Sandpits can help researchers escape disciplinary bubbles

“Why did you come here?”
“To help save the world.”

It’s not often that someone who studies the musical manuscripts of the Middle Ages gets to say that. But it was said, and in all seriousness, at Norway’s first idēlab—otherwise known as a research sandpit—in January 2014.

We were biologists and anthropologists, physicists and architects, chemists and psychologists, information scientists and social scientists. There were about 30 of us, the vast majority of whom had never met. We had nice lodgings, the great outdoors, good food, dedicated mentors, and five days to work out how to (help) save the world. Together.

Did we? That remains to be seen. What we did do was devise four collaborative, cross-disciplinary projects to reduce carbon emissions, based around microalgae, biocharcoal, bio-cement and zero-emissions houses. A fifth project followed these four on their collaborative journeys. After three years of observations and interviews, this is what we found.

Collaboration across disciplines needs mutual respect. Although all fields share a desire to create rigorous knowledge, they play the same game by very different rules. Respecting other academics’ rules is tricky, particularly where one person’s rules look like another’s sloppy practices. Combining knowledge across disciplines—not just demanding that other researchers fit around you—needs good communication.

No one needs to understand everything that everyone does. But projects must begin with participants explaining their specialist knowledge in a way that everyone can grasp the basics needed to work together. There are different ways to do this: one project we studied had a “stop and explain” policy, which set the bar of understanding very low; another devised its own terminology.

Once everyone was kicking in the same direction, regular meetings with updates and feedback allowed projects to respond to and engage with advances in each participating discipline.

In this way, work progressed not only towards the cross-disciplinary goal, but also in individual disciplines. This last point should not be underestimated: project members should not feel they were being forced to work towards a goal with nothing to contribute to their own field.

And yet everyone also had to leave their comfort zone. This always takes courage, and so it is not surprising that successful collaboration depends quite heavily on personalities.

Five days in an adrenaline-fuelled environment is barely enough to establish whether the resulting connections can endure the ups and downs of a research project. Speed dating can have happy and unhappy outcomes, and so it proved with the projects born in the idēlab.

Then there’s the f-word. Not all disciplines are equally well funded. Because money for the idēlab came from the Research Council of Norway’s hard-science funding streams, we detected an underlying suspicion, at least at first, that such cross-disciplinary collaboration was wasting “their” research funds. But by the end of the projects, the benefits of the collaboration were clear: so far, two projects have secured further funding with a third on the way.

For their part, the social sciences and humanities scholars at the idēlab felt they were being pressured to work on other people’s research questions. To avoid this, the “soft” disciplines need to contribute funds, which means they need more resources.

Similar problems have arisen in Horizon 2020: despite its interdisciplinary intentions, researchers from outside the hard sciences have felt marginalised. As funding bodies look to the next Framework programme, there is a realisation that grand challenges need new, interdisciplinarily ways of working, which in turn need new ways of building collaborations and making funding decisions.

The idēlab is one such method. We met colleagues, who became collaborators, who became friends. The sandpit approach created both cross-disciplinary projects and collaborative practices. These are for the moment only ripples. But a ripple can make a wave that advances the tide.

A sandpit is certainly not the only way to generate cross-disciplinary research. Its residential nature excludes many, such as those with caring responsibilities, disability requirements, and those who cannot spare a week to save the world.

Sandpits highlight the importance of behavioural changes, with colleagues working with mutual respect towards shared problems while remaining engaged in their own disciplines. The challenge is for researchers to embrace these behaviours in their academic norms and values to ensure that research achieves wider relevance.

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