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Young people's environmental sustainability competence: Emotional, cognitive, behavioural, and attitudinal dimensions in EU and OECD countries

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The paper is the first in a series of two papers mapping young people's environmental sustainability competence in EU and OECD countries that were prepared as background for the forthcoming OECD Skills Outlook 2023 publication. The papers are the results of a collaboration between the OECD Centre for Skills and the European Commission - Joint Research Centre (Unit B4) on students' environmental sustainability competence. The second paper is titled: 'The environmental sustainability competence toolbox: From leaving a better planet to our children to leaving better children for our planet' (https://doi.org/10.1787/27991ec0-en).

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Executive summary

To promote a more sustainable and greener future, today's societies must nurture in young generations not only a solid understanding of science but also an appreciation of the fragility of the environment and ecosystems. This, in turn, can help youngsters evaluate the environmental consequences of their actions, promote their willingness to protect the planet and empower them to contribute to the green transition through their work, civic participation and everyday actions. Having high levels of environmental sustainability competence requires having a wide range of knowledge, skills, attitudes and values.

This paper takes a comprehensive and crosscutting approach to defining environmental sustainability competence covering cognitive, emotional, attitudinal and behavioural dimensions. The paper follows the European Union (EU) GreenComp framework, which defines four main competence areas of environmental sustainability competence: embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures and acting for sustainability. Based on this framework, the paper uses data from various rounds of the OECD's Programme for International Student Assessment (PISA) to assess youngsters' environmental sustainability competence and consider which factors are associated with students' environmental sustainability competence.

Throughout countries, the vast majority of 15-year-old students reported being aware of climate change and global warming (78% and 79% on average throughout EU and OECD countries, respectively). However, students' level of perceived environmental awareness varies greatly by environmental topic. In 2015, on average throughout countries, students reported the highest levels of awareness about air pollution (84% of students throughout EU countries and 83% throughout OECD countries) and the lowest levels of awareness about the use of genetically modified organisms (42% on average throughout EU and OECD countries). Variation is also found in students' pro-environmental behaviour. For example, in 2018, around 6 out of 10 students reported being engaged in saving energy for environmental reasons (69% in EU countries and 71% in OECD countries), while fewer than 2 out of 5 students reported participating in activities in favour of the environment (around 37% and 39% on average throughout EU and OECD countries, respectively).

There are large disparities in youngsters' environmental sustainability competence between students with different socio-economic backgrounds. Overall, students from socio-economically disadvantaged backgrounds are less likely to care about the environment and be aware of environmental issues than students from more advantaged households. On average, they also have lower science achievement scores, engage less in pro-environmental behaviours and are less likely to be environmental sustainability all-rounders.

Gender differences in students' environmental sustainability competence are subtle, but pervasive. For example, gender differences in the awareness of environmental problems differ depending on the nature of such problems. Throughout EU and OECD countries, boys report higher levels of awareness of nuclear waste, the increase of greenhouse gases in the atmosphere, the use of genetically modified organisms and the consequences of clearing forests for other land use. Girls reported higher levels of awareness of water shortage, air pollution and extinction of plants and animals. Similarly, while boys scored higher in physical, and earth and science, areas, girls performed better in biology.

Multiple factors determine the extent to which youngsters are able to acquire environmental sustainability competence, including the household and school environments young people have been raised in. For example, analyses reveal that, within families, there is a positive correlation between parents' and children's environmental behaviours. Parents and families play a crucial role in the way children and young people are socialised. At the same time, children can educate their parents on the importance of engaging in protecting the environment and engaging in pro-environmental behaviours.

Analyses reveal large differences between schools in science achievement. By contrast, on average, students' awareness of environmental problems, engagement in pro-environmental behaviours and caring for the environment vary little across students attending different schools. For example, calculations based on PISA 2015 and 2018 data show that, whereas across EU countries 34% of performance differences in science achievement were observed between schools (31% across OECD countries), only 6% of the overall variance in environmental awareness was between schools (6% across OECD countries).