

Climate Crisis, Science, and Education

On 5 November 2019, 11,000 scientists wrote a letter to once again alert decision-makers about the collapse of biodiversity and the unprecedented suffering humanity is exposed to if they do not address the climate crisis as soon as possible (Ripple et al. 2020). Briefly said, the world is in danger and a paradigm shift is needed. The current environmental crisis calls for a different view of scientists' and citizens' roles and capacities.

On one hand, scientists speak out to warn about the risks of political inaction as the letter published in *BioScience* testifies. Their participation in sociopolitical conversations is necessary, not only to seize the climate emergency, but also to encourage, support and guide political and economic decisions (Green 2018). Besides, researchers are increasingly asked to participate in general media to comment on the political management of problematic situations. Scientists, whether they want it or not, are social and political actors, even agents of social change.

On the other hand, citizens, who hold relevant knowledge, are able to grasp the complex aspects of acute questions such as climate change. Much research carried out in the fields of science and technology studies and public understanding of science has shown that citizen's political pressure leads to changes in practices and mentalities regarding our interactions with the environment. It has also highlighted that citizens are able to carry out relevant actions thanks

to their academic backgrounds, personal experiences or professional expertise. Citizens are also able to produce useful knowledge and able to identify adequate solutions. The multiplication of their mobilizations illustrates their imposing work, much of which is to convince journalists and elected officials of their concerns' relevance and the urgency of taking effective action.

To a large extent, building these capacities for action falls within education and, among other disciplines, science education. Researchers generally agree that science education must pursue transformative and critical goals, in addition to empowering citizens to make informed choices, to participate in current sociopolitical conversations and to engage in actions that integrate the well-being for individuals, societies, and environments perspective (Bencze 2017).

Accordingly, we adopt in our science education courses an anti-deficit stance toward citizens. We fight the idea that the so-called laypeople suffer from knowledge deficits and poor attitudes toward technosciences. We invite students to explore various theoretical tools to interpret the roles, capacities and interactions of different groups of social actors. We also invite citizen whistleblowers to share their experiences with students. This is a way of highlighting how they manage to force the introduction of their concerns into the political debate and to coproduce knowledge. Finally, we have students reading opinion pieces written by scientists as

illustrations of genuine sociopolitical engagement.

This said, the publication of the letter shows that *BioScience* is keen to cover both the climate crisis and the public stance taken by the scientific community in favor of immediate decisions. In our opinion, this is a remarkable way to participate in the social, environmental, food, and economic management of the already begun spillovers.

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