Eurostat: Stats in a Wrap

How does the European Statistics Competition empower young thinkers?

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SPEAKERS
Ioannis Xirouchakis (Eurostat), Christos Anastasiades (Laniteio Lyceum), Nikoleta Šlachtová (Statistical office of the Slovak Republic), Kelly Sabbe (Statbel – Belgian Statistical Office), Olga Grigoriadou
(American Farm School Thessaloniki), Jonathan Elliott (host)

Jonathan Elliott
Stats in a Wrap, the podcast series from Eurostat.

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Welcome to ‘Stats in a Wrap’, the podcast all about statistics from Eurostat, the statistical office of the European Union. I'm Jonathan Elliott, your host for this episode. Now if you've been listening to our podcasts, you'll know that we think data are delicious and we love nothing more than inviting you, our listeners, to share our passion for the numbers that reveal the truths about the world around us.

Today, we're going to be delving into the world of the European Statistics Competition, an increasingly popular annual battle of wits and creativity in statistics in which young people use the power of video to communicate complex concepts in official statistics. The contest is open to all EU Member States as well as the EFTA countries Iceland, Liechtenstein, Norway and Switzerland, and this year, 19 Member States are participating, and along with them, Iceland and Liechtenstein.

And while it's great fun and the videos do offer highly entertaining as well as very informative viewing, it's also very important with a serious side, because - let us not forget - we live in an information saturated society with often declining levels of numeracy, especially in the under twenty-fives. So, what can a video competition do to help give young people more confidence and better insights into the world of official statistics and their power to inform us and enable good decisions?

Can a teenage project seriously fight misinformation? Is statistical literacy the secret weapon Gen Z didn't know they had? And how, as a teacher, do you help young people handle the science of uncertainty in a world that prefers guarantees. Today, we'll unpack all of that and more with the help of some of the people behind the competition and those working to make statistics relevant, exciting and yes, even cool.

Well, we love stats here in the wrap café, and our favourite ones are the uncoolest ones. Yes, welcome to the world of stats, nerds, geeks and data freaks to help us battle our way through one of Europe's coolest statistical competitions. We're lucky to have in the wrap café today - let me welcome - Kelly Sabbe. She is the statistical literacy coordinator at Statbel, the Belgian Statistical Office, who's working on the front lines of data education and curriculum engagement in schools. Welcome, Kelly.

Kelly Sabbe
Thank you. I'm very excited to be invited and to be here today.

Jonathan Elliott
Wonderful, great! And we also have Ioannis Xirouchakis, who is the Head of Unit for dissemination and user support at Eurostat, who brings a European wide perspective on how official stats are communicated and understood across Member States. Ioannis, welcome.

Ioannis Xirouchakis
Many thanks, Jonathan. Very happy to be here.

Jonathan Elliott
And we have Nikoleta Šlachtová, Director of the Dissemination directorate at the statistical office of the Slovak Republic, who's helping bring statistics to life through national education initiatives and international collaboration. Nikoleta, thank you so much for joining us today.

Nikoleta Šlachtová
I'm excited to be here and looking forward to our conversation.

Jonathan Elliott
Me too. So well, everyone, grab your headphones and maybe a calculator. Let's dive in. Ioannis, makes sense to come to you first at Eurostat. Can we just talk a little bit about statistical literacy before we get to the competition itself? It's a…it's a rather dry term, 'statistical literacy', but it is incredibly important, and you're in the business of promoting it, among many other things. Can you just tell us why you think statistical literacy is so important in today's information saturated society?

Ioannis Xirouchakis
I would say that statistical literacy is important so that we can all engage critically with data and statistics in our everyday lives. Statistical literacy is probably missing today, and this is why promoting statistical literacy, especially among young people, is the first strategic objective of Eurostat's new communication and dissemination strategy. Eurostat ran a wide Eurobarometer survey in late 2023 and the first question was: do you trust information more or less if it is backed up by statistics and data?

And I was personally astonished to see that 60% of the respondents do not trust information more when backed up by statistics and data. This is not only surprising, it is also worrying, and if I exaggerate a little bit, this implies that someone (a politician, an influencer, if you want) can claim whatever they want, and 60% may simply believe it without asking for any supporting evidence.

Jonathan Elliott
That's amazing. We've seen in the news how easy it is for the powerful to assert all kinds of things, and how readily millions believe it. How then can the next generation be equipped to challenge the powerful when it comes to facts?

Kelly, it would be great to come to you now to talk about how you think statistical literacy can work in the context of young people, and how to help them have a better understanding of the issues as they're expressed by the data. What do you think the role of statistical literacy has for young people?

Kelly Sabbe
We believe it's not just about official statistics, but about understanding broader societal issues like poverty, like inflation. It's very important for young people to understand certain concepts like data uncertainty, false data, false information.

Jonathan Elliott
It certainly is, isn't it? I mean, nobody likes uncertainty. They want strong, clear guidelines. They don't like shades of grey. But that is the foundational part of statistical literacy - it's understanding outliers, understanding gaps in knowledge that you have to fill in scientifically.

Kelly Sabbe
Yes, indeed, we use official statistics within our context to teach those concepts, but it's transferable knowledge that they can use in everyday life - for example, to verify the claims that influencers make.

Jonathan Elliott
Absolutely and maybe this is where the fact-checker and the growing importance and popularity of fact-checking organisations come in. I can't help wondering if we've lost the art of debate and we've lost the art of sceptical, challenging and alternative views. Let's step out of the wrap café for a moment now and see what people in the street think.

Person on street 1
True that nowadays people are becoming more lazy, and I think that should be changed.

Person on street 2
I think that because the information is given in such short bursts (there is a school of thought that you lose concentration after 20 minutes); and perhaps that generation have small snapshots of lots of information that they can piece together to read a bigger picture.

Jonathan Elliott
Ioannis, the problem is easy to state, but what do we do about the solving it? How do we promote statistical literacy and what are the challenges in promoting it?

Ioannis Xirouchakis
The major challenge is that interest in mathematics and other sciences is declining in our society. My son had difficulties last year finding out how to apply for medicine in Germany, and well, I told him: ask your German colleagues. He said: my German colleagues cannot advise me, because no one intends to study to become a doctor.

It simply does not pay off. Also, a small portion of students wanted to study mathematics or engineering. No wonder why we are lacking doctors and engineers in Western Europe. It requires special efforts to promote statistical literacy in a society where interest in mathematics and other sciences is generally low.

Jonathan Elliott
Yes, it is well documented that there is a decline in numeracy in the EU and the US, and it is especially prevalent among young people. Kelly, what do you think of the challenges in engaging young people with official statistics? What do you see as the headline difficulties there?

Kelly Sabbe
Yeah, we face those same challenges and same problems. Furthermore, in Belgium we face declining PISA scores for mathematics and related concepts, and any attempt to reform those curricula are slow to yield results.

And this is because once you see a declining score and you want to change something, you want to innovate the way we teach those concepts, we teach statistics - it takes a lot of time before you see the actual results, a minimum of 6 years. There have been changes in the past, and these were not fruitful, so we have to change again. We have to innovate again. We have to reform again. But those results will only be visible in at the earliest five, six years.

Jonathan Elliott
Can you just explain for us what a PISA score is and why it's significant?

Kelly Sabbe
So, within Europe, in all countries, tests are being conducted, I believe, every 2 years, to benchmark the level of mathematics understanding and education. Not really the education, but the scores and the understanding of the students. And then you can benchmark yourself over time, but also in relation to other countries.

Jonathan Elliott
Yeah, fascinating. I mean, Nikoleta, I'm just going to ask you whether in Slovakia it's the same picture?

Nikoleta Šlachtová
Yeah, I think so, it's very similar. Slovak schools traditionally focus on tests with time limits, which creates barrier to deeply engage with statistics. And I think it's very important to prepare programs, projects and learning materials in an engaging way that also allows students to have some fun - so they will not see it as a very difficult subject or boring subject.

Jonathan Elliott
Absolutely! The great thing about the video competition is that it promotes an important part of statistics, which is presentation and communication. Nikoleta - give us an overview. The competition for 2025 is underway. How does it work? Who gets involved, and what do they have to do, and what's the result?

Nikoleta Šlachtová
The European Statistics Competition started in 2017/2018. It's initiated by Eurostat, with national statistical Institutes and from 11 000 students in 11 countries, the competition has grown to almost 27 000 students in 21 countries.

Jonathan Elliott
So, the videos are then produced and judged and then there are clear winners. What do you think makes a really good video? I mean, what's…what are the characteristics of a real, clear winner?

Nikoleta Šlachtová
In my opinion it's important how the data will be transformed to some storytelling: like, to understand not just the data, but to understand the story behind what is telling us about the society or about the problem or about the development.

Jonathan Elliott
In the end, statistics aren't really about numbers, are they? They're about people and what they do and how the world works. They're actually about stuff that's out there. And some of the videos I saw when I was a judge last year really wonderfully explained that and did it in a very clever way with lots of mini dramas.

There was quite a lot of acting involved and dialog and a lot of comedy. It was a joy to watch and full of fun and interest. Let's hear from one of the teachers of the pupils participating in the competition, now. Olga Grigoriadou, from the American Farm School in Thessaloniki in Greece, is a seasoned operator when it comes to the statistics competition. She’s coached students through seven of them, and earlier she spoke to me about the joys and challenges of making the videos.

Olga Grigoriadou
When I came back to Greece, I realised that there is not much statistics in the Greek maths curriculum in middle school. Actually, there's very little in one of the grades, and nobody actually teaches it in the end. So, for me, there was a gap there, especially in our age with so much information that we're bombarded with every day. This competition has a very good way to bring students close to statistics.

So that's one of the strengths for me, for this competition. It's a very interesting way to have them want to learn statistics. They should learn how to be a bit more critical to when, when they're looking at data. I like that they develop this critical thinking. They have to look into, you know, Eurostat data and the local statistics. They can judge which source is trustworthy and which is not.

Jonathan Elliott
Kelly, gaming is a huge part of the culture of young people from quite an early age, and it's hardly surprising that it's being used for teaching. Just unpack that a little bit for us. What difference does it make to this kind of subject?

Kelly Sabbe
Well, teachers are always looking in for engaging ways to teach certain subjects, and if I think about statistics, then I think that you can have, like really, really dull courses, really theoretical courses, but you won't reach the students. They will not see the story behind the data.

They will approach it from a very mathematical aim and by introducing statistics like in a game, a quiz, where they can compete within schools against other schools, and afterwards, by making a video, they really search for the story behind the data.

They really go more in depth in those data, and they learn transferable skills. It's not only about the statistics anymore, but really: what do they want to say? What's the story behind it? What can we do with it? And that's a very important aspect of this competition, I believe.

Jonathan Elliott
It seems to me a no-brainer that statistics, which can already be communicated wonderfully through infographics, could be presented visually through other media. It seems obvious. So maybe, if there are games developers out there, please get in touch with Eurostat. Maybe we can have a conversation about how to make stats fun through gaming.

Ioannis, Eurostat never sleeps. You're always innovating and developing and getting better and trying to find out how you can do things in a more successful way. The European Statistics Competition is a fantastic success story, as Nikoleta was telling us, it's grown and grown. So, what next? What would be your ambition for the ESC looking forward?

Ioannis Xirouchakis
Starting already this year, Jonathan, I would like our competition to have a greater European emphasis. Statistical literacy is also about becoming better European citizens. And with initiatives like this, we demonstrate that we put our hopes, our faith in the young Europeans. Since we are all in this together, the Europeans, we could do more together.

We can organise in parallel our national activities during the national stage of the competition. We can follow together the European stage of the competition, not to stop at the national stage. Maybe watch the European finals together, like the European Cup, and why not, we can make our competition the Eurovision of statistical literacy, if you like.

Jonathan Elliott
Nikoleta, just share with us some of the stories from Slovakia, because you've got a really close eye on things there, and I think you've got a really special account of someone who really succeeded against the odds. Do share that with us.

Nikoleta Šlachtová
We had a student with autism, who started in the first year. He needed to work alone. In the first year he finished on the fourth place and in the second year, he continued, and improved, and finished on the second place. And this story was very much recognised by media as well. And it was very inspiring that also students with maybe some learning difficulties can be very successful.

Jonathan Elliott
Kelly, what do you make of that? I mean, you've got some experience of how neurodivergent students and people with educational needs engage with the competition. Would you like to share that with us?

Kelly Sabbe
In Belgium, we see that the most teams that make it to the final stage of the competition, so the best 20 videos are teams from more heavy mathematical curriculums and from really well-established schools. But we also have special schools. We call it 'type' schools, 'type nine' education, specifically for people with autism and everything within that spectrum.

And this year, we had amongst the 20 finalists' teams from those schools, and we got some great feedback during the award ceremony. They love this kind of competition because for them, it's working together in a team. It's something that's quite challenging if you have autism or can be quite

challenging, but also, they could really go in depth, and the fact that they were able to participate in this kind of competition and make it to the final stage, they were so proud of themselves.

But also, the teachers were so proud of their students that they were really looking forward to go and study at university something with statistics. They were, they were, like, really triggered by it. They were so happy.

Jonathan Elliott
That's amazing, isn't it? I mean, that is the secret. That is, what education does at its best, is to get people enthusiastic and excited, and to take the kind of the, what can I say, you know, the heavy lifting out of it, and to turn it into something which is really inspirational. That's a fantastic story.

Person on street 3
Early education, statistics and education, you know, if it's taught at an early age to allow young people to have an understanding of that, although there are other elements - you mentioned the AI earlier on - if children are taught at an early age the importance of the overall numeracy and statistics and the value of that and how AI moving forward can help them develop that skill, then by all means I would certainly encourage that at an earlier stage in life, rather than people trying to learn it when they're a bit older.

Jonathan Elliott
Kelly, how important is it for you to get the educational system thinking about this? What's your experience of the way that statistics is discussed in schools?

Kelly Sabbe
Collaboration with educators and teachers is vital for us. We need to train the teachers, the educators. So, they, in turn, can inspire young people in their classrooms. The problem indeed, is that teachers see statistics as a branch of mathematics, only distantly relevant to the real world, and stats are something scary, statistics are very scary, and they try to sideline it in their own curricula or into a special category.

But many teachers, even those with an economic background, are hesitant to touch the subject of statistics, because they lack a bit of confidence. And there we can play a vital role to really go and teach the teachers, train the trainers.

Jonathan Elliott
Well, while it’s true I guess that some teachers don’t like statistics and most school systems don’t include a dedicated subject on statistics or data analysis, let’s hear from one of those who not only teaches the subject, but also knows how to get the best from students competing in the competition. Christos Anastasiades is a teacher from Laniteio Lyceum, one of the largest and most historic high schools in Limassol, Cyprus. He has been continuously involved in the competition since it started and has enjoyed a number of triumphs nationally and at the European level along the way.

Christos Anastasiades
Most school curricula or syllabus don't really include applied statistics. We teach some theory, formulas and maybe a few graphs, but students rarely get their chance to work with real data, so this competition actually fills that gap. For many of them, it was the first time they saw how statistics could be exciting

and useful. They loved the teamwork, the challenge of finding, analysing and presenting real data, and for some of them, the creative part of making video.

The strength of the competition is that it brings statistics for students to life. It's not about solving problems on a paper. With this competition, have to think, have to research, have to discuss and have to present. The best benefit is that they use real data. They explore real topics like misinformation, inflation or even COVID, and they learn how to explain things clearly. It gives students a practical experience that the school system often misses.

Jonathan Elliott
So, we're nearly out of time today. But reflecting back on statistical literacy, does it really make sense to say that young people don't like numbers? I think they love numbers. You just have to get people talking about social media statistics, for example, and how many followers on Instagram they have, or likes on Facebook and hits on TikTok, those numbers are fascinating.

My teenage nephew will talk to you endlessly about football scores and sports statistics, and my niece about carbon dioxide levels and melting glaciers. Young people and all of us are constantly preoccupied with quantification of all kinds. The question has to be - how to get that energy into the actual education and understanding of societal issues, particularly societal statistics and the things that official statistics deal with. Ioannis, just tell me what you think can be done to get that happening.

Ioannis Xirouchakis
Young people are drawn into entertaining stories, mistakes, problems, but this should not create a disconnect from what is happening in the real world. So, in my opinion, statistics in school should be taught in relation to real-world problems. For example, what do official statistics tell us today about poverty, equality, innovation. Do we have evidence that climate change is real? I would even say that statistics are signals for upcoming crises.

If I were a teacher in school, I would start with population projections, for example. How many children do you expect in our class in the end of the century? How many inhabitants in our country? Will there be more grandchildren or more grandparents in the country? So, we may not be around in year 2100, certainly I will not, but our students and their children will still be around, and they will have to deal with the results of the policies of today.

Jonathan Elliott
Yes, it certainly is. Kelly, I guess a 15-year-old is not really going to get worried about GDP or about inflation or salaries or migration statistics and how they're reported, because it just doesn't affect their lives from day to day. So how do we make official statistics relevant and relatable to young people?

Kelly Sabbe
I think the challenge for us is to get the data and bring them as close to the young people, to the students, as possible. Search for data statistics that are relevant for their life, that are relevant for their environment. Like, for example, the nationalities within their city, the number of schools, the number of inhabitants.

How will it evolve? Where do you see yourself in five years? Are you going to stay in the same city? Will there be more or less inhabitants? So really search for the data as close as possible to their environment and try to translate them in something that they can get a grip on, that they understand.

Jonathan Elliott
Yes, absolutely, and handling uncertainty, because the world is full of uncertainty and young people are acutely aware of that as they, as they mature into their young adulthood. Nikoleta, just tell us what you think from this European Statistics Competition. What does it do for young people in practical terms, how does it change their lives? What does it…how does it change their educational approach to stats? What's your experience?

Nikoleta Šlachtová
I think the competition effectively connects students with the real-world data. They can work with them in the way which is more close to their age. Very important is to find the activities so the language or competition or type of the projects or events should be designed how they perceive it or what they like.

Jonathan Elliott
Make it relevant, make it fun, keep them enthusiastic. I mean, that's education, isn't it? I mean, that's when education is at its best. People, this has been a wonderful, wonderful tour of the European Statistics Competition and its importance in spreading statistical literacy and encouraging statistical thinking among young people and hopefully equipping them with their critical thinking as they grow into adulthood. Thank you so much for your contributions today. I'm deeply indebted, and it remains for me only to say thank you very much. First of all, to Kelly Sabbe from Statbel: thank you, Kelly.

Kelly Sabbe
Thank you for having me.

Jonathan Elliott
And Ioannis Xirouchakis, thank you so much from Eurostat for… for your contributions today.

Ioannis Xirouchakis
Many thanks, Jonathan and the colleagues, it was very exciting.

Jonathan Elliott
The statistical office in the Slovak Republic: Nikoleta Šlachtová, thank you very much for your contributions today.

Nikoleta Šlachtová
Thank you very much for having me.

Jonathan Elliott
If you've enjoyed ‘Stats in a Wrap’, don't forget to follow us on social media and share our adventures with friends and colleagues, where the show can be found on Spotify, Apple and all the usual places. And if you'd like to know more about the topics covered in this podcast and practically every aspect of statistics in the EU, you should make your way to Eurostat’s amazing educational resource Statistics Explained, which is packed with infographics, videos and explainers of all kinds. It's really worth checking out.

And of course, come to the wrap café for the next edition, in which we'll be digging into the powerful and sometimes controversial world of population statistics. That's all the numbers you could ever want to know about you and me, and yes, our ages, genders and where we live and many other things. Big Brother (and Sister) may be watching us, but is that necessarily a bad thing? Join us to find out, but for now, goodbye.