‘Careers and Skills for a Future Climate: From Climate Anxiety to Agency’

An Interview with Dr David Boldrin

Commented [DB1]: It would be great to add opinions and remarks from Ali, Maxine and Katrina. This project was based on co-design and stakeholders were involved from the beginning of the project.

This interview was held on 12 March 2025

Dr David Boldrin (DB) is a physical scientist at the James Hutton Institute. David together with Dr Alison Karley, also based at the James Hutton Institute, Katrina Cuthbertson and Linda Birrell (Bertha Park High School, Perth), and Maxine Scott (Skills Development Scotland) joined forces to engage young people through an empowering, participatory approach. Together, they helped a generation that needs to make future-proof career decisions begin to map out, on paper, the pathway that fits them. The SEFARI Gateway Innovative Knowledge Exchange Fund supported this unique pilot in participative knowledge exchange.

Dr Ioanna Akoumianaki (IA), Policy and Impact Officer at SEFARI Gateway, James Hutton Institute, spoke with David about the project's origins, methods, and real-world impact.

IA: Let's start with the origins of this project. What gap were you trying to address?
DB: As a project team, we all came from different backgrounds, but we started from a shared understanding and awareness that there are significant gaps in how we involve young people in discussions about climate transition. This connects to several problems: climate anxiety among young people, their lack of involvement in decision-making, and a wider challenge around the careers and skills we need for the transition. Put simply, if we don't involve young people in these conversations, we may not have the people — or the skills — we need in future to deliver the transition.

These gaps have been highlighted in the literature. There's quite a good body of research on climate anxiety, and in the UK there's growing discussion about the lack of green skills alongside increasing demand for them.

The other problem is that too often we work in silos. Researchers work on understanding the anthropogenic factors affecting climate and the consequences of climate change. Schools focus on educating young people. Industry wants green skills. But these different actors don't speak to each other. We decided we needed to bring them together. This collective approach ensured co-design from the outset. That's why we applied to SEFARI Gateway for innovative knowledge exchange funding — because this model is innovative in two ways: we're targeting new stakeholders, namely young people, and we're doing it through a multi-actor, multi-generational approach.

IA: How does this fit with existing Scottish policy on climate transition and education?
DB: The policies are moving in this direction. I'd say we almost anticipated the trend. There's a growing body of research and policy initiatives looking at green skills and education — Education Scotland, for example, is working on learning for sustainability. But what's often missing is how these policies actually arrive in schools. How much do they really involve young people? How much comes

down to the school curriculum? How much opportunity do schools have to engage with the outside world and key societal questions? Opportunities for schools to engage with external partners such as researchers vary significantly, particularly given existing pressures on the secondary education system.

We align with these policies, but we also provide new tools — our multi-actor model for involving young people, academics, schools, and industry together. So we're both aligned with policy and contributing something new to it.

IA: Can you describe how the project worked in practice?

DB: We involved 69 students from 11 schools, plus academics from eight organisations. The event was held in Perth and involved schools from Perthshire, Edinburgh, and Dundee. We targeted S5 and S6 students — young people at the end of secondary education who are choosing career or university paths.

The methodology moved through three stages. First, we provided information — experts presented visions of transition in four major sectors: agri-food, engineering and construction, fashion, and energy. Second, we opened up discussion with everyone — young people, academics, industry representatives — all on the same plane. Third, we asked young people: now that you have this information and have discussed it, what do you think needs to change? What should be done?

We asked them to provide recommendations for three audiences: the education system, policymakers, and industry. They wanted more teaching of practical skills, more contact between schools and industry, and — interestingly — they raised questions about greenwashing, taxing the rich, and infrastructure investment. These might sound controversial, but having young people in the room alongside industry representatives actually depolarised the discussion. The framework of education helped create more open conversation than you might get between academics and industry alone.

IA: You mentioned measuring impact during the event itself. How did you do that?

DB: We surveyed young people before and after the event. Before, many described themselves as anxious or nervous about the topic and about taking part in the event. Afterwards, the language shifted — they talked about having hope, feeling enlightened, wanting to know more, and wanting to better understand how the climate transition could shape future careers. We recorded a qualitative change in attitude: from anxiety to positive engagement.

IA: What concrete impacts came out of the project?

DB: Several things happened. One teacher from Bertha Park High School in Perth started a new project after the event — a collaboration on circular economy and fashion with Dr Lynn Wilson from

the University of Glasgow. That came directly from contacts made during our project. The teacher met an expert presenting on fashion transition, and they started working together.

Commented [DB2]: It would be great to have a quote from Katrina and some details on the project.

We've also been contacted by other schools wanting to visit our institute, learn more about our work. Schools that weren't initially involved have reached out because they heard about what we did.

And there's a follow-on workshop to be held, funded again by SEFARI Gateway. The first project identified gaps; the follow-on workshop will look at how we adapt the education system for the energy transition. Involving policymakers, more teachers, and having the same kind of multi-actor discussion is the way forward, but it is challenging. To overcome this challenge, we moved to a "grassroots approach", engaging more teachers, local organisations and local authorities. The follow-on workshop will bring together teachers, Skills Development Scotland, practitioners and researchers.

IA: You fully funded transport and lunch for students. Why was that important?

DB: We wanted to remove barriers. We deliberately involved schools from different socioeconomic backgrounds — not just central schools, but schools in rural areas. Transport might seem minor, but for schools in more remote or disadvantaged areas, it's a real barrier. We didn't want some schools to have more opportunity than others. Everyone had the same opportunity. This connects to a broader point about class — not just school class, but social class. Some students have opportunities to discuss these topics at home; others don't. Events like ours can level that playing field.

IA: What about the impact on you personally, as a researcher?

DB: Definitely. I'm a physical scientist by background — not a social scientist. But this project gave me the opportunity to explore different paths for impact, different ways of communicating research. SEFARI and knowledge exchange gave me the chance to look at this work in a more consistent way and to bring some novelty to it.

We're thinking about writing an academic paper on the method. We've been so focused on direct impact that we haven't done it yet, but there's potential. There are now opportunities to disseminate this type of work in peer-reviewed journals looking at social learning, green transition, and what is known as transdisciplinary research (Note: this refers to research that brings academics and non-academics together to produce solutions to real-world problems). Such publication opportunities didn't exist in the past.

IA: What would help scale up this model?

DB: Policy support is essential — and that means funding. But the framework itself is replicable. You can customise it for local contexts: if tourism is more important than agri-food in a particular area, you target that sector instead. The methodology is flexible but consolidated.

The other thing is training. I went through facilitation training before the event. If we want to build capacity across the organisation, more people need access to that kind of training — on engagement, facilitation, participatory methods, qualitative analysis. Physical scientists like me don't naturally have those skills, but we can learn them.

IA: What's the key takeaway from this work?

DB: Involve stakeholders from the beginning. In our case, that meant teachers and career advisors — not just as participants, but as part of the working team that shaped the project from the start. Industry representatives told us the event helped them understand how to engage with young people, to learn what young people want. That's valuable — bringing all stakeholders together and discussing climate transition with young people in an educational framework created a different kind of discussion.

IA: Thank you, David. How would you like to end this conversation?

We need to recognise that the education sector is an important source of societal impact — not just industry, not just policymakers. If we want long-term impact, we can't ignore young people. Academia can no longer afford not to communicate with education professionals. Given the challenges ahead, this is something we have to do.

Reflection on follow-on workshop: In the room where Impact happens

By Dr Ioanna Akoumianaki, Policy and Impact Officer, James Hutton Institute

The second, follow-on workshop “Adapting Education to the Climate Transition” took place on 29 October 2025. Hosted by Bertha Park High School in its Drama Studio, the event was delivered in partnership with the James Hutton Institute and Skills Development Scotland. It was designed to be a multi-actor, multi-generational event bringing together young people, teachers, academics, and business professionals to co-construct actions for embedding climate adaptation in education.

At that time, “COP 31”, the 2025 United Nations Climate Change Conference, was just days away. Concepts such as climate adaptation, Net Zero and Just Transition were high on the global agenda. On my way to the workshop, I wondered how well understood these terms are outside academic and policy circles, realising that it was perfect timing for engaging with teachers, pupils and other education sector professionals on climate discussions.

The day was carefully structured to move from reflection to action. After a welcome from Ally Mills, Deputy Head Teacher, and introductions from Katrina Cuthbertson (Bertha Park High School) and Maxine Scott (Skills Development Scotland), the morning opened with a panel discussion on the impact and legacy of the first workshop — featuring pupils alongside Dr Lynn Wilson from the University of Glasgow. This was followed by talks from Dr Bridget Bradley (University of St Andrews) on "Eco Worrier" and Anya Sheridan from Strathclyde University on understanding meta-skills.

After lunch, the focus shifted to envisioning a climate-resilient future, with presentations on the fashion and renewable energy sectors from Dr Lynn Wilson and Dr Alison Karley from the James Hutton Institute. In the afternoon session, I facilitated one of the “Co-designing the future” group activities (Figure 1).

Figure 1. Wrapping up a constructive group activity with smiles and determination for a greener future.

At my table, pupils mapped out what an energy transition really means: better communication between communities and policymakers, fair job transitions, working with nature rather than against it. Their "Vision 2045" was bold: net-zero farming, smaller carbon footprints, shared responsibility across sectors. When asked which skills matter most, they chose critical thinking, initiative, collaboration, creativity, and communicating — their building blocks for generating impact beyond the classroom.

They also provided recommendations tailored to what action can be taken by different stakeholders: Teachers, Education Scotland, Businesses, and policymakers (Figure 2), which they presented to the room at the end of the session (Figure 3).

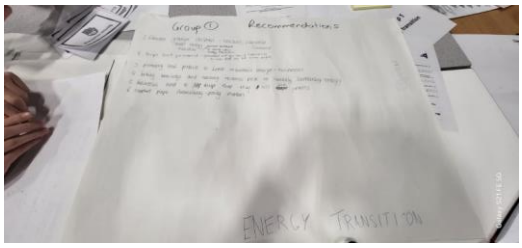

Figure 2. Pupils' recommendations for action, tailored to teachers, Education Scotland, businesses, and policymakers.

Figure 3. Pupils presenting their recommendations back to the room at the end of the session.

Seeing young people from Perthshire schools engage confidently with academics and industry professionals, and watching the cross-sector conversation unfold, brought home what UN Secretary-General António Guterres has said: "Climate change is the fight of our lives — and young people have been on the frontlines leading the charge for climate justice." This was that fight in practice — young people moving from anxiety to agency, not as passive recipients but as active participants shaping Scotland's climate future.

For me, it was a reminder that impact doesn't always start in reports or policy documents. It can also start in the classroom, when we stop talking about young people and start learning alongside them.

Get in touch

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