Brief Communication

NEURO.TV: Neuroscience Education on the Internet

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Abstract

NEURO.tv is a new educational project that seeks to bring advanced concepts in neuroscience to the general public. We film one-hour discussions with leading neuroscientists, philosophers, and psychologists who have had significant impact on our current understanding of brain function, and we publish these discussions on YouTube, iTunes, and other social media outlets. Here, we explain the motivations behind this new program.

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An Online Program to Disseminate Knowledge about Brain and Mind

The internet has an enormous impact on the way people learn. With the advent of Massive Open Online Courses (MOOCs), academic blogs, and online education tools, anyone can learn anything, from almost anywhere. While academics take part in this online education movement, we have not yet fully benefited from the educational opportunities that the internet can provide. Interactions between researchers in different fields and the general public typically happen in universities or through the publishing of textbooks and journal articles between academics are sometimes precluded by the monetary and physical costs of conferences, traveling, and visits to universities. New technologies offer an avenue for scientists to share their knowledge with colleagues and members of the general public in a more efficient and open manner.

Despite the progress that the internet has made in leveling the barriers between scientists and the general public, there exists a need for a forum in which advanced subjects at the heart of current neuroscience research can be discussed openly, with participation from the general public. A new internet-based program called NEURO.tv addresses this need, by airing one-hour discussions with scientists who have made significant discoveries in neuroscience. We believe this program provides a platform for academics to present ideas and discoveries directly to the public in a setting that is not rushed or overly technical, and that remains accessible to individuals of all backgrounds. NEURO.tv's format is not merely a repetition of presentation content by a speaker, but rather a new type of interaction between scientists of different fields, discussing what they really think about the scientific methods used in their research, advances in medical treatment, and other important scientific problems that shape or limit current research.

Leading neuroscientists, philosophers, and psychologists have already volunteered their time to appear on the show. Our success in having many scientists commit to appearing on the program is due in part to the fact that filming an episode does not require travel, since

physical presence is not required; scientists can simply connect to conversations with each other from their home or office computers. Within a one-hour discussion, they are able to convey their thoughts on neuroscience-related topics to a wide public on the scale of many thousands, which is advantageous compared to the number of students they would reach in a traditional conference room or lecture hall. The Internet-based, asynchronous delivery also provides broad and flexible access to these fascinating discussions, years after the filming. Free access is a particularly crucial aspect of NEURO.tv and may benefit developed as well as developing countries, which may help reduce the gap in global access to advanced scientific knowledge (1). In principle, there is no reason why individuals in one country ought to have access to discussions with leading minds in neuroscientific research, while others cannot. As such, there remains a major demand for higher level education to be made available to the public and anyone interested in the subject. With the advent of crowd-funding platforms such as Kickstarter, we have seen that independently-operated programs like NEURO.tv can be entirely funded by the individuals who are interested in such educational initiatives (2).

NEURO.tv is not just targeted at educating the public; those involved in its production learn from their experience in the program as well. The program trains young scientists in scientific communication by placing them in a panelist or co-host position, a role that requires several weeks of preparation leading up to the filming. This preparation includes reading scientific articles, formulating topics to discuss, and preparing questions that will allow anyone with minimal understanding of biology to understand the show. It is a rare, novel, firsthand learning experience in public science communication and education.

Public science education has experienced a remarkable transformation as the internet has grown, with many high quality podcasts, videos, and blogs now being available for free to anyone interested in learning about science. However, a specialised niche has not yet been filled, one in which listeners could learn about how research is conducted, with an in-depth discussion on the details of a scientific discovery along with the implications of a result or cutting-edge technique. NEURO.tv fills this niche, with content that does not avoid these details, but rather embraces them, producing episodes that do not only focus on the product of research, but also delve deeper into the thought process behind it and why scientists care about the questions being covered.

The internet has also created opportunities to improve transparency and honesty in academia. In an academic presentation setting, there is rarely room to discuss any of the doubts scientists naturally harbor about their research or techniques, or the works of others. Neuroscience is a work-in-progress, and as with all science, relies on the best available techniques at the time the research is conducted, rather than the perfect ones. Discussions on NEURO.tv take place in an informal setting, which allows scientists to freely express their ideas and opinions about research and methods, without fearing being dismissed. Open conversations like these can only serve to better the field and improve the confidence of the general public in the scientific process and in the ability of scientists to question themselves.

With the advent of the internet, there has been a movement towards increasing the accessibility of scientific knowledge. We believe that programs such as NEURO.tv allow a novel interface between scientists and the general public. With this new experiment in scientific communication, we hope that highly-motivated individuals in the general public will develop a taste for a deeper understanding of neuroscience, and that neuroscientists will embrace the idea that part of the work lies on their shoulders, and that simplifying the explanation of their research will benefit the general public, the field, and themselves.

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