

CLIMATE JUSTICE, PLAY AND NATURE: PREPARING CHILDREN FOR A CHANGING WORLD

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'...the evolutionary purpose of childhood is to provide a protected period in which variation and innovation can thrive. Play is the most striking manifestation of that strategy [...] play lets us explore alternatives, whether they are alternative ways of moving or acting, thinking or imagining.' (Gopnik, 2016, p.250)

These words from cognitive development scientist [Alison Gopnik](#) offer some hope for the future of our children at a time when the world grapples with the consequences of climate change. Whilst the possibilities provided by play induce hope, access to play is dependent on the protection of natural environments so that children can enact their instinctual sense of awe, wonder and curiosity and in the process become connected to the natural environment. Unfortunately, environmental degradation caused by climate change is impacting children's right to play and develop, and more fundamentally, their right to survival.

Ensuring children's access to unpolluted natural environments, relies on global citizens acting together to tackle the climate crisis. However, sometimes the enormity of climate crisis invokes a feeling of helplessness. Thinking locally with a [children's rights](#) and a [climate justice perspective](#) may be more manageable.

This article is about small steps that preschools and primary schools in Europe and beyond are already taking so that young children can both thrive in their play in their present and be equipped with skills and knowledge to contribute in collective efforts to safeguard their futures.

The sources and inspiration are recent collaborative work amongst ICDI's partners in two European Union co-funded projects: [OUTSTE\(A\)M](#) and [Outdoor Play Labs \(OUTPLAY\)](#). These projects interweave four pressing themes in education: children's well-being; STEM (Science, Technology, Engineering and Mathematics); learning and sustainability education; and the role of outdoor play in early childhood education and care (ECEC) and primary education. The projects are examples of the transformative power of education for climate stewardship, one of the [core principles of climate justice](#). First, let's consider the climate crisis – children link.





HOW CLIMATE CHANGE IS AFFECTING CHILDREN

Europe is warming [twice as fast as the global average](#) and it's going to affect the well-being of today's children across their whole lives. As argued by Harvard University's Center on the Developing Child and FrameWorks Institute, adverse experiences caused by climate change hinders young children's development and learning opportunities. [Their report](#) presents evidence about the negative effects of heat waves, wildfires and floods and associated problems such as air pollution on children's developing bodies and brains and on ability of their caregivers to adequately care for them. The authors also highlight that children growing up in marginalised communities are even more susceptible to climate-related risks since they are more likely to live in areas of high pollution, poor infrastructure and limited health care access.

WHAT ARE CHILDREN THEMSELVES TELLING US ABOUT THEIR CONCERNS RELATING TO CLIMATE CHANGE AND WHAT WOULD THEY LIKE ADULTS TO DO?

According to research reviewed by Chloe Lucas and co-authors in 2024, young people report feeling frustrated, not listened to, and betrayed by older and betrayed by older generations when talking with them about climate change.

[They surveyed](#) 1,500 children aged 7 to 18 in Australia, who reported that they were most concerned about how to act on climate change. They also wanted to know what was preventing rapid action.

YOUNG PEOPLE STRUGGLE TO HAVE THEIR VIEWS ON CLIMATE GOVERNANCE HEARD

[Interviews with 22 climate advocates aged 11-29](#) confirmed that they have been rarely welcomed in decision-making spaces at COP meetings and are frustrated by slow negotiations and disappointing outcomes.

WHAT'S HAPPENING AT LOCAL LEVEL IS OF CONCERN TO CHILDREN.

As reported on BBC last month, [when 15-year-olds in Bradford UK were asked about climate change](#), the local environment was the first thing to come to their mind and where they had most of the concerns, specifically about environmental pollution, air quality and rubbish.

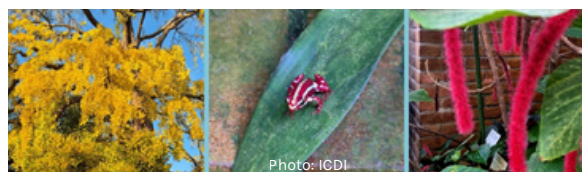
YOUNG PEOPLE DON'T BELIEVE THEIR EDUCATION IS PREPARING THEM FOR A GREENER FUTURE.

Almost one-third of the 40,000 young people in 21 countries in Europe and Central Asia [surveyed by UNICEF](#) in 2024 said education was not preparing them for a greener future, more than one-third said it was "somewhat" doing so. Fewer than one-fifth said that it was.

WHAT'S PLAY GOT TO DO WITH IT? INSIGHTS FROM OUTSTE(A)M AND OUTPLAY

Whilst preschool aged children may not consciously be 'doing science' they are constantly interacting with the material world in their play ([Van Keulen & Venema, 2021](#)). STEM in early childhood education and care (ECEC) and primary education is about capitalizing on children's natural curiosity about the natural, material, and physical world and their interest in solving problems and seeing how things work. Across Europe there is growing recognition that ECEC and primary education play a critical role in shaping children's creativity and capacity to engage with environmental challenges.

The premise of both the OUTSTE(A)M and OUTPLAY projects is that STEM starts from playing with the material world, what's real, immediate, close by, whether water, soil, and perceiving the real-world affordances of these materials through guided play. Both projects promote the outdoors as a STEM learning environment.



In the OUTPLAY project, coordinated by [Škola dokorán – Wide Open School](#), Slovakia, we asked educators working in both urban and rural areas in Croatia, Poland, Slovenia, and Slovakia about the added value of locating STEM activities outdoors. They told us about the 'realness' of firsthand and experiential learning outdoors, where children can observe and experience nature's elements and be sensitised to seasonal and cyclical changes in nature. They also highlighted the value of rich sensory experiences. As remarked by one educator, "it is much easier to understand the role of trees when they physically feel the canopy protecting them from autumn rain."

These educators also commented on the spaciousness of playing outdoors, and the health effects of physical activity that being outdoors makes possible. Nature's calming effects on children and the promotion of mental well-being was another theme in educator's reflections. As well as being more relaxed in nature, outdoors children were, according to this educator, "motivated to collaborate, [and] persist when faced with challenges, and proudly share their ideas and solutions. Over time, they become more confident, independent, and responsible toward one another and the natural world."



However, many educators of young children are not confident in STEM education, let alone STEM learning outdoors. They also struggle to know how to talk with young children about the climate crisis.

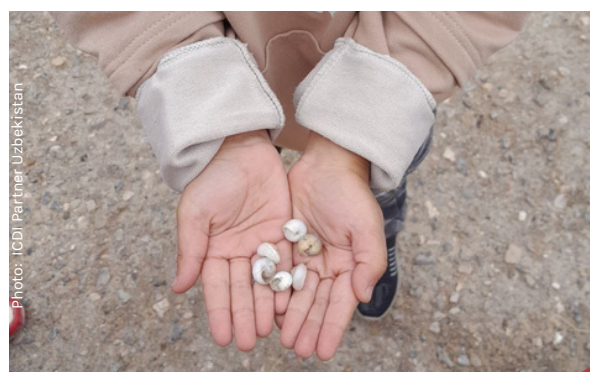
EDUCATORS NEED SYSTEM LEVEL STEM SUPPORT.

The [OUTSTE\(A\)M](#) Project, coordinated by European SchoolNet, with participation of [DCU](#) in Ireland, [AIJU](#) in Spain and [ICDI](#) in the Netherlands has been on enabling educators working with 2- to 9-year-olds to instil sustainability values in children from an early age through play-based hands-on experiences outdoors. The project has been actively challenging the misconception that preschool aged children are too young to understand STEM.

OUTSTE(A)M resources, developed and tested with educators and the children they work with, include [learning scenarios and outdoor activities](#). Conscious of professional development needs, earlier this year the project hosted the “[OUTSTE\(A\)M in Action: Let's STE\(A\)M](#)” [Massive OpenOnlineCourse \(MOOC\)](#) in which 1156 participants from 51 countries participated. Ninety-five percent of the participants reported that because of the MOOC they were [more confident incorporating an integrated STEM approach in their teaching](#). As well as professional development in STEM outdoors, educators need broad system level support.

OUTSTE(A)M's [recommendations](#) call on policy makers to embed outdoor learning in policy and curriculum frameworks and improve access to safe outdoor spaces.

The challenge to align and embed outdoor learning in curricular frameworks has already been taken up in the OUTPLAY project, now in its first year. It is putting the spotlight on the relationship between STEM and social and emotional learning (SEL) outdoors. This week educators in Croatia, Poland, Slovenia, and Slovakia are participating in focus groups discussions to fine tune thematic projects and activities that promote both STEM and SEL competencies. Activities such as sound walks, soil explorations, shelter design challenges are supporting children to connect with and care for nature.





A CALL TO ACTION

Children's rights under the [United Nations Convention on the Rights of the Child](#) also apply to environmental protection. Children have the [right to a clean, healthy and sustainable environment](#). The report from Harvard Center on the Development Child andFrameWorks Institute concludes that necessary steps to protect children's health and wellbeing in the context of climate change are to take urgent action to reduce carbon emissions, adapt to climate challenges, and strengthen social support systems. Preschool and primary school communities can play a role in this endeavour by modelling sustainable behaviours like recycling, composting and saving water; greening outdoor play spaces; integrating outdoor learning into preschool and primary school curricula, and training educators to support children in age-appropriate and play-based scientific inquiry. When it comes to talking about climate change the advice, to quote an [earlier ICDI paper on this topic](#), is to “focus less on the scary stuff, and more on nurturing a connection with nature” for younger children. With primary school children, we also have the opportunity and responsibility through hands-on experiential play and learning outdoors to hold meaningful conversations with them about the climate crisis and to ensure that they get accurate and age-appropriate information.



Clearly, outdoor play and learning can't solve the climate crisis by itself. It can however, help to raise a generation of children that are curious about, care for and are connected to nature. This is good for children's wellbeing and good for a more sustainable future.

ABOUT THE AUTHOR

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