



## D4.1 Curriculum analysis

- how to integrate climate change into classroom  
and at the school level



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D4.1 Curriculum analysis - how to integrate climate change into classroom and at the school level

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## Summary

Across six European countries (Belgium, Ireland, Poland, Portugal, Serbia, and Sweden), the integration of climate change into primary and secondary school curricula shows varied approaches and emphases. While some nations introduce the topic directly from primary levels, others take a subtler route by first focusing on related environmental concepts. Common subjects for climate change education include Geography, Science, Environmental Studies, and others. Additionally, the terminology used to address these topics can differ, with terms such as "sustainability" and "sustainable development" being prevalent. An accompanying teacher questionnaire, which drew responses from around 400 educators, sought to understand the pedagogical strategies related to climate change education. On average, students across the 6 countries are introduced to climate topics around 9-11 years of age. To stay updated, educators primarily rely on independent studies, scientific literature, and various training programs, underlining their dedication to a rapidly evolving field.

## Curriculum Analysis

This curriculum analysis pertains to the inclusion of climate change within the educational objectives of primary and secondary schools in Belgium (Flanders), Ireland, Poland, Portugal, Serbia and Sweden. It reviews subject coverage, the age of introduction, frequency of mention, related terms, and additional remarks.

### Belgium

Within the Flemish region of Belgium, primary education includes climate change topics as part of the Science and Technology curriculum. The curriculum also sheds light on associated terms, such as "climate" and "nature." Moving on to secondary education, the curriculum does not heavily emphasize "climate change" explicitly. Instead, it introduces students to this subject under the umbrella of the Citizenship competence. There's a notable inclination towards using the term "sustainability" to address a range of environmental issues and challenges.

### Ireland

In Ireland, students are introduced to the intricacies of climate change from the early stages of primary education. This early foundation is built upon the understanding of the relationship between human settlements and climate. Two central subjects, Geography and Science, act as conduits for this learning. Additionally, the curriculum ensures students grasp related concepts, emphasizing "sustainable development" and the "sustainable use of Earth's resources." This approach signifies Ireland's dedication to nurturing environmentally conscious students from a young age.

### Poland

Poland adopts a slightly different approach to climate change education. The primary

curriculum does not overtly discuss the term "climate change." Rather, students are submerged in lessons promoting environmental consciousness through discussions on nature preservation, waste management, and similar topics. Secondary education in Poland is more direct. Here, Geography plays a pivotal role in introducing students to climate issues, especially via segments like "Environmental problems of the modern world."

### Portugal

Portugal ensures that climate change and related subjects are accessible from the commencement of a student's educational journey. Even if the direct term "climate change" is not uniformly highlighted, primary education exposes students to allied concepts in subjects such as Environmental Studies, Citizenship and Development, Natural Sciences, and Geography. This pattern is echoed in secondary education, where climate-related terms are subtly integrated into subjects, including biology, geology, physics, chemistry, and geography.

### Serbia

Serbia's primary education doesn't outright emphasize the term "climate change." However, in grades 5-8, students encounter themes closely related to climate issues within the biology curriculum. Outside the formal curriculum, educators often take the initiative to engage students in environmental topics through various methods, such as extracurricular activities. As students' progress to secondary education, although "climate change" remains somewhat elusive, related concepts are strategically embedded within subjects like biology, geography, chemistry, physics, and education for sustainable development.

### Sweden

In Sweden, primary students in years 7-9 delve into climate change topics, particularly via the Geography and Physics curriculums. The wider curriculum also consistently introduces related terms such as "climate", "environment," and "sustainable development" across various subjects. As students advance to secondary education, Geography continues to be the central subject where climate change is prominently discussed. The Swedish education system benefits from teachers who, outside the formal curriculum, ensure that climate-related subjects are brought to life through practical activities and discussions.

## Teacher questionnaire

The following summary offers an insight into how these six countries structure their climate change education within their academic frameworks.

This report elucidates findings from an exhaustive survey aimed at gauging the pedagogical approaches to climate change education across various European nations. Drawing responses from nearly 400 educators spanning a diverse array of countries, the survey aspired to ascertain the age and academic subjects in which

topics related to climate change are typically introduced. Furthermore, insights into the methodologies employed by educators to stay abreast of advancements in this rapidly evolving and paramount field were pursued.

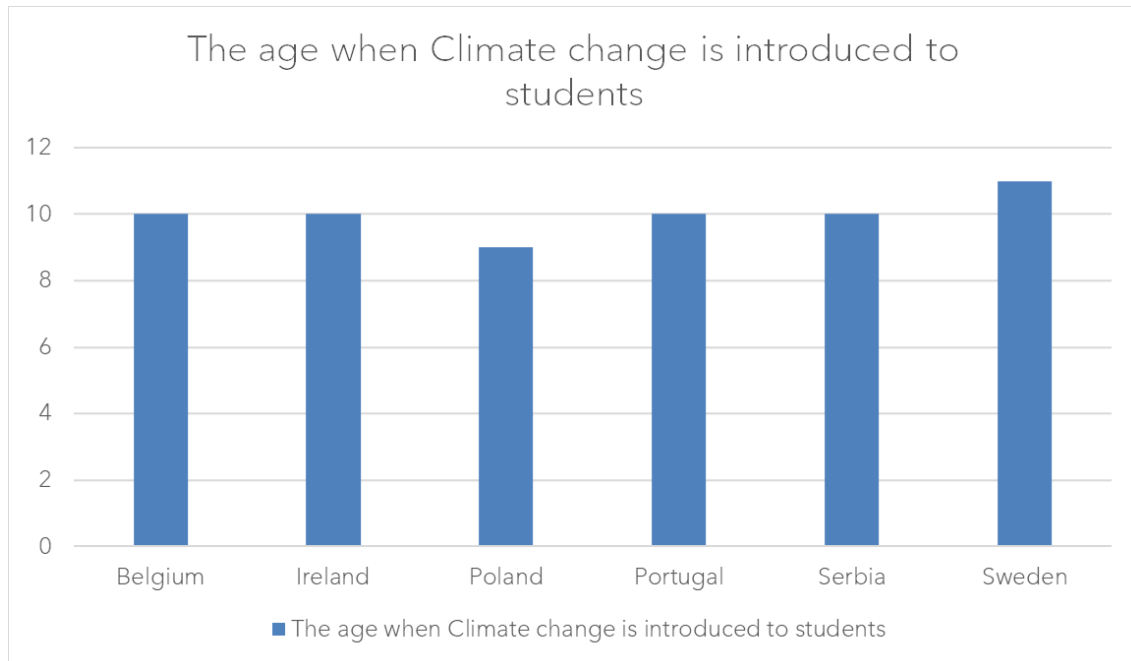


Figure 1: The age when Climate change is introduced to students

In Poland, the curriculum introduces students to climate change topics around the average age of 9. Predominantly, the subjects of Geography, Science, and Environmental Studies incorporate this theme. For their continuous professional development, Polish educators largely resort to independent studies, perusal of scientific books and journals, as well as participation in courses and conferences. Their primary instructional subjects are Geography, Science, and IT.

In Serbia, topics surrounding climate change are generally presented to students around the age of 10. The principal subjects addressing this matter are Geography, Chemistry, and Biology. To stay updated, Serbian educators predominantly delve into scientific books and journals, engage in independent studies, and participate in teacher training programs. Their most frequently taught subjects encompass Biology, IT, and Chemistry.

Swedish teachers commence education on climate change when students are approximately 11 years old. The subjects that often encompass this topic include Science, Social Studies, and Geography. To bolster their professional development, Swedish educators chiefly turn to independent studies, the reading of scientific books and journals, and enrollment in online training courses. They predominantly instruct in the subjects of Science, Social Studies, and Geography.

Elsewhere in Europe, students are typically introduced to the climate change discourse at about the age of 10. Notable subjects in this regard are Science, Geography, and Environmental Studies. For their continual professional growth,

educators from these regions majorly rely on independent studies, online courses, and perusing scientific articles. The primary subjects of instruction are Science, Mathematics, and IT.

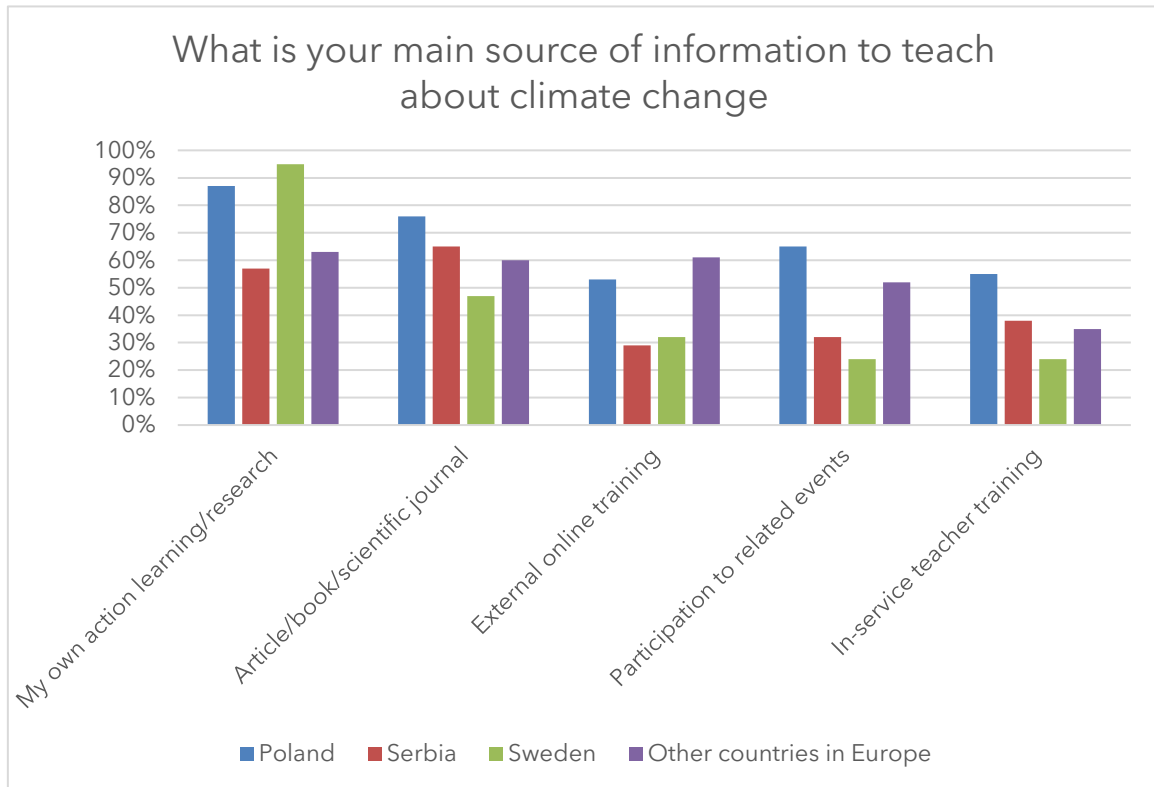


Figure 2: What is your main source of information to teach about climate change

## National projects regarding Climate change

### Belgium

In Belgium, the initiative known as “ClimateLINK” was inaugurated with the intention of reconciling modern climate science and the younger generation. Given the mounting issue of misinformation, ClimateLINK is resolute in its objective to disseminate genuine and comprehensible data pertaining to climate change. This venture is multi-dimensional, encompassing extensive educational materials, interactive seminars, informative lectures, and an array of events, both virtual and terrestrial. The overarching aim is to foster profound comprehension of climatic changes and to develop essential capabilities for impending climate adaptation. <https://www.uantwerpen.be/nl/projecten/global-change-ecology/burgerwetenschap/klimaatlink/>



## Ireland

Ireland has embarked on a notable academic endeavor termed the "All-island Schools 4 Climate Action". This collaborative effort, involving distinguished entities like Co-operation Ireland and EcoEd4All, aspires to transform environmental pedagogy. By incorporating accredited virtual lectures on climatology and promoting inter-school collaborations, the initiative accentuates hands-on, community-centric activities to bolster education. It prides itself on its inclusivity, offering its myriad resources to learners, pedagogues, and the wider public.

<https://cooperationireland.org/projects/all-island-schools-4-climate-action/>

## Poland

In 2022, Poland's Ministry of Climate and Environment advanced its dedication to ecological pedagogy by unveiling the "Friends of the Climate" curriculum. Designed specifically for junior school attendees, this curriculum simplifies intricate climatic theories into comprehensible sessions. Catering to a spectrum of age groups, the content elucidates basic climatic terminologies, consequence assessments, and adaptive methodologies at diverse magnitudes. Complementing this, the ministry further buttressed pedagogues by orchestrating a sequence of illuminating seminars.

<https://www.gov.pl/web/edukacja-ekologiczna/przyjaciele-klimatu>

## Portugal

The "Schools for the Planet" endeavor in Portugal epitomizes the nation's allegiance to global ecological dilemmas. Being a segment of the European venture 1Planet4All, its objective is to amalgamate the efforts of educational institutions across the nation to proactively address climate anomalies. The initiative not only endows recognition to institutions already at the vanguard but also offers a platform for nascent endeavors. With resources extending from informational repositories to strategic plans, it offers an exhaustive approach to both pedagogy and praxis.

<https://escolaspeloplaneta.pt/projeto/>

## Serbia

Reacting to the palpable climatic deviations observed in South-East Europe, the "SEE ECO-STEAM CHALLENGE" was conceptualized. A tripartite cooperative enterprise involving Serbia, Croatia, and Bosnia and Herzegovina, its intention is to incorporate educational establishments, pedagogues, and students in the scrutiny and mitigation of climatic irregularities. By collating contemporary meteorological data, juxtaposing it with archival patterns, and conceptualizing adaptive stratagems, this initiative positions the youth at the vanguard of transformation. Its objectives are manifold, spanning from data acquisition and evaluation to innovative solution formulation and artistic elucidation.

<https://int.cpn.edu.rs/en/ecosteam-challenge/>

## Sweden

Sweden, renowned for its legacy in ecological interventions, launched the



“Klimatlyftet” (Climate Boost) program within the Gothenburg Region. Targeting pedagogical professionals and institutional leaders, it anchors its methodologies in modern research spanning pedagogical theories and sustainability. With a dedicated digital hub offering educational modules and resources, the initiative has received commendable reviews from its recipients. It envisions endowing learners with exhaustive insights into climatic alterations and promoting symbiotic relationships between educational institutions and the community.

<https://www.klimatlyftet.se>

## Reflections

The curriculum analysis concerning the inclusion of climate change within primary and secondary schools across the six European countries reveals distinct patterns and strategies. The overarching trend highlights a conscious move to incorporate climate change, either explicitly or subtly, within the educational framework. However, the age at which it's introduced, the subjects it's integrated into, and the emphasis on related terms vary across the countries. For instance, while Ireland demonstrates an early commitment by introducing climate change in primary education, Poland and Serbia opt for a more indirect approach, focusing on related environmental topics before tackling climate change head-on in secondary education. Additionally, certain terminologies such as "sustainability" in Belgium or "sustainable development" in Ireland and Sweden are recurrently used, hinting at a broader perspective on the environmental crisis. The nuances in the curriculum demonstrate that while there is a consensus on the importance of climate education, the modality of its integration is influenced by regional pedagogical traditions, societal values, and curricular priorities.

The survey is aimed at understanding the pedagogical approaches to climate change education and sheds light on not just when and how this topic is introduced in classrooms, but also on the methodologies educators employ to keep themselves updated. There is a striking consistency in the age bracket (9-11 years) when students across different European countries are introduced to climate change topics, indicating a collective understanding of the suitable cognitive maturity required. Geography, Science, and Environmental Studies emerge as the central subjects that often house this critical topic, emphasizing its multidisciplinary nature. As for educators, independent studies, along with the reading of scientific books and journals, emerge as predominant methods of professional development. This suggests that educators recognize the dynamic nature of the field and are proactive in ensuring that their knowledge stays current. The emphasis on subjects such as Science, IT, and Geography for instruction further accentuates the interdisciplinary nature of climate education, highlighting the need to approach the issue from multiple academic angles.

## Next step

We have embarked on a journey to understand how schools across Europe approach the topic of climate change. By diving deep into educational materials and engaging



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in meaningful conversations with educators, we aim to provide clearer and more comprehensive resources for schools to address this pressing issue.

Our research has illuminated an interesting observation: the term 'climate change' - a phrase we frequently encounter in our daily lives - is not as prominently featured in educational settings as one might assume. Often, the vast and complex issue of climate change is fragmented, dissected into more manageable, smaller topics. This means students might learn about specific aspects of climate change, like rising sea levels or deforestation, without necessarily connecting them under the larger umbrella of global climate change. Furthermore, there isn't a dedicated class solely focusing on climate change. Rather, smaller bits of information about the topic are woven into various subjects.

Taking our findings into account, our next step is to compile and assess effective teaching methods and strategies that educators have shared with us. These could range from classroom activities, projects, or even digital tools. Our hope is that, in our upcoming meetings, we can collaboratively decide on the best practices that are both engaging and educational. It's evident from our interactions that many teachers often seek out additional information on climate change independently, showing a genuine interest in the subject. We believe our project can act as a bridge, providing these dedicated educators with a wealth of resources and teaching tools.

In essence, after closely examining the current landscape of how European schools discuss and teach about climate change, we're optimistic that our project can play a pivotal role in enhancing the quality and clarity of climate change education.

## Sources

### Belgium

1. Lagere school <https://shorturl.at/zGX14>
2. 1stegraad <https://shorturl.at/kyT36>
3. 2degraad <https://shorturl.at/joLW1>
4. 3de graad, eerste leerjaar = 5de middelbaar/ fifth year/grade <https://shorturl.at/juBJ5>
5. 3de graad, tweede leerjaar = 6de middelbaar/ sixth year/grade <https://tinyurl.com/mr3697eh> and <https://tinyurl.com/mujvr6pk>

### Europe

1. Eurydice <https://eurydice.eacea.ec.europa.eu/>

### Ireland

1. Primary Curriculum Areas <https://www.curriculumonline.ie/Primary/Curriculum-Areas/>
2. Senior Cycle Subjects <https://www.curriculumonline.ie/Senior-cycle/Senior-Cycle-Subjects/>

### Poland

1. Podstawa Programowa <https://podstawaprogramowa.pl/>

### Portugal

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2. Aprendizagens Essenciais - Ensino Secundário <http://www.dge.mec.pt/aprendizagens-essenciais-ensino-secundario>

### Serbia

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2. SKR <http://skr.rs/ziQD>

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