



On-Site Statistical Engagement: Building Data Literacy Among the Next Generation

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Abstract

Reaching young audiences is a strategic priority for many national statistical offices, as early engagement supports long-term trust in official statistics, strengthens statistical literacy, and fosters informed citizenship. While digital communication dominates dissemination strategies, physical on-site engagement remains an underexplored yet powerful communication channel.

This paper presents a case from Statistics Denmark, where structured visiting programmes for upper secondary schools, international students, and journalism students have been developed into a systematic communication initiative rather than ad hoc outreach. Each year, several hundred students participate in on-site interactive sessions combining short lectures, live demonstrations of the Statbank, quizzes, and group exercises focused on data interpretation, uncertainty, and responsible use of statistics.

The programme is designed around clear communication objectives, including:

- **Raising awareness of, and building trust in**, official statistics and public institutions.
- **Strengthening practical statistical literacy**, including data interpretation and critical thinking.
- **Lowering barriers to access and use** of public statistical infrastructure.
- **Supporting future data communicators**, particularly journalism students.

Pedagogical formats are continuously refined based on participant feedback, evolving curricula, and emerging societal topics. Participation data and qualitative feedback provide a basis for evaluating reach, scalability, and learning effects.

The paper discusses how physical engagement formats can complement digital dissemination strategies, create meaningful dialogue with future users and future media professionals, and humanize statistical institutions. It further explores how such initiatives can be embedded in a broader organizational communication strategy targeting young audiences, and how the model can be adapted by other statistical organizations seeking to strengthen outreach, relevance, and public trust.

Keywords: *Statistical literacy, youth engagement, journalism education, dissemination strategy, outreach*



1. Introduction

In an increasingly data-driven society, the ability to understand, interpret and critically assess statistical information has become an essential civic competence. Citizens encounter statistics daily through news media, social media and public debate, making statistical literacy increasingly important for informed participation in democratic society.

National Statistical Offices (NSIs) therefore face a challenge that extends beyond producing high-quality official statistics. They must also support citizens in understanding and using statistical information. While digital dissemination has improved access to official statistics, access alone does not guarantee understanding.

To address this challenge, Statistics Denmark has developed a structured outreach programme aimed at young audiences, including visiting groups from educational institutions and journalism students. Through direct engagement, participants are introduced to official statistics, data interpretation and the institution behind the statistics.

This paper examines how physical outreach activities can strengthen data literacy, build institutional trust and support future users and communicators of official statistics.

2. The Statistics Denmark outreach model

Statistics Denmark has developed a structured outreach programme aimed at strengthening data literacy among young audiences. The programme consists primarily of visiting groups hosted at Statistics Denmark and annual teaching sessions at journalism schools.

The development of the programme has largely been demand-driven. Educational institutions have contacted Statistics Denmark on their own initiative, seeking opportunities for students to gain insight into official statistics and the work of a National Statistical Office. Over time, Statistics Denmark developed presentations, exercises and teaching formats that transformed individual visits into a more structured and recurring communication activity.



The outreach activities combine short presentations, demonstrations of StatBank and interactive exercises designed to encourage active participation. Rather than focusing solely on statistical concepts, participants are encouraged to explore data, discuss societal developments and reflect on how statistics are used in public debate. An example of one such exercise, where students are asked to match graphs with their corresponding titles, is presented in Appendix B.

Particular emphasis is placed on journalism students, who represent future communicators of statistical information. Their ability to interpret and communicate data has implications not only for their own work, but also for public understanding of official statistics.

The programme has gradually expanded in scale and now reaches several hundred students annually across different educational levels (see Appendix A).

3. Key Lessons Learned

The experience of developing and conducting outreach activities at Statistics Denmark provides several insights into how National Statistical Offices can strengthen data literacy and engagement among younger audiences. Four lessons have been particularly important: confidence is as important as access, transparency increases trust, specific audiences can reach further, and authenticity strengthens engagement.

3.1. From Access to Understanding

A key lesson is that access to data does not automatically lead to understanding or use.

Although Statistics Denmark's StatBank provides free access to a large volume of official statistics, many first-time users perceive statistical databases as complex and difficult to navigate. Participants often express uncertainty about concepts, definitions and variable selections, and many are hesitant to explore data independently.

The outreach activities help bridge this gap by providing guided learning experiences where participants can ask questions, receive immediate feedback and observe how others approach similar tasks.



An important outcome is therefore not only increased technical understanding, but also increased confidence. Many participants discover that official statistics are more accessible and relevant than they initially expected. This suggests that dissemination strategies should focus not only on making data available, but also on helping users understand how data can be found, interpreted and applied in practice.

3.2. Trust through Physical Engagement

A second lesson concerns the relationship between physical engagement and institutional trust.

For many participants, Statistics Denmark is initially perceived as an abstract public authority responsible for producing official figures. Visiting Statistics Denmark provides an opportunity to meet the people behind the statistics and gain insight into the institution as a workplace.

Participants see employees engaged in data production, analysis and communication, helping transform Statistics Denmark from an anonymous institution into a more accessible and relatable organisation.

The experience suggests that trust is influenced not only by the quality of statistics, but also by understanding the people and processes behind them. Physical visits therefore contribute not only to statistical literacy, but also to institutional trust.

An additional benefit is that participants gain a better understanding of where to seek assistance when questions arise. While the long-term effects are difficult to measure, the visits appear to make Statistics Denmark more approachable and may lower psychological barriers to future interaction.

3.3. Journalism Students as Multipliers

The outreach activities directed at journalism students highlight the importance of intermediaries in the communication of official statistics.

While many dissemination initiatives focus on direct users of statistics, journalism students represent future communicators whose work may influence how statistics are understood by much larger audiences.



Strengthening statistical literacy among journalism students therefore has a multiplier effect. Their ability to interpret data critically, identify limitations and communicate evidence responsibly may contribute to more informed public debate and better use of official statistics in media coverage.

For National Statistical Offices, this suggests that communication strategies should not only target end users, but also those who help shape public understanding of data.

3.4. Organisational Sustainability

A final lesson concerns organisational sustainability.

The outreach activities at Statistics Denmark were initially developed and delivered by a small number of highly engaged employees. Over time, growing participation levels and positive feedback have led to broader organisational recognition and support.

Future sustainability may depend not only on the standardisation of materials and the development of a broader facilitator base, but also on balancing subject-matter expertise with communication skills.

One of the strengths of the outreach activities is their authenticity. Participants do not encounter a highly polished communication product, but gain direct access to employees who work with official statistics on a daily basis. This provides valuable insight into how statistics are produced and interpreted in practice.

Sustaining outreach activities therefore requires not only organisational resources, but also continued investment in communication competencies across the organisation.

4. Implications for Other National Statistical Offices

Although the outreach activities described in this paper are rooted in the Danish context, several observations may be relevant for other National Statistical Offices seeking to strengthen data literacy and public engagement.

First, outreach activities should be viewed as a strategic component of dissemination rather than as isolated communication initiatives. Direct engagement



with future users of statistics can help strengthen both understanding and trust over the long term.

Second, young audiences deserve particular attention. Early exposure to official statistics can build familiarity and confidence that may influence how individuals use and interpret data later in life.

Third, communication efforts should not focus solely on direct users of statistics. Journalism students, teachers and other intermediaries can have a multiplier effect by influencing how statistical information is communicated and understood by wider audiences.

Finally, the experience from Statistics Denmark suggests that physical engagement activities create forms of dialogue and interaction that are difficult to achieve through digital dissemination alone. While digital platforms remain essential, face-to-face engagement offers unique opportunities to strengthen relationships between statistical institutions and future users of official statistics.

In combination, these observations suggest that outreach activities can be a valuable complement to traditional dissemination strategies and an important contribution to strengthening statistical literacy in society.

5. Conclusion

This paper has presented the outreach programme developed by Statistics Denmark as a practical approach to strengthening data literacy among young audiences.

The experiences described suggest that access to official statistics alone is not sufficient to ensure understanding and use. Many potential users need support in developing confidence, contextual understanding and practical skills before they are able to engage actively with statistical information.

The outreach activities demonstrate how physical engagement can complement traditional dissemination by creating opportunities for dialogue, interaction and learning. Through visiting groups, journalism education and other targeted activities, Statistics Denmark seeks to make official statistics more accessible, understandable and relevant to future users and communicators of data.

The findings further suggest that physical encounters with statistical institutions can contribute to building trust by humanising the people and processes behind official



statistics. At the same time, these activities provide valuable insights into how statistics are perceived and understood by younger audiences.

While outreach activities require organisational commitment and resources, they should be viewed as long-term investments rather than short-term communication initiatives. Their value lies not only in improving awareness of official statistics, but also in strengthening the competencies needed to navigate an increasingly data-rich society.

Ultimately, statistical literacy is not only about understanding numbers. It is also about enabling future citizens to participate critically and constructively in democratic society. In this perspective, outreach activities represent not only a communication effort, but also a contribution to democratic education and informed citizenship.



Appendix A

Figure A1 – Visiting Groups 2008-2026

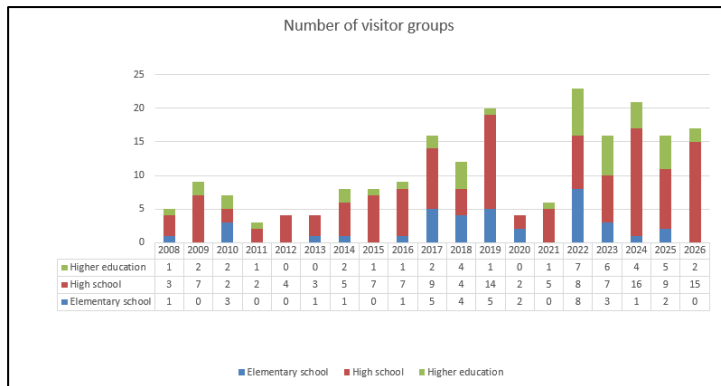


Figure A2 – Students Reached 2008-2026

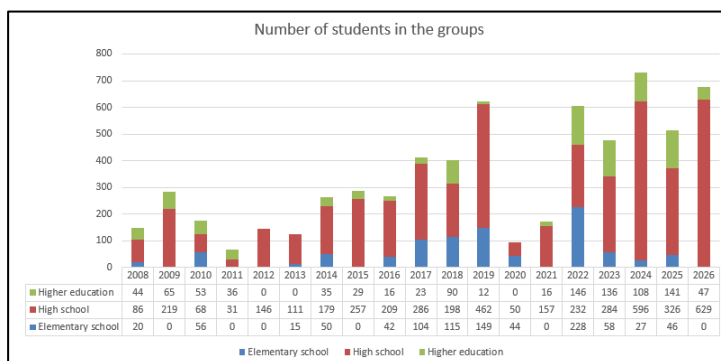
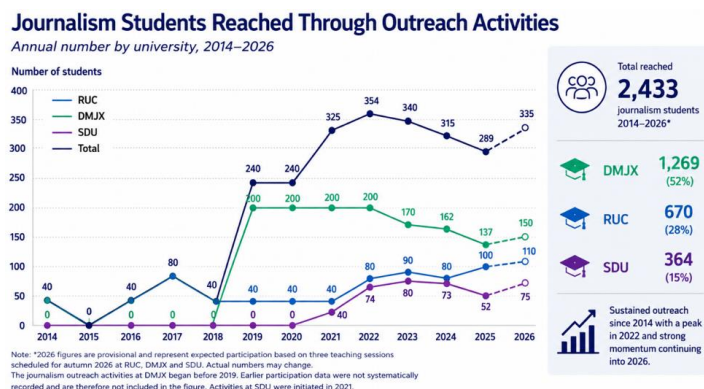


Figure A3 – Journalism Students Reached 2014-2026



Note: The 2026 figures are provisional and include expected participation in planned autumn sessions. Activities at DMJX began before 2019, but earlier participation data were not systematically recorded and are therefore not included. Activities at SDU were initiated in 2021.



Appendix B

Case Example: Connecting Data to Real-World Developments

One of the first exercises used during visiting group sessions is a simple graph-matching activity called “Guess a Development.” Participants are presented with four graphs and four possible explanations and are asked to match the graphs with the corresponding developments. The exercise is completed in pairs or small groups before the correct answers are discussed in plenary.

Guess a development



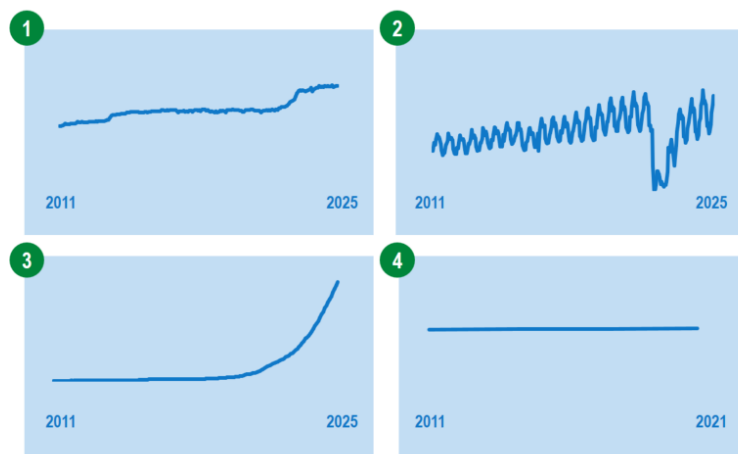
- Which text matches which graph?
- Discuss answers with you neighbor
- Write down the combinations

A – Area of forest

B – Departing flight passengers

C – Price of candy

D – Electric cars



The activity is intentionally designed to be accessible. The graphs contain only a time axis and no additional context, forcing participants to focus on patterns and trends rather than detailed numerical information. Examples include developments such as departing airline passengers, the number of electric cars, the price of candy and the area covered by forest.

What makes the exercise particularly valuable is the discussion that follows. Participants are encouraged not only to identify the correct match, but also to reflect on the societal developments behind the graphs. What events may have caused a particular trend? Are there political, economic or technological factors influencing the development? Can policymakers influence the future trajectory of the graph? What consequences might arise if the trend continues?

In practice, most groups are able to identify the correct matches. However, the learning value lies less in finding the correct answer and more in the reasoning



process itself. Students discuss, argue, challenge each other's assumptions and use their existing knowledge to interpret the data. The exercise demonstrates that statistical interpretation often begins with context and critical thinking rather than advanced mathematical skills.

The activity also highlights an important principle of data literacy: data rarely speak for themselves. Even simple graphs require interpretation, context and reflection. By encouraging students to move beyond observation and towards explanation, the exercise helps develop the critical thinking skills that are essential for understanding and using statistics in everyday life and public debate.

Appendix C

The photographs illustrate both outreach formats described in this paper: teaching sessions at journalism schools and visiting groups hosted at Statistics Denmark.

