Communication about quantum technology offers many opportunities (but there are risks too)

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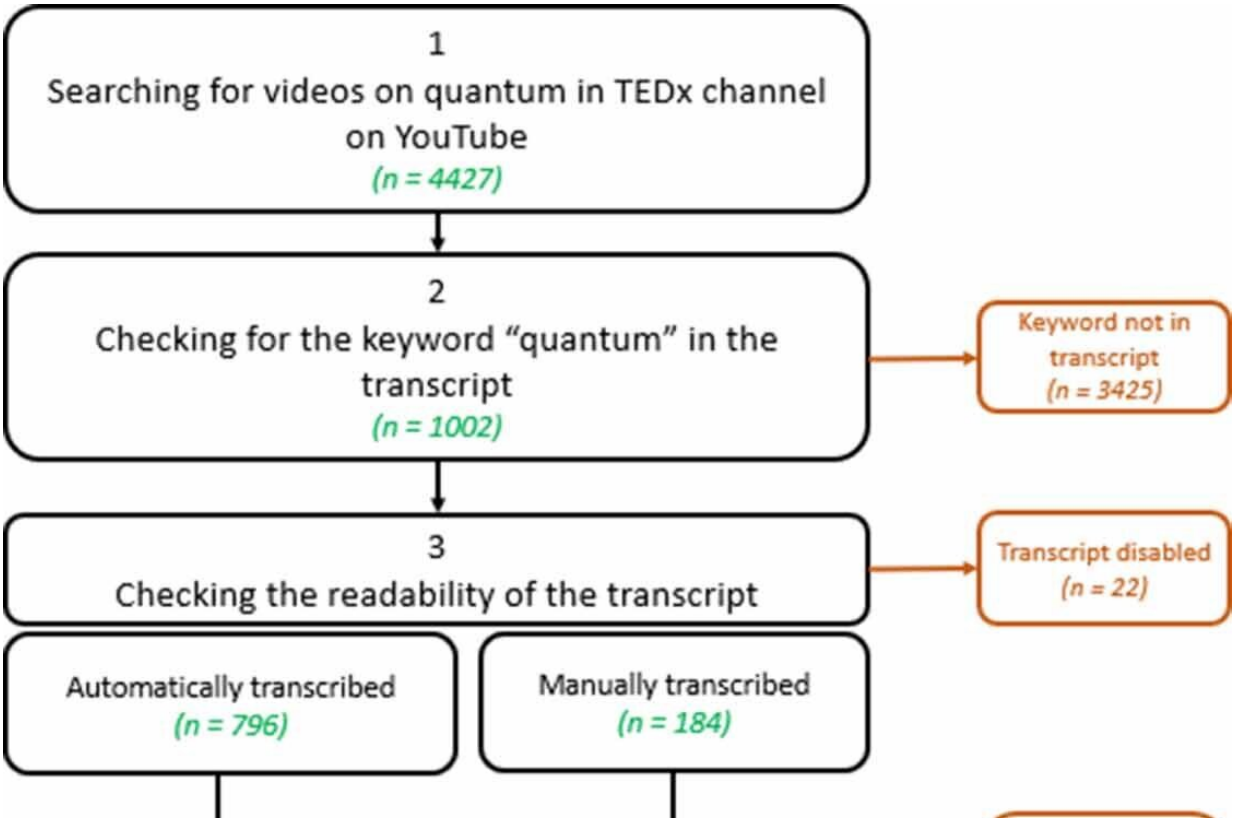

Data collection method. Credit: *Quantum Science and Technology* (2023). DOI: 10.1088/2058-9565/acc968

Watching and analyzing hundreds of TEDx talks, that too can be

research. That becomes clear from the work of Ph.D. student Aletta Meinsma, who is studying potential problems in popular communication about quantum technologies. She explains how she approaches this and why it is so important.

In the Quantum & Society research group where Meinsma works, quantum technology and science communication come together. "We want to understand how to engage in social dialogue around quantum technology."

Significant societal impact

Communication about emerging technologies is not always effective, Meinsma knows. "For example with nuclear energy or genetically modified crops. Those faced a lot of resistance from society. There was one-sided communication to the public with the goal of increasing public understanding. But that didn't necessarily result in people embracing those technologies. Quantum technology is still in the early phases, so we have an opportunity to approach it in a different way where we really engage people."

According to group leader Cramer, it is critical to consider the societal impact. "This technology can have a lot of impact on society. That's precisely why we need to know how to have meaningful conversations about this and how to make sure that this new technology connects with the desires and expectations of society."

Analyzing hundreds of videos

So we want to learn from the past, but how? Meinsma explains how she conducts her research. "To see how quantum technologies are communicated, we looked at four potential problems in about 500 TEDx

talks. These problems include the portrayal of quantum as spooky, or the lack of explanation of the underlying physics concepts."

The choice of looking at TEDx talks is not accidental. "The videos aim to inspire and the speaker is in direct contact with the audience. In addition, the transcripts of thousands of videos are easily accessible." Even so, the Ph.D. candidate still ended up having to watch several hundred videos herself to check the automatic transcriptions. "I was happy when I finished," she laughs.

Meaningful communication about quantum

"We saw that those four problems were certainly present, but not always dominant. One striking result is that the benefits of quantum technologies are mentioned more than six times more than the risks," Meinsma says. "Also, the talks are very often about the quantum computer, whereas quantum networks and sensors might have an impact on society much sooner."

Meinsma hopes that the results of the study will be put to good use. "My ambition is that scientists check with themselves how they can bring their story in such a way that it is valuable to the public. For example, not just talking about the benefits, but thinking more broadly about the benefits as well as the risks. In this way, we can create more support for quantum technologies even before they actually exist."

The study is published in the journal *Quantum Science and Technology*.

More information: Aletta Lucia Meinsma et al, Is everything quantum 'spooky and weird'? An exploration of popular communication about quantum science and technology in TEDx talks, *Quantum Science and Technology* (2023). DOI: 10.1088/2058-9565/acc968

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