and expectations frequently suggest that some areas, particularly mathematics and statistics, are more acceptable for men. This societal perception can discourage girls from pursuing education and careers in statistical literacy, leading to a gender imbalance in this field (UNICEF, 2020). Additionally, cultural beliefs about the roles of women in the family and society may prioritize domestic responsibilities over academic pursuits, further limiting girls' access to statistical education.

Educational barriers for specific genders

Educational gaps between genders exist in Ghana, with girls experiencing larger barriers to attaining decent education. Early marriage, teenage pregnancy, and domestic tasks may all contribute to girls' decreased attendance and retention in school. Furthermore, a dearth of female role models in statistical professions can propagate the myth that these fields are unsuitable for women, deterring girls from studying statistics.

Overcoming societal barriers to statistical literacy for all genders

1. Promoting gender-Inclusive education: Formulate strategies and initiatives that advocate for gender equality in education, establishing an environment where every gender is provided with an equitable opportunity to attain top-notch education. These efforts should aim to tackle obstacles like poverty, underage matrimony, and gender-related aggression, which tend to hinder girls' academic achievements significantly.
2. Challenging gender stereotypes: Launch awareness campaigns to challenge gender stereotypes and promote the idea that statistical literacy is valuable for individuals of all genders. Encourage communities to recognize and support the educational aspirations of both boys and girls, fostering an environment where all individuals feel empowered to pursue statistical education.
3. Providing mentorship and support: Establish mentorship programs and support networks for girls interested in statistical literacy. Connect aspiring learners with successful women in statistical fields who can serve as role models and provide guidance and encouragement. By showcasing diverse role models, girls can envision themselves pursuing careers in statistics and related fields.
4. Integrating statistical literacy in curricula: Integrate statistical literacy into school curricula at an early age, ensuring that both boys and girls have access to foundational statistical education. Make statistics more approachable and relevant for all students by offering dynamic and captivating learning opportunities that highlight the real-world applications of statistics.

Role of educational institutions in promoting gender balance

1. **Curriculum development and gender-responsive teaching**
   Through the creation of gender-responsive curriculum that take into account the varied needs and experiences of students, educational institutions can support gender balance. Integrating gender-sensitive content across various subjects helps challenge stereotypes and promote gender equality from an early age. Moreover, providing training to teachers on gender-responsive teaching techniques will arm them with the necessary skills to establish welcoming educational settings that uplift students from all gender backgrounds.
2. **Providing equal access to education**
   Providing fair access to education is crucial for fostering gender parity. Institutions of higher learning must make a concerted effort to remove obstacles—such as budgetary limitations, societal norms, and discriminatory practices—that disproportionately impact particular genders. This includes implementing policies and programs to support marginalized groups, providing scholarships, and offering flexible learning options to accommodate diverse needs.
3. **Fostering gender-equal participation**
   Promoting gender balance extends beyond enrollment numbers to fostering gender-equal participation in all aspects of academic life (Ministry of Education, 2020). Educational institutions can encourage girls and women to pursue traditionally male-dominated fields such as science, technology, engineering, and mathematics (STEM) through targeted outreach programs, mentorship initiatives, and exposure to successful role models. Similarly, efforts should be made to address gender disparities in extracurricular activities, leadership roles, and decision-making processes within educational institutions.
4. **Creating safe and inclusive spaces**
   Educational institutions are entrusted with the duty to establish secure, encouraging, and welcoming environments that foster a sense of worth and recognition among individuals of every gender. Moreover, this entails the enforcement of strict protocols against gender-related violence, the provision of gender-specific counseling and assistance programs, and the promotion of gender-related topics to the community through seminars, workshops, and student-led projects. Schooling establishments can help dismantle barriers and advance gender equality by cultivating an atmosphere of mutual respect and understanding.

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GERMANY

Promoting statistical thinking in elementary and primary education

Daniel Frischemeier*

Developing early statistical literacy, reasoning and thinking has become increasingly significant in the contemporary data-driven world. Elementary and primary education plays a pivotal role in fostering a foundational understanding of data and statistics. This short report delves into some recommendations for nurturing statistical thinking at this early level, with a particular emphasis on (1) experiencing fundamental data operations, (2) the use of digital tools, and (3) project-based learning through the PPDAC data analysis cycle. I will share some thoughts about these aspects (1)-(3) and then I will derive short conclusions and implications for promoting statistical thinking in elementary and primary education.

1. **Getting to know fundamental data operations at an early stage and different levels of representation** Children exposed to basic data operations at early stages develop proficiency in handling data at different levels of representation. This initiation into the data world starts with simple exercises of sorting and categorization which can already be enhanced at the Kindergarten level. Building up on that, children can use tangible tools like plug-in cubes, building blocks, and data cards, which serve as physical representations for their univariate and bivariate data exploration. These activities can graduate from handling the distribution of one variable to exploring relationships between two or more variables.
2. **Digital exploration of large data sets** Digital tools, such as TinkerPlots or CODAP, allow already young students to explore large datasets (large number of cases, large number of variables) based on their investigative questions. These digital tools provide a smooth transition from physical data cards to digital data exploration: Building upon initial data exploration with physical data cards, TinkerPlots acts as a bridge to more sophisticated digital data exploration. TinkerPlots is specifically designed to introduce students to statistical reasoning through an interactive interface that utilizes operations such as “Separate,” “Stack,” and “Order” to create graphics, echoing the operations used with physical data cards. For our projects TinkerPlots serves as an adequate digital tool to introduce young students to the exploration of larger datasets and into more sophisticated statistical activities (multivariate data exploration) and the realization of statistical projects (embedded in the PPDAC cycle, see (3))
3. **The PPDAC Data Analysis Cycle Experience and project-based learning** Familiarity with the Problem, Plan, Data, Analysis, and Conclusion (PPDAC) cycle at an early stage embeds a structured approach to data exploration. It instills a methodical way of statistical thinking, from the formulation and generation of questions to the interpretation of results.

Implications and final considerations The use of real and meaningful datasets can and should already be implemented in primary school classrooms, the documentation (for example data posters) can and must be considered as a fundamental activity. Connecting TinkerPlots with data card activities ensures that students’ learning experiences are holistic. This dual approach allows students to understand data through various representations, making the transition from physical manipulation to digital analysis smoother and more intuitive. The promotion of early statistical thinking is essential for developing critical thinking and data analysis skills.
By integrating both physical and digital tools, such as TinkerPlots, into the curriculum, educators can provide a robust foundation for statistical learning. In primary schools across Germany, we have realized several educational modules into the curriculum, allowing young students to engage deeply with data-rich projects. They use TinkerPlots to explore and analyze large and multivariate datasets. Since 2013, over 20 projects centered on data exploration have been introduced in schools throughout North Rhine-Westphalia, with participation from approximately 450 elementary pupils. TinkerPlots has played a key role, giving these students the means to examine extensive datasets and craft detailed visual presentations for their poster projects. Furthermore, these data posters serve as an outstanding way for students to synthesize and showcase their analytical insights.

The ideas and experiences of the primary school students´ projects have been presented in the frame of the ISLP webinar “The sum is greater than its parts- promoting statistical literacy worldwide” in February 2024. For further information on my data projects in primary school, please contact me: dfrische@uni-muenster.de

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USA

JMP Student Subscription: **Statistical software and learning resources accessible for all**

Curt Hinrichs*

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If you are interested in giving JMP a try, we also provide several free learning resources including short videos, case studies and recorded webinars which can be accessed at www.jmp.com/academic. We will also provide a short tutorial on the next ISLP Webinar on April 17th.

Finally, the academic team at JMP is here to see you succeed and welcomes your questions and feedback at academic@jmp.com.

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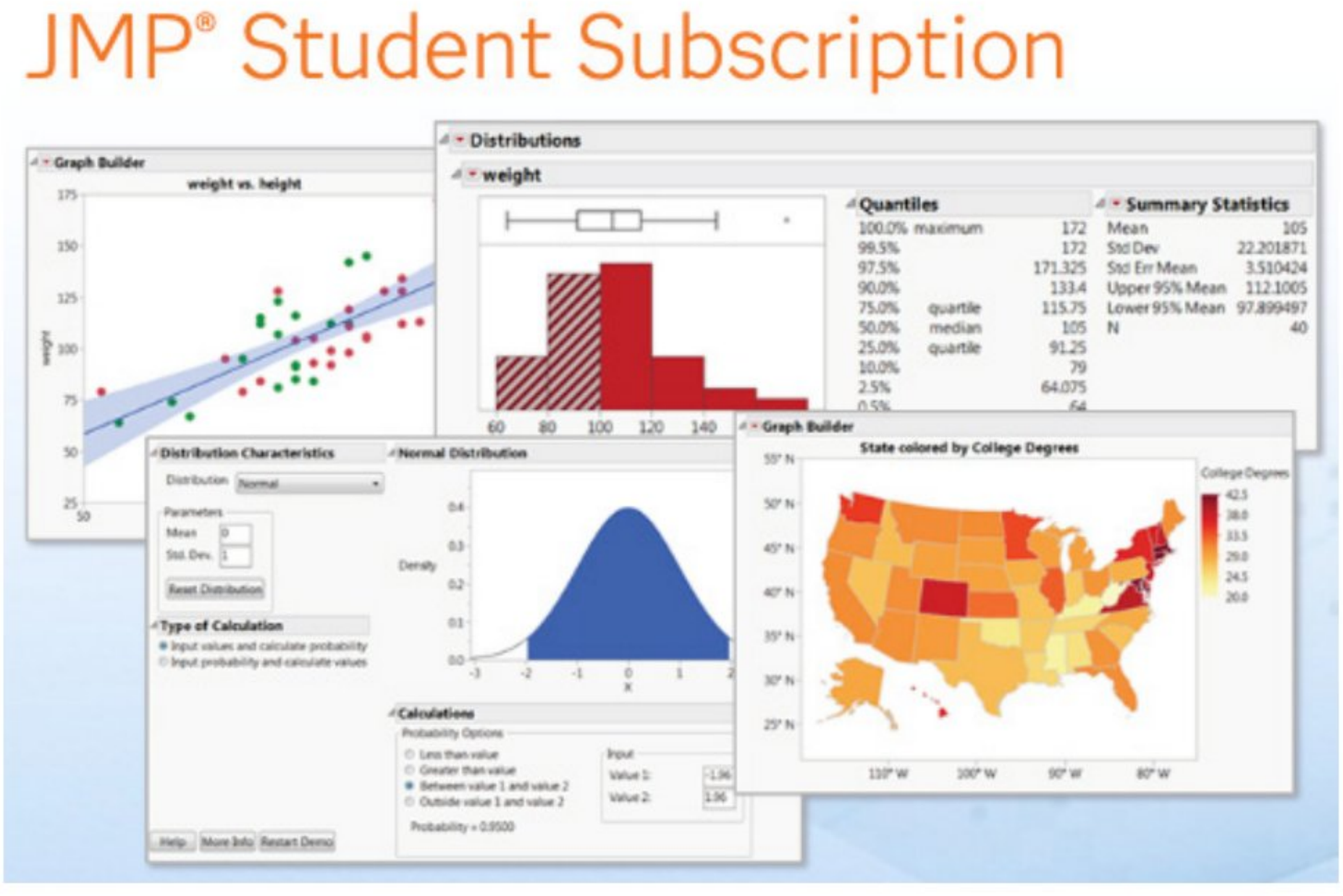

DENMARK

GIST introduces the STAT tool:

Accessing competencies in presenting, communicating and disseminating statistics to users

Charlotte Juul Hansen*

The **S**tatistical **T**raining needs **A**ssessment **T**ool (STAT) is a tool developed for National Statistical Offices (NSO) to assess and analyze skills gaps of their staff and decide on how to prioritize and meet training needs by using different types of informal and formal learning approaches. STAT was developed by the Global Network of Institutions for Statistical Training (GIST), and ISLP has provided input to its development.

STAT focuses on all types of job functions within an NSO including staff working in statistics production, IT, communication, management, finance, HR, and other administrative functions. Staff working with statistics within the National Statistical System (NSS) can also be included in the assessment.

STAT includes *competencies relevant to the presentation, communication, and dissemination of statistics* which is particularly relevant for ISLP. These competencies are measured both for people working with statistics production and for communication staff.

How does STAT work?

Assessing

STAT uses three questionnaires set up in Google Forms to assess the levels of skills and training needs. The questionnaires, which include 157 skills relevant to the different types of job functions, address different respondents and purposes:

1. A questionnaire for staff at the NSO to self-assess the individual level of knowledge and training needs.
2. A questionnaire for managers at the NSO to identify gaps in their team's ability to perform current as well s future tasks.
3. A questionnaire for staff working with statistics production at other institutions within the NSS (i.e. ministries and other public institutions).

Skills related to presenting, communicating, and disseminating statistics to users cover different aspects such as competencies in writing engaging content, developing infographics, understanding user needs, and applying initiatives to increase statistical literacy.

Since skills requirements can vary from country to country, the questionnaires are designed to be flexible, and can thus be accustomed to meet specific requirements of a country.

Analyzing

STAT provides recommendations on how to analyze and visualize data from the surveys. To help facilitate this process, STAT provides R codes to extract the data from Google Sheets to Power BI, which is set with ready-made visualizations to help the analysis.

Prioritizing

The next step is to prioritize among the many training needs that the survey will most likely show and decide on which training is most crucial and beneficial for the organization. STAT provides recommendations to help facilitate this process.

Meeting training needs

Once the NSO has the list of priority training, it has to decide on how the needs can be met e.g. by using in-house resources where staff train other staff, free online courses, and trainers from academia and the private sector.

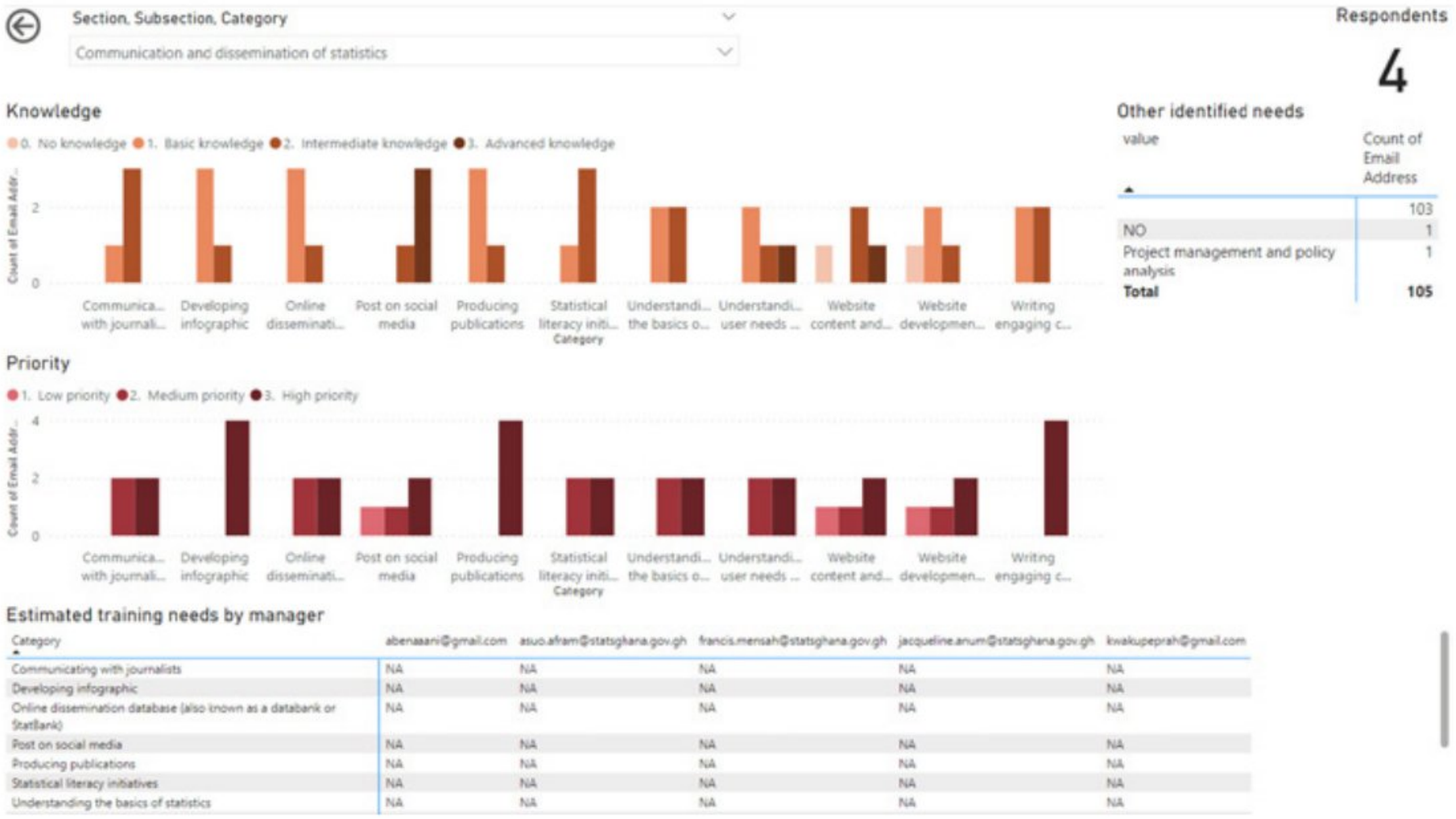

Photo: Relevant skills for staff working with communication and dissemination of statistics.

The NSO can even with limited funds develop a training plan. Focusing on informal learning approaches, free e-learning and a few facilitated face-to-face courses by using in-house expertise is a way to get started without making the task too costly.

STAT can also be used to identify those training needs where support from external partners is needed if in-house or other nationally available resources e.g. from academia are lacking.

STAT is currently available in English but will be translated into Spanish, French, and Arabic.

For more information on STAT, please visit the website: https://unstats.un.org/gist/resources/statistical-training-needs-assessment-tool/

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Implementation of STAT

The NSOs in Colombia and Ghana have taken a very active role as the first countries to implement STAT. Other countries have expressed their interest and work will commence in these countries soon.

INDONESIA

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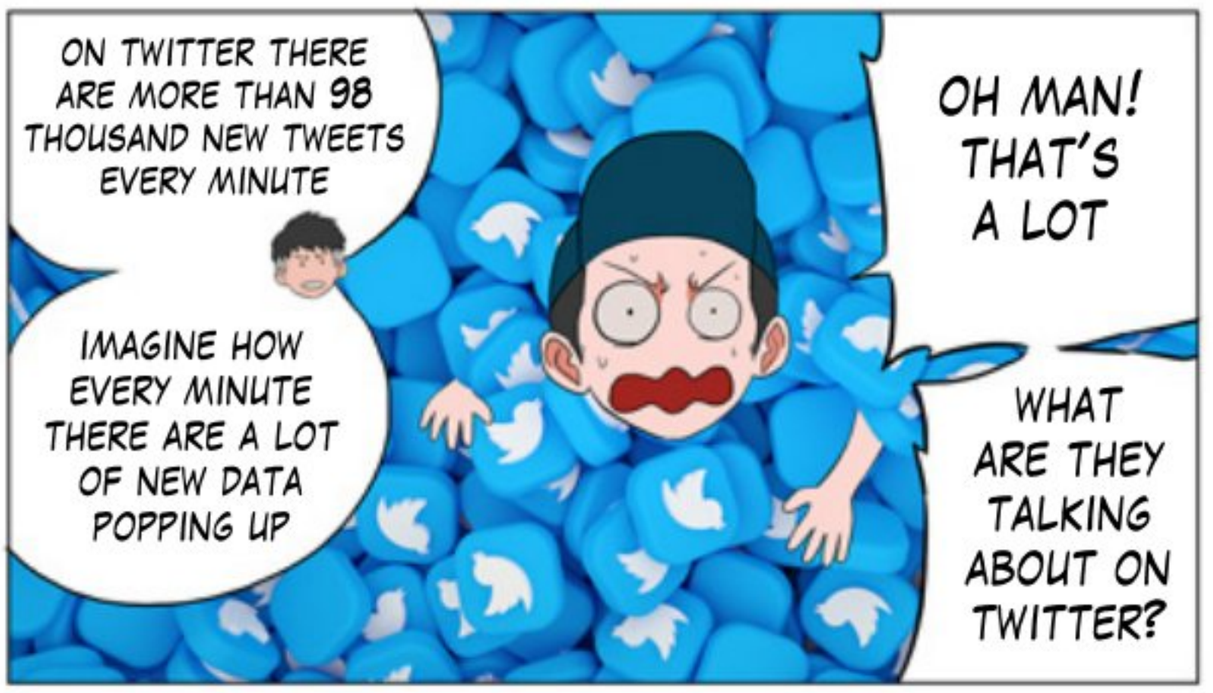

MEXICO

Descripción del nivel de lectura de tablas estadísticas en estudiantes universitarios mexicanos

Javier Alonso Trujillo *

Introducción. Como todos sabemos, el principal objetivo del Proyecto Internacional para la Alfabetización Estadística (ISLP) es promover, a través de diversas actividades, la alfabetización estadística en el mundo, entre niños, jóvenes y adultos, en todos los ámbitos de la sociedad. En México, un grupo de profesores universitarios interesados en contribuir con la alfabetización estadística, han unido sus esfuerzos con la finalidad de realizar un estudio descriptivo que permita conocer el nivel de lectura de tablas estadísticas que poseen los estudiantes de las carreras de Biología, Enfermería, Optometría, Psicología y Medicina. Tanto los profesores como los estudiantes que participamos en el estudio estamos adscritos a la Facultad de Estudios Superiores Iztacala, de la Universidad Nacional Autónoma de México. Los nombres de los profesores son los siguientes; Irma Estrella Beatriz Manuell Cacheux (Biología), Baeza Martínez Damariz Adriana (Enfermería), Roxana Danet Vazquez Jurado (Medicina), Alma Delia Lupercio Lozano (Psicología), Myrna Miriam Valero Mota (Optometría), Abraham Alonso Ricardez (Enfermería) y el autor de esta líneas y coordinador del grupo Javier Alonso Trujillo (Enfermería).

Equipo de trabajo multidisciplinario que participa en el proyecto del análisis del nivel de lectura de tablas estadísticas, Facultad de Estudios Superiores Iztacala, UNAM.

Tablas estadísticas. Una tabla estadística es una estructura de datos que organiza información de manera sistemática para facilitar su comprensión y análisis. Las tablas estadísticas han desempeñado un papel fundamental en la toma de decisiones a nivel profesional considerándose un pilar de la alfabetización estadística. Asimismo, su correcta lectura y comprensión en la vida cotidiana son esenciales para que la ciudadanía tome mejores decisiones (Pallauta, 2023).

No obstante, en la práctica docente universitaria, se ha observado que los contenidos curriculares relacionados con la construcción, lectura, análisis e interpretación de tablas estadísticas, por lo general son abordados por el profesorado como un tema básico, con rapidez y escaso análisis de su contenido, quizás suponiendo que

no representan una gran dificultad para su aprendizaje en el alumnado universitario. Por esta razón, nos interesó indagar acerca de la frecuencia con la cual, una muestra de estudiantes de diversas carreras del área de la salud, son competentes para realizar la lectura de tablas estadísticas en distintos niveles de complejidad. Nivel 1: Lectura de los datos. El estudiante lee los datos de la tabla sin realizar ningún tipo de comparación u operación aritmética. Nivel 2: Lectura entre los datos. El estudiante lee los datos y los compara a través de operaciones aritméticas. Nivel 3: Lectura más allá de los datos. El estudiante lee los datos y obtiene información que no aparece directamente en la tabla, pero que se puede deducir de forma lógica. Nivel 4: Lectura detrás de los datos. El estudiante lee los datos de la tabla, realiza una valoración crítica de su contenido y puede aceptar o rechazar una afirmación acerca del contenido de la tabla estadística (Friel, 2001).

Algunos resultados. El 99.3% de todos los estudiantes observados son moderadamente competentes para la lectura de los datos. El 78.1% del total de participantes es competente para la lectura entre los datos, destacando los estudiantes de Biología y Psicología con el 92.6% y 88.5% respectivamente dentro de su carrera. Solo el 26.5% del total de participantes es competente para realizar la lectura más allá de los datos, predominando notablemente los estudiantes de Biología con el 63% dentro de su grupo. Finalmente, el 42.4% de todos los estudiantes observados son competentes para llevar a cabo lectura detrás de los datos, destacando nuevamente los estudiantes de Biología con un 55.6% dentro de su grupo.

Conclusión. Las tablas estadísticas es un tema dentro de la curricula universitaria que debe ser considerado como un elemento importante en la alfabetización estadística y en la formación académica de los estudiantes. Se observó que, en los primeros tres niveles de complejidad de lectura de tablas estadísticas, a mayor complejidad, la frecuencia de competencia disminuye, afortunadamente, el mayor nivel de complejidad (Nivel 4: Lectura detrás de los datos) no mantuvo la tendencia hacia la baja, sino que alcanzó una frecuencia del 42.4% del total de los participantes, resultado ligeramente alentador.

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CAP VERDE

Ine of Cabo Verde commits heavily to the promotion of statistical literacy

Carmem Cruz*

Cabo Verde is a small archipelagic country located approximately 500 km off the West Coast of Africa. It is made up of 10 islands of volcanic origin. It has a relatively new National Statistics Institute (NSI), INECV, with 27 years of existence, whose mission is to produce and disseminate, efficiently, quality official statistical information [reliable, current and punctual] necessary for objective knowledge of a changing society, that helps Cabo Verdeans to better understand their country, its population, its resources, its economy, its society and its culture.

Active participation in society requires citizens to have basic statistical knowledge, but it also requires the ability to interpret, communicate, reflect and criticize statistical ideas. Statistical information covers a wide range of areas and subjects, many of which are very present in daily life. That's why INECV has been strongly committed, since 2018, to promoting statistical literacy, being aware of the low statistical culture among citizens in Cabo Verde.

INECV has developed a project to promote statistical literacy, targeting students in primary and secondary schools, the government, journalists, businesspeople, the community, etc. Most of the activities cover primary and secondary schools, encouraging students to develop skills to interpret, evaluate and discuss statistical information.

Over the years, INECV held several lectures in schools, promoted school visits to INECV, trained journalists on various topics of an economic nature, met with businesspeople to encourage them to use statistical information in decision-making and carrying out market studies, and met with community associations, among other activities.

Within the school community, initiatives are developed in partnership, which aim to improve the understanding of statistics, raise awareness of the importance and relevance of statistical knowledge and motivate interest in the use of statistical information in school work. From February to March this year, INECV held three lectures

in primary schools, aimed at 5th and 6th year students, within the context of the mathematics discipline, on the theme "Statistics in Life." These lectures lead students to play games involving a decision-making process with statistical data from the locations where they live, deciding on the best location for implementing certain infrastructures. The same theme was taken to a secondary school, specifically to 10th grade students. Two more lectures were also held in secondary schools, aimed at students in the 10th, 11th and 12th years, on the themes "Cabo Verdean Population" and "Importance of Statistics".

INECV also received study visits from students in the 10th year of a secondary school and students in the 5th and 6th years of guided study from a community association. In all of these activities, INECV offers statistical publications for the libraries of these schools.

Cabo Verde's INE joined the ISLP Statistical Literacy Project. As part of this partnership, in collaboration with the National Coordinator of the ISLP Statistical Literacy project, a meeting was held with the Minister of Education to determine the best way to get students to participate in the national and international ISLP competitions. It is currently in the contact phase with the National Directorate of Education to implement this initiative.

This year, as activities of this project, we plan to:

- continue promoting activities in all schools in the country;
- participate in the ISLP national and international competitions;
- take statistics to communities through direct awareness-raising regarding the use of statistical data and participation in surveys/censuses;
- training of journalists;
- production of 1-minute radio programs on various topics;
- creation and dissemination of videos;
- production and editing of a statistical literacy magazine;
- and promotion of INE Porta Aberta (holding seminars, workshops, conferences, and visits to its facilities).

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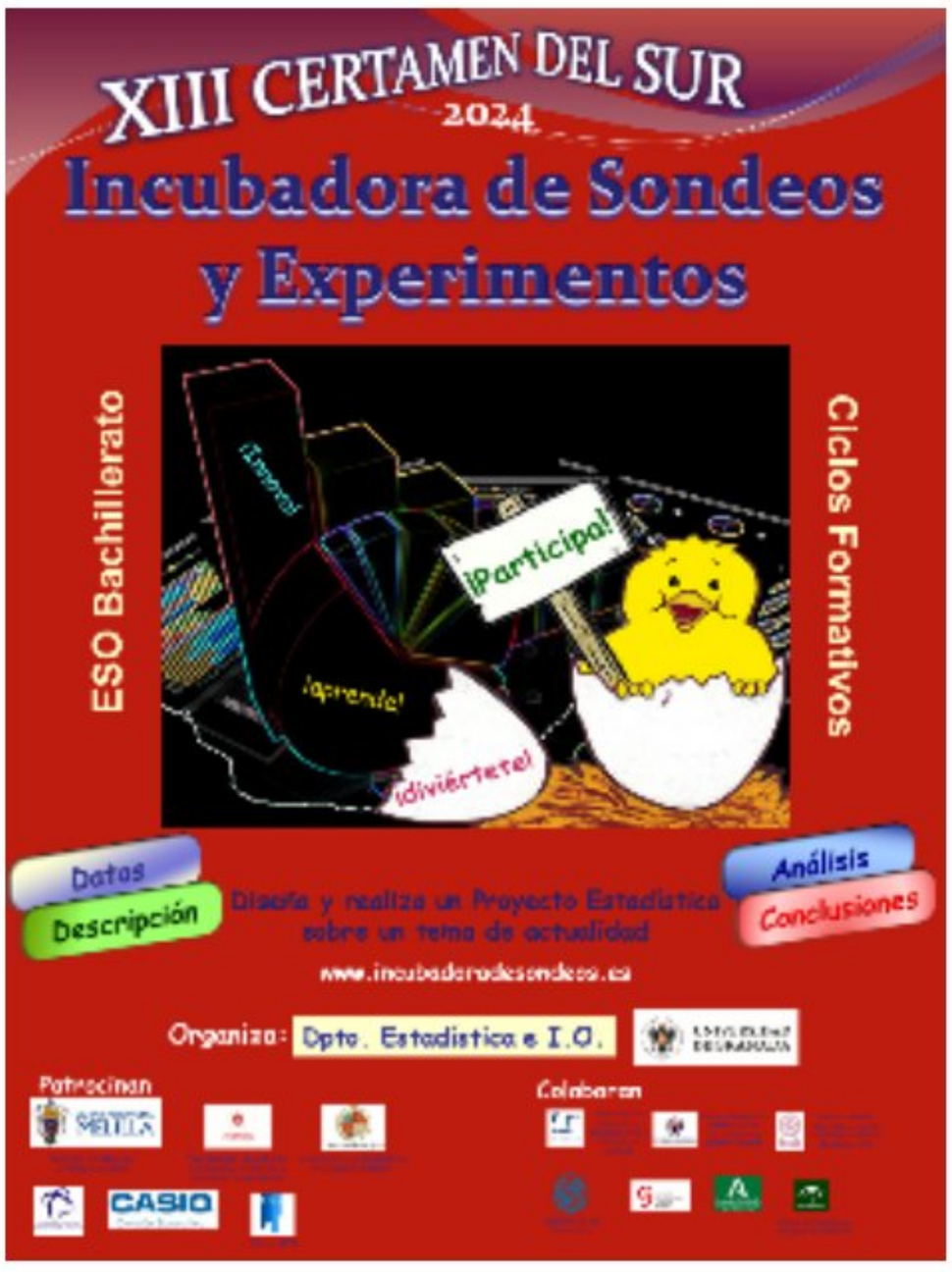
SPAIN

Statistical literacy through Certamen del Sur “Incubadora de Sondeos y Experimentos”

María Jesús García-Ligero Ramírez*

Abstract. We are living in a time of revolution around data, due not only to their abundance, but also to technologies that provide new ways of storing and analyzing information. Against this backdrop, it is necessary to explain the importance of Statistics and Data Science to pre-university students. To this end, an activity, based on project-based learning, is developed. This consists of a competition in which students participate by completing a research project in response to a question of interest that requires the use of statistical techniques.



1. Introduction

The world in which we live is characterized by the large amount of data that is continuously generated. These data not only comes from data tables with rectangular structure, but also from different mechanisms such as sensors, images, and clickstreams, giving rise to more complex and diverse data. In this situation, it is essential to know how to extract information and knowledge from data to help decision-making or problem solving in different areas such as: socioeconomic, health, technology, biology, etc. Due to the importance of data today, members of society and, in particular, pre-university students must obtain skills in data analysis. For this reason, a priority is to promote the study of statistics and data science in compulsory education so that our students are not influenced by false interpretations of data regarding important issues in our daily lives. However, despite the boom, importance and transcendence of this field, currently adolescents are hardly introduced to this subject in pre-university education. Although the teaching of statistics appears in secondary and baccalaureate curriculums, it is too often relegated to the end of the year, with the consequence that it is not always taught or the coverage is very limited. This fact is corroborated by the latest Pisa reports (https://www.educacionyfp.gob.es/inee/evaluaciones-internacionales/pisa.html).

This problem is not only in the Spanish education system. In most countries the study of this discipline is not adequate. For this reason, in recent years the academic world and different institutions have been looking for and implementing initiatives to solve this lack in pre-university students. For example, the International Statistical Literacy Project (ISLP) has been supporting

several initiatives, such as the poster competition, for more than one decade, with the aim to support, create and participate in activities that promote statistical literacy around the world. The European Statistics Competition is an initiative jointly promoted by the European Statistical Office, Eurostat, and the statistical institutes of several European countries. Sociedad de Estadística e Investigación Operativa (Statistics and Operational Research Society of Spain) in its concern for statistical literacy, participates in this competition.

The Department of Statistics and Operations Research of the University of Granada (Spain), aware of this problem in Andalusia and the Autonomous Cities of Ceuta and Melilla, has taken the initiative to support and promote learning and interest in data and statistics among their non-university students. To this end, it organizes a competiton, named Certamen *del Sur "Incubadora de Sondeos y Experimentos"*. This activity consists of developing a scientific project on a topic or question of interest which requires the use of statistics. The aim of this activity is to teach statistical literacy to pre-university students using a methodology based on project-based learning (PBL). This activity's main objective is to allow the student(s) to learn and acquire culture in statistics in an enjoyable way, but it also encourages creativity, awakes the research vocation from an early age, encourages critical thinking, encourages the application of results to decision-making rationally, enhances teamwork, and promotes innovation and entrepreneurship.

2. Description of the activity: Certamen del Sur "Incubadora de Sondeos y Experimentos"

The Certamen del Sur "Incubadora de Sondeos y Experimentos" activity, as we have mentioned, is part of a PBL methodology of a competency and experimental type. The origin of this type of methodology dates back to the end of the nineteenth century, with Kilpatrick (1918) being its precursor, who named it *the Project Method*. Its objective was to awaken the interest of students in learning in an enjoyable way. To do this, students work on learning projects. Kilpatrick's idea has evolved into what is now known as PBL. This methodology consists of the development of projects, by the students with the supervision and support of the teacher, that provide answers to questions on problems of daily life. The aim is to develop knowledge and skills through projects that are attractive to students.

Following PBL methodology, our activity, designed to teach statistics, consists of a scientific project on a topic or question of interest to the students whose treatment requires the use of statistical techniques. This activity is generally carried out in a team of up to four students, and is mentored by a teacher who is in charge of coordinating the students in the development of the project, guiding them and helping them to solve the difficulties they face.

To carry out the project, the team chooses the topic or question of interest, and develops their project using the following scheme:

- Establish working hypotheses
- Propose a possible experiment that allows data to be collected correctly
- Data collection
- Data analysis using statistical techniques
- Conclusions

Once the working hypotheses have been established, high quality data must be collected from appropriate sources. Depending on the study, the data may come from different sources, such as:

- A survey designed by the team on a topic of general interest or interest to the school and/or its environment.
- An experimental plan to compare, for example, two products or two treatments. The proposed experiment may be related to one of the subjects that the students are studying or perhaps deal with some everyday phenomenon about which the students ask themselves a relevant question that can be answered through an experiment with the appropriate structure.
- Use of data that official statistical institutes (EUROSTAT, INE, regional statistical institutes) or similar bodies publicly offer on their websites

Finally, the team makes a report (around 20 pages) in which they record the objective of their project, the process of data collection, description and analysis of the data, the re-sults obtained and the conclusions of the study. The report is sent to the competition website and a jury appointed by the organi-zers of the competition chooses the winners of the different categories (1º and 2º ESO, ages 12-14; 3º and 4º ESO, ages 14-16, and 1º and 2º Bachelor, ages 16-18). Detailed information about the event can be found on the website: https://www.incubadoradesondeos.es/

This activity has been carried out since 2012 and during these years we have been surprised by the topics of the statistical projects that the teams have chosen due to their diversity and originality. Below we present some titles of winning projects:

- A statistical competition between paper airplanes
- The median, statistics or geometry?
- Is there anyone out there?
- What does the air we breathe contain?
- Relationships: the adolescent and his world
- Learning to undertake
- The elixir of eternal youth
- Get them all! Competitive analysis based on the first Pokémon competition
- The hidden memory of the Spanish peseta. Statistical-numismatic analysis (1869-2002).
- Statistical map of happiness in Andalusia.
- The taboo that kills.
- Our parliament.

Winners and jury of the Certamen del Sur "Incubadora de sondeos y experimentos 2023"

As can be seen in these titles, an important characteristic of this learning activity is its interdisciplinary nature, including topics concerning different fields of knowledge. In general, the teachers that serve as mentors are not just mathematics teachers, but also teachers of different subjects.

The goals of this activity are to:

- Increase knowledge and understanding of statistics in an enjoyable way
- Discover the importance and usefulness of statistics in the treatment of real, multidisciplinary and everyday problems
- Increase the use of Information and Communication Technologies (ICT) among students, as these are fundamental tools in statistical analysis.

In addition, when students design their own project they acquire other skills that are no less important than the previous ones:

- Teach the ability to work autonomously
- Encourage critical thinking and teamwork
- Promote creativity and research
- Enhance the confrontation of ideas and opinions

3. Conclusions

As Craig Mundie said, *"data is the raw material of information"*, so it is essential to have a statistical culture that allows us to understand and critically analyze data. We believe that this project helps our non-university students to acquire knowledge in statistics that makes them less susceptible to misinformation and manipulation of information. In addition, this activity represents an important innovation over other types of activities to awaken the scientific spirit. Indeed, when students design their own project, creativity and a critical spirit are encouraged, essential in research. When working as a team, dialogue and the confrontation of ideas and opinions are enhanced. Another novel component of the project is that the work carried out is interdisciplinary since its implementation involves the participation of students and teachers from different areas. Therefore, students learn the role of statistics in all fields, whether scientific, humanistic, or social. The scientific-technical relevance of the project is thus increased exponentially by the universality of statistics.

Reference

KILPATRICK, W. (1918). The Project method: The use of the Purposeful Act in the Educative Process Teachers College, Columbia University.

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EUROPEAN UNION

The European Statistics Competition is ongoing

Martina Skočková*

The European Statistics Competition (ESC) is organised every year for students by Eurostat in strong collaboration with National Statistical Institutes (NSIs). It is designed to get secondary education students involved in statistics, through statistical games and activities that can increase their interest in statistics and therefore their statistical literacy. While Eurostat finances the event, INE Spain has traditionally been the coordinator, applying to the call for proposals that opens every second year. Countries that wish to participate in the competition can do so by answering the call for participation open every year.

The competition is run in two phases. Each country organises a national phase autonomously, choosing their format according to their specific education program. This phase works as a selection phase for the European stage of the competition. After the competition is completed at the national levels, the selected students compete at the EU level to be crowned winner of the European Statistics Competition or win the different prizes made available to the top five teams.

Category A:

Winning team: KOMPOT from Slovenia

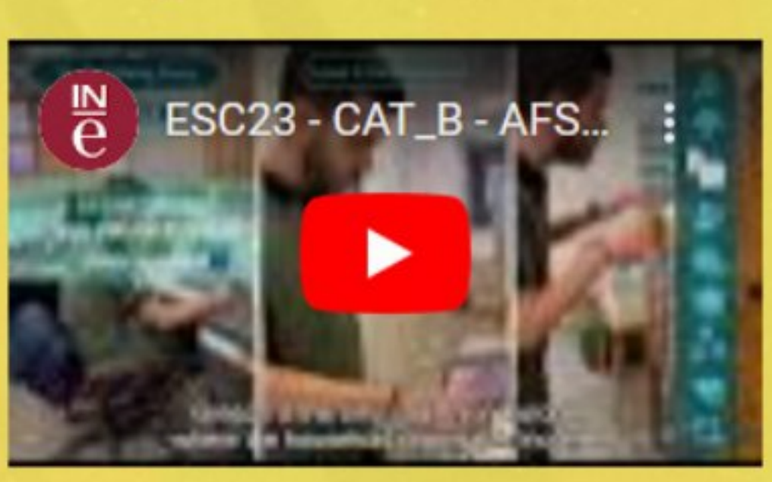
Finalist teams:

- 2. _ALGEBROS_ from Luxembourg
- 3. GAVRAN from Croatia
- 4. SEPTIMAGJH from Slovakia
- 5. JASEJA from Slovakia

Videos of all participating teams in category A

Category B:

Winning team: AFS_GR_1 from Greece



Finalist teams:

- 2. 3VIS from Italy
- 3. BUNGBANDA from Hungary
- 4. BTCMASTERS from Slovakia
- 5. SPOMINCICE from Slovenia

Videos of all participating teams in category B

The 6th ESC was introduced by a very detailed article that appeared in the ISLP newsletter in December 2022 (ISLP_newsletter_2_2022 (iase-web.org)). Winners of the 2022-2023 competition were announced in June 2023, both for the 14–16 age group and the 16-19 age group.

Within the younger age group, the Greek team (AFS_GR_1) stood out for their creativity in producing a video on the different dimensions of well-being in Greece, and ranked before the teams from Italy, Hungary and Slovakia.

In the older age group, the first prize was awarded to the Slovenian team (KOMPOT), for bringing to the screen the dilemma of whether or not to emigrate from Slovenia, backed by data visualisations of indicators of living conditions in the country. This team was followed by the teams coming from Luxembourg, Croatia and Slovakia.

The 2022–2023 competition involved an impressive number of students (more than 19 thousand) from 19 countries. There is therefore great excitement surrounding this year's competition.

The 7th edition of the European Statistics Competition was launched in September 2023, with the beginning of the new school year, marking a new cycle of statistical challenges for pupils and students. The national phase will go on until April 2024, to be followed by the European phase, which will end with the publication of winners in early June.

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ITALY

Statistical literacy activities in Istat

Patrizia Collesi*

From January-March 2024, many activities regarding the development and promotion of statistical literacy were being carried out at Istat, the Italian National Institute of Statistics. The Directorate for communication, responsible for all the activitites, has been working hard to promote them and enlarge participation. From January to March, competitions and school projects are under the spotlight, with the largest competition being the Italian Statistics Olympics.

The fourteenth annual Italian Statistics Olympics: after collecting students registrations during the months of October and November, the tests for the individual phase were held January 16–19, 2024. In 2024, the highest number of participants ever registered (https://www.istat.it/en/archivio/293378): 6,639 pupils coming from 169 schools spread all over Italian regions.

To accommodate this increase in participation (+33,6%), the central Olympiads team added one day for the individual tests. The tests were held for four days in the morning under the supervision of referent-teachers in the participating schools; the students were divided on a regional basis with a maximum number per day (about 500) to permit the online platform to function evenly and to grant the best performance for students.

The individual test lasted 40 minutes: each student answered 20 multiple-choice questions choosing among 5 answers for each question (one of them was always "I do not know"). The order of the questions was randomized to avoid cheating. Some of the questions dealt with the graphic presentation of data, some with theoretical issues, and some with simple calculations. The exercises were prepared by a team of statistical

researchers in methodology at Istat; they were then checked, revised and assessed by University professors of statistics. Since 2019, these questions have been based on official statistical data produced by Istat.

About ten days after the test, official results for the tests were available for teachers and students in pdf format on the Olympiads webpage to be used as learning material. The correct solutions were also added to the pdf. Winners of the individual tests at each level of secondary school are listed in the Italian National Book of Excellent Students. This allows them to qualify for financial prizes, such as free tuition for some Italian Universities.

The first 30 schools in the ranking for I-II year and III-IV year groups are admitted to the group phase, which is held in February and then assessed in March. The small groups of students (3 per each group) who have taken part in the individual phase have to prepare a presentation, usually developed as an answer to a research question, on a topic chosen by the Olympic Committee, comprised of Istat researchers and full professors of statistics in Italian Universities.

The results were published at the end of March, and the top two teams, once again from within each group (I-II year and III-IV year) qualified to participate in the European statistics competition, which has just begun. Good luck pupils!

Of the 20 countries participating in the Statistics Olympics, including 18 countries in the European Union, as well as Liechtenstein and Iceland, Italy has the highest number of participating students. As was stated above, 6,639 students participated from Italy; the overall number across all 20 countries is nearly 22,500. This is very rewarding for everyone who works to make the Statistics Olympics happen in Italy. Statistics is not even a required curricular topic in Italy, but nevertheless the Statistics Olympics are deeply rooted within Italian upper secondary schools. Since 2017, the level of participation has increased each year, with the only exception of 2021, during the Corona-virus period, during which Italian schools underwent continuous closures and openings, and students were more engaged on current didactic activities than on extra-curricular topics.

There will be an award ceremony for the winners; each year the ceremony is held at the Festival of Statistics and Demography in Treviso on Sunday, the closing day, usually in the second half of October. The 3 individual winners per class (12 students) and the top five teams for each of the I-II year and III-IV year groups (50 students), along with their teachers, are invited to take their award plaque in a very lively ceremony together with their teachers.

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PERU

Impulsando la alfabetización estadística y el desarrollo estudiantil a través del concurso de posters: Expectativas de los docentes asesores

Yheni Farfán*, Gladys Ampuero**, Luis Gerardo Mendoza*** y Carlota Valero****

En el contexto de la educación estadística, el concurso de posters del ISLP (International Statistical Literacy Project) no solo representa un espacio para exhibir el talento creativo de los estudiantes, sino también un medio poderoso para impulsar la alfabetización de la estadística y el desarrollo integral de los participantes, así como tiene el potencial de impactar positivamente en la alfabetización de la estadística en diferentes niveles, desde lo local hasta lo internacional, así como la participación de las Instituciones de Educación primaria, secundaria y universitaria, fomentando un mayor interés en la estadística y promoviendo el aprendizaje continuo de esta disciplina.

En este sentido el concurso de posters estadísticos del ISLP 2024-2025 en Perú, se llevará a cabo por segunda vez en el país, considerado por los docentes asesores como una oportunidad significativa para promover la alfabetización de la estadística. Ellos lideran esta iniciativa educativa junto con sus estudiantes mostrando altas expectativas sobre el impacto que la competencia tendrá en el desarrollo académico y práctico de sus estudiantes. Es así que, dentro del ámbito educativo de pregrado de las universidades, los asesores tienen como objetivo principal fomentar un sólido interés por la estadística y fortalecer las habilidades en el análisis de datos reales, con el propósito de preparar a sus estudiantes para enfrentar los desafíos académicos y profesionales con un enfoque científico y riguroso. En este contexto, confían en que el concurso de pósteres estimulará un ambiente de cooperación entre estudiantes de diferentes grupos de edades, diferentes semestres de estudio y utilizando las nuevas tecnologías. Así mismo, los asesores ven en esta competencia de posters una excelente oportunidad para que sus alumnos apliquen sus conocimientos estadísticos en el análisis de problemas locales. Quienes además durante la preparación de los posters, van motivando a sus estudiantes para convertirse en agentes de cambio, empleando la estadística para abordar y resolver las complejidades de su entorno.

Docente asesor de posters

Cabe mencionar que este concurso de posters a nivel de Instituciones Educativas de nivel secundario también cuenta con un docente asesor que está altamente preparado y comprometido, quien desempeña un papel clave en guiar y apoyar a los estudiantes a lo largo de todo el proceso de participación en el concurso. Sus expectativas son fundamentales, ya que están enraizadas en su profundo conocimiento del potencial de sus estudiantes y en su firme creencia en la importancia de la alfabetización estadística en la formación integral de los jóvenes.

ACTIVIDADES EN ESPAÑOL

Asesora de posters

Estudiantes de Piura

En este sentido, los docentes asesores que guían a sus estudiantes en el concurso de posters del ISLP, a nivel nacional suelen tener sus propias expectativas, orientadas tanto al desarrollo de sus estudiantes como al impacto que su participación, entre las cuales se tiene:

- Fomentar la Alfabetización Estadística, a través de la participación de sus estudiantes en el concurso y desarrollen una mayor comprensión, así como aprecio por la estadística, la cual es una herramienta fundamental para la interpretación de datos y la toma de decisiones basada en evidencia.
- Buscan el desarrollo de habilidades transversales en sus estudiantes, como el pensamiento crítico, la resolución de problemas, la comunicación efectiva y la creatividad en la presentación de la información.
- Esperan que el concurso sirva como una plataforma para la colaboración entre estudiantes de diferentes disciplinas en el pregrado de las universidades, promoviendo un enfoque integrado para resolver problemas y representar los datos de manera adecuada y efectiva.
- Valoran la experiencia práctica que sus estudiantes al participar en el concurso, desde la conceptualización del póster hasta la recopilación y análisis de datos, así como la presentación de sus hallazgos.
- Motivan a sus estudiantes a involucrarse activamente en su aprendizaje y explorar nuevas áreas de interés. La participación en el concurso es vista como una oportunidad para que los estudiantes tomen la iniciativa en proyectos de investigación.
- Esperan que la participación y el éxito en el concurso brinden reconocimiento tanto a los estudiantes como a sus instituciones, destacando la calidad de la educación y la investigación que promueven.
- Aprecian la oportunidad de establecer contactos con otros profesionales de la educación y la estadística, lo que puede llevar a futuras colaboraciones y proyectos de investigación.

Finalmente, hay una fuerte convicción entre los docentes asesores de que el éxito y la participación en el concurso de posters del ISLP proyectarán la educación estadística peruana en el escenario internacional, motivando a las futuras generaciones de estudiantes y educadores tanto en el Perú como en el extranjero. La aspiración es que el concurso de posters estadísticos se transforme en una fuerza impulsora detrás de la innovación educativa y el fortalecimiento de una cultura estadística sólida en el país, marcando un hito en el desarrollo de habilidades analíticas críticas para el siglo XXI.

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CHILE

VI Simposio Internacional de Estadística, Probabilidad e Inferencia en el Aula (SEPIA6)

Soledad Estrella*

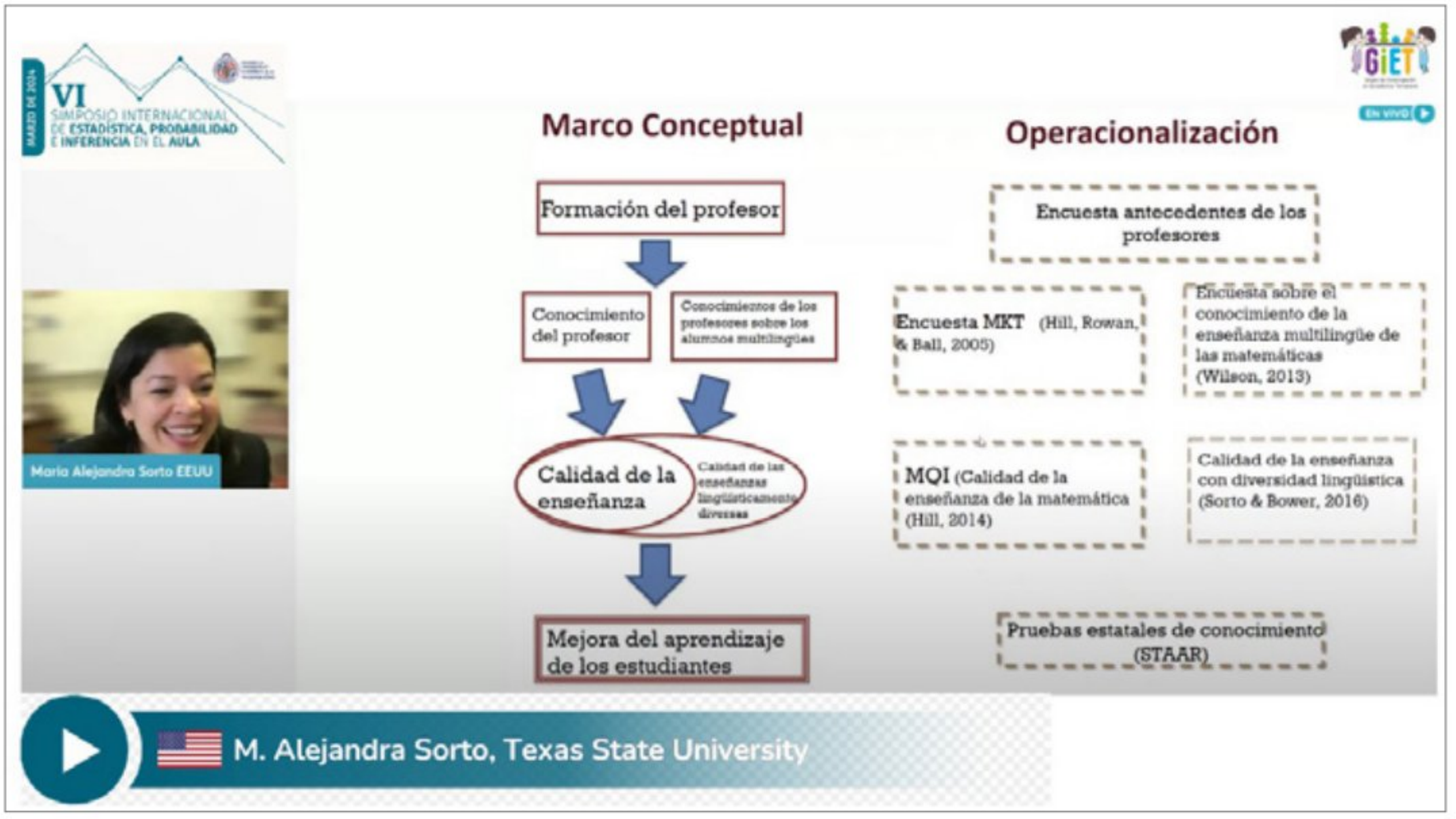
"Imaginando el futuro: Estadística Temprana que inspira una ciudadanía plena en el s. XXI" es el lema que impulsa al grupo de investigación en Estadística Temprana (GIET) de la Pontificia Universidad Católica de Valparaíso, Chile. Este grupo, dedicado a la investigación, innovación y desarrollo, se compromete con la excelencia en la educación en Estadística Temprana. Concibiendo la Estadística Temprana como un programa de investigación emergente dentro del ámbito de la Educación Estadística, el GIET enfatiza el fomento del pensamiento estadístico en las personas, e indaga en nuevos enfoques de enseñanza y evaluación para el aprendizaje de la Estadística y la formación docente.

El 22 de marzo de 2024, el grupo GIET marcó un hito importante en su misión de promover la alfabetización estadística en América Latina, al conmemorar los diez años desde la inauguración del primer Simposio en 2014. Durante este día tan significativo, se llevó a cabo con éxito SEPIA6, https://www.youtube.com/watch?v=d77XgJJDlo8&t=14730s

El Programa contó con **Dani Ben-Zvi**, Universidad de Haifa, Israel, y su conferencia inicial: **"Integración del razonamiento estadístico, el razonamiento científico y la comprensión de la naturaleza de la ciencia a través de la ciencia ciudadana"**, elucidando el diseño e investigación de un innovador programa educativo interdisciplinario, que aprovecha las interrelaciones simbióticas entre estos tres paradigmas de razonamiento: Estadística, Ciencia y naturaleza de la ciencia (NOS). Para llevar esto a cabo, aprovechan el potencial pedagógico de involucrar a los estudiantes en proyectos de Ciencia Ciudadana, derribando los límites tradicionales entre la escuela y la sociedad, estableciendo y fomentando conexiones, situando tanto la investigación estadística como la actividad científica en su núcleo, para simultáneamente apoyar el desarrollo de estas dos modalidades de razonamiento en los estudiantes de secundaria, mientras que simultáneamente fomenta su comprensión de NOS. Aunque a menudo se ven como separadas, la secuencia de aprendizaje que han diseñado se basa en la profunda interconexión de esta tríada. El Dr. Ben-Zvi compartió los hallazgos empíricos que apoyan un resultado teórico potencialmente generalizable: el marco DReaM (Determinista, Relativista y Punto Intermedio) que aclara la trayectoria de desarrollo del razonamiento estadístico, científico y NOS de los estudiantes de secundaria mientras se sumergen en la Ciencia Ciudadana.

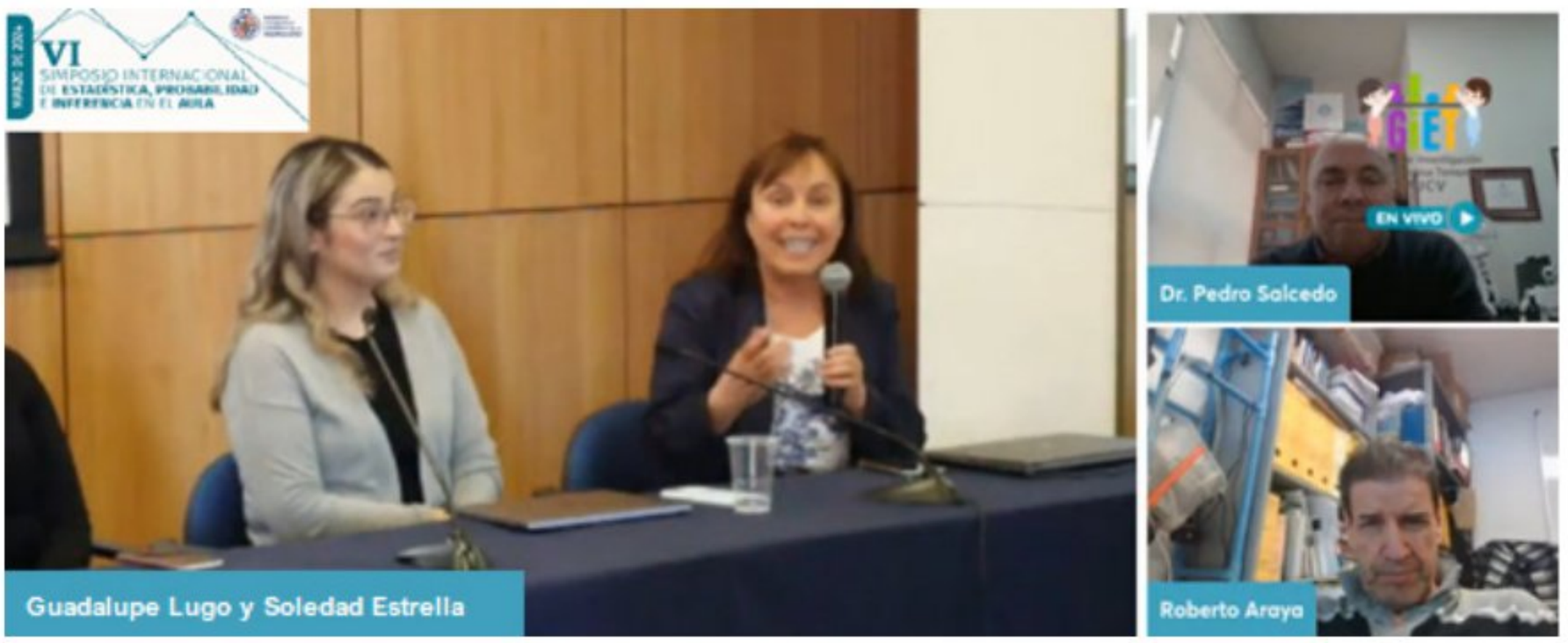
Prosiguió **Ma Alejandra Sorto**, de Texas State University, EEUU, y su conferencia **"La enseñanza y aprendizaje de la estadística en aulas multilingües"** en que mostró proyectos de América Central y África que buscaban estimar empíricamente si existen y cuáles son los factores del aula que contribuyen a la ganancia en matemáticas de los alumnos multilingües en las escuelas, cuyo fin es poner de relieve prácticas equitativas de enseñanza, considerar el multiculturismo y multilingüismo como beneficios y no como obstáculos para el aprendizaje de las matemáticas y la estadística.

Entre los aspectos destacables de una enseñanza de calidad en aulas con diversidad lingüística, propone: la conexión de la disciplina con las experiencias reales de los estudiantes; la conexión disciplinaria con el lenguaje; el rol del significado y múltiples significados de las palabras; el apoyo pedagógico con soportes visuales; registros de ideas y conceptos claves de forma escrita en pizarras, carteles, entre otros; discusión sobre los registros matemáticos o estadísticos escritos por los alumnos; y estrategias de alfabetización destinadas a mejorar la comprensión en aulas diversas.



Además, Jesús Guadalupe Lugo-Armenta presentó la conferencia **"El desarrollo del razonamiento inferencial informal a través de la Modelación de datos"**, donde exploró la implementación de los nuevos enfoques educativos en los planes y programas de estudio de matemáticas en Chile. Estos cambios subrayan el uso de recursos tecnológicos y, en particular, la modelación como un componente crucial del eje de Probabilidad y Estadística. Lugo-Armenta proporcionó una visión integral de las diferentes perspectivas sobre la modelación estadística, resaltando sus características en el ámbito de la investigación en Educación Estadística.

Además de brindar un panorama de estas posturas, presentó ejemplos concretos de cómo se puede emplear la modelación para fomentar el desarrollo del razonamiento inferencial informal. Dentro de las estrategias de modelación, hizo hincapié en las simulaciones y la técnica de remuestreo, destacando cómo estas actividades pueden no solo motivar a los estudiantes en el aprendizaje de la Estadística, sino también servir de base para la formulación de inferencias informales y estimular el razonamiento inferencial.



La sexta versión del Simposio concluyó con una Mesa de Diálogo en torno a **¿Qué alcances y desafíos enfrenta la Educación Estadística en la era de la inteligencia artificial?** Conformada por Roberto Araya (Universidad de Chile), Pedro Salcedo (Universidad de Concepción), Guadalupe Lugo-Armenta (Universidad de Los Lagos) y Soledad Estrella (Pontificia Universidad Católica de Valparaíso).

En este espacio híbrido, con expertos en Inteligencia Artificial y expertas en Educación Estadística, se presentaron varias ideas sobre el gran impacto de la Inteligencia Artificial (IA) en la era del big data, siendo reconocida tanto como una fuente de riesgos como de inimaginables oportunidades para el futuro. Chile, consciente de su relevancia, ha implementado una Política Nacional de IA con el propósito de educar

El VI Simposio tuvo más de 400 inscritos de 19 países y ha sido organizado y coordinado por los integrantes del Grupo GIET

sobre esta tecnología, comprenderla y desarrollar herramientas para enfrentar desafíos complejos y éticos. Los panelistas enfatizaron en este contexto de cambio vital vertiginoso, que la Educación Estadística emerge como un factor central, subrayando la urgencia de innovar el currículo escolar desde los primeros años y las mallas de la formación inicial docente, fortaleciendo las competencias del cuerpo docente —con apoyo de la IA en el aula—para integrar eficazmente los avances tecnológicos y abordar los nuevos desafíos que plantea la IA en el uso, cuidado y análisis de datos, junto a los nuevos y urgentes aprendizajes requeridos. También destacaron que la Educación Estadística enfrenta el desafío de adaptarse a la creciente complejidad de los algoritmos y modelos de aprendizaje automático, así como de enfocarse en promover una comprensión crítica de la ética y la transparencia en el uso de la IA en el análisis estadístico, propios de la Estadística Cívica. Manifestaron como necesario considerar el enfoque emergente de la educación en Ciencia de Datos para el desarrollo de habilidades técnicas y herramientas específicas para manejar grandes volúmenes de datos y extraer información de ellos, y a la vez, fomentar una comprensión crítica de cómo se producen tales datos y el riesgo de usos para otros propósitos particulares.

Finalizaron con una perspectiva positiva para estos nuevos tiempos, considerando como una oportunidad, desarrollar herramientas educativas innovadoras que aprovechen las capacidades de la IA generativa y los ChatGPT para mejorar la enseñanza y el aprendizaje de la estadística, lo que requiere más que nunca de una colaboración interdisciplinaria entre la estadística, la informática y otras disciplinas.

Agradecemos a los conferencistas y a cada una de las sociedades científicas IASE, SOCHE (Sociedad Chilena de Estadística) y SOCHIEM (Sociedad Chilena de Educación Matemática) e ISLP que nos acompañaron.

Sigamos forjando y construyendo entre todos una vibrante comunidad de Educación Estadística en Latinoamérica y más allá. ¡Esperamos con entusiasmo continuar este camino juntos en SEPIA7!"

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