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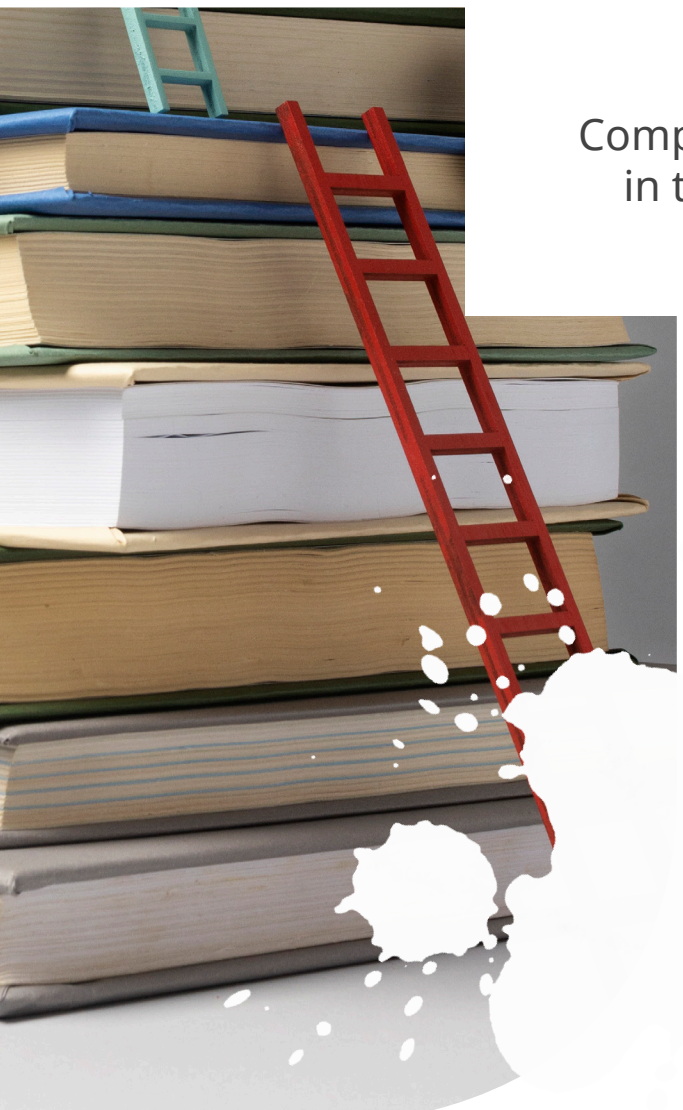
Teachers for a Sustainable Future

Comparative Report on Global Education in the Pre-service Teacher Education in the Visegrad Countries



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TEACHERS FOR A SUSTAINABLE FUTURE

Comparative Report on Global Education in the Pre-service Teacher Education in the Visegrad Countries

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LIST OF ABBREVIATIONS*

CPD: Continuous professional teacher development
CSOs: Civil society organizations
CZ: Czechia
DE: Development education
ESD: Education for sustainable development
GE: Global education
GENE: Global Education Network Europe
HEI: Higher Education Institution
HU: Hungary
ITE: Initial teacher education
MEN: Ministry of National Education of the Republic of Poland
MERDYSR: Ministry of Education, Research, Development and Youth of the Slovak Republic
MFEASR: Ministry of Foreign and European Affairs of the Slovak Republic
NAT: National Core Curriculum, Hungary
NGOs: Non-governmental organisations
NGDOs: Non-governmental development organisations
ODA: Official Development Assistance
PL: Poland
SAIDC: The Slovak Agency for International Development Cooperation
SK: Slovakia
SD: Sustainable Development
SDG: Sustainable Development Goals
TE: Teacher Education
UN: United Nations
UNECE: United Nations Economic Commission for Europe
UNESCO: United Nations Educational, Scientific and Cultural Organization

** abbreviations referring to the investigated universities are listed in Table 1.*

1. INTRODUCTION AND BACKGROUND OF RESEARCH

1.1. A brief description of the project

The Sustainable Development Goals (Agenda 2030), adopted by the United Nations (UN) member states, aim to ensure that all students acquire the knowledge and skills necessary for a sustainable future by 2030. Achieving this goal depends significantly on teacher education, as teachers play a critical role in fostering sustainability and global responsibility, creating a powerful multiplier effect (Bourn, 2015). While extensive research exists on preparing teachers for Education for Sustainable Development (ESD) and Global Education (GE), the literature largely focuses on Western European contexts (Brundiers et al., 2021; Wiek et al., 2015), where these initiatives have longer traditions. In contrast, ESD and GE remain underexplored in Central-Eastern Europe, where socio-political and historical contexts differ significantly (Hodorovská & Rankovová, 2024; Kuleta-Hulboj, 2020; Mónus, 2020; Müller, 2018; Varga, 2020).

The teachers for a sustainable future project (www.teachers4sd.org) aimed to empower various stakeholders of teacher education in order to enhance the representation and integration of ESD and GE within pre-service teacher education in the Visegrad countries. The project was co-financed by the International Visegrad Fund (IVF) and the European Union Presidency Project for Hungary (EUPP4), coordinated by the HAND Association (Hungarian Association of NGOs for Development and Humanitarian Aid) and implemented in the Visegrad countries (Czechia, Hungary, Poland, and Slovakia).

To gain better insight into the current state, practices, and changes in ESD and GE within pre-service teacher education, the researchers from the four Visegrad countries - who are the authors of this study - conducted a collaborative empirical study across all V4 countries. The project also fostered networking, knowledge sharing, and collaboration at national and international levels, strengthening cooperation among universities, experts, and sectors. Additionally, it involved the collection and dissemination of good practices and initiatives.

This comparative study presents the results drawn from this research based on the investigated teacher education institutions in all four V4 countries. The research examined the motives, organisational strategies, implementation practices and development opportunities of ESD and GE with the aim to contribute to the promotion of the integration of ESD and GE in teacher education including recommendations based on research results. The recommendations outlined in the report aim to engage decision makers at institutional, national, and international levels, supporting effective advocacy work.

1.2. Methodology and ethical statement

The methodology of the research was developed based on the traditions of qualitative social science research, taking into account basic principles of classical social research and qualitative research guidelines (Rubin & Babbie, 2000; Flick, 2014). The analyses allowed for a multidimensional investigation of complex social phenomena, in this case global education (GE) and education for sustainability (ESD). During the joint research the same concept and research methods were followed in each of the four countries. The common **conceptual starting points** were the Sustainable Development Goals (Agenda 2030) and the Dublin Declaration (GENE, 2022). Data were collected during the summer and autumn of 2024, using **semi-structured interviews** (N = 47 in the four countries). The interviews were preceded by pilot interviews (N=4) and analysis. During the pilot analysis, we constructed a category system using both theory-driven and data-driven approaches (Sántha, 2020), making recommendations to research partners based on the coding experiences. In the finalised interview plan (agreed by all research partners and approved by a research ethic committee before the start of data collection), common anchor questions were used to allow comparison between countries.

These identified five basic content dimensions of data collection: 1) respondents' professional journey, involvement and motivations; 2) the university context, university strategies and sustainability efforts in which teacher education operates; 3) ESD and GE's inclusion in teacher education programs and requirements; 4) good practices; 5) recommendations. In the international research group, our analytical aspects were also common. The data were analysed using the method **of template analysis** (Brooks et al., 2015). It is a form of thematic analysis which emphasises the use of hierarchical coding but balances a relatively high degree of structure in the process of analysing textual data with the flexibility to adapt it to the needs of a particular study. Central to the technique is the development of a coding template, usually on the basis of a subset of data, which is then applied to further data, revised and refined (Brooks et al., 2015). In addition to analysing interviews, we performed a **document analysis** (Rubin & Babbie, 2000) to examine the regulatory environment and institutionalisation of sustainability and global education. This included national strategy documents for teacher education, sustainability strategies, research and training programmes, and relevant content from the institutional websites of the studied institutions.

The strength of the qualitative methods used in this research lies in their ability to reveal the hidden mechanisms, challenges and supporting factors for the integration of GE and ESD in teacher education. The semi-structured questions used in the interviews provided a deep, contextual interpretation of the data, while at the same time giving respondents the opportunity to express their own experiences, motivations and reflections. The methodology of qualitative content analysis allowed for the inclusion of contextual factors and country-specific political, institutional and cultural specificities. The results of the research not only provide relevant information for teacher education in the four countries, but may also contribute to the international discourse on GE and ESD.

Although the HEIs included (see Table 1) cover a wide range of different institutions, they are not representative either at national or V4 level. The number of interviewees per HEI (4 by institution, preferably those who played a key role in the integration of GE and ESD in the given teacher education program, 2 of them included academics, 2 of them included members from the higher management) ensured us to develop a nuanced picture of the individual institutions. The research was anonymous, interviewees gave their consent to participate in the research and had the opportunity to withdraw their participation at any time. The research was conducted based on the ethical permission (number: 1/2024, date: 18 January 2024) obtained from the Research Ethics Committee of University of Debrecen, Faculty of Humanities, Doctoral School of Human Sciences.

Table 1: List of universities participating in the research

COUNTRY	NAME OF UNIVERSITY	ABBREVIATION
Slovakia	Matej Bel University in Banská Bystrica	**UMB**
Slovakia	Comenius University in Bratislava	**UNIBA**
Poland	Maria Curie-Skłodowska University in Lublin	**UMCS**
Poland	University of Silesia in Katowice	**US**
Czechia	Jan Evangelista Purkyně University in Ústí nad Labem	**UJEP**
Czechia	Palacký University Olomouc	**UPOL**

Hungary	Eszterházy Károly Catholic University	**EKKE**
Hungary	University of Szeged	**SZTE**
Hungary	University of Nyíregyháza	**NYE**
Hungary	University of Pannonia	**PE**
Hungary	University of Debrecen	**DE**
Hungary	University of Pécs	**PTE**

1.3. Introduction to the background of the project

1.3.1. The Evolution and Challenges of GE/ESD in the Visegrad countries

In **Slovakia**, Global Education (GE) originated from Development Education (DE) and was historically overseen by the Ministry of Foreign and European Affairs (MFEASR). Following Slovakia's EU accession, its development cooperation system was modeled on Western European practices (Nadácia Pontis, 2011), framing DE as a tool to raise awareness of global issues and development cooperation. Legal frameworks, such as the Act on Development Cooperation (2015) support this arrangement by claiming that DE was a part of the official development assistance (ODA) alongside development cooperation and humanitarian assistance, while the Medium-Term Strategy for Development Cooperation (2019-2023) (MFEASR, 2019) mentions that GE should serve as a tool via which development issues can be incorporated into the curricula and syllabi of Slovak educational institutions. However, the current Medium-Term Strategy for Development Cooperation (MFEASR, 2024) no longer emphasises GE in Slovak curricula, instead positioning it as a means to promote awareness of development cooperation, with projects focusing more on Slovakia's partner countries than on domestic education.

Formally, GE was introduced in 2012 with the first National Strategy for Global Education (2012-2016), which defined it as an umbrella concept encompassing development, environmental, multicultural, peace, and human rights education. Despite its termination in 2016, the strategy remains a key reference, and GE continues to be the dominant term used by NGOs, academia, and the Ministry of Education, Research, Development, and Youth (MERDYSR). However, since the National Strategy for Global Education (2012) has not been updated even though it has officially been terminated in 2016, the mentions of sustainable development remain minimal.

When it comes to the institutions that are responsible for GE, traditionally, GE has falled under the agenda of MFEASR. However, since 2020, thanks to the tripartite agreement between MERDYSR, MFEASR and GENE from December 2020 (Dolejšová, 2021, as cited in Halászová, 2021), GE is gradually moving under the agenda of MERDYSR. Currently, MERDYSR is also responsible for drafting a new National Strategy for GE, aligning with the Dublin Declaration (2022) and reaffirming GE as an umbrella term.

Practically, GE remains largely marginalised in education, with implementation relying on non-governmental development organisations (NGDOs) that provide training, materials, and workshops. Despite their efforts, GE is not systematically integrated into Slovak education and depends on individual initiatives rather than structured policies.

In **Poland**, as in many other countries, GE is part of development cooperation. According to the Development Cooperation Act, passed in 2011 (Ustawa z dnia 16 września 2011 r. o współpracy

rozwojowej, 2011), the body responsible for the coordination and financing of GE is the Ministry of Foreign Affairs. The Ministry of National Education (MEN) is responsible for facilitating GE within the formal education sector and for providing in-service teacher training. However, it has been playing a peripheral role. The driving force for promoting and implementing GE are NGDOs, which support MEN in teacher training, publish plenty of educational resources, and conduct educational, monitoring and campaigning activities.

A milestone in the development of GE in Poland was an educational reform in 2008 that incorporated GE into the national curriculum. This was partly due to the lobbying efforts of Grupa Zagranica and NGDOs which initiated the national multi-stakeholder process on GE in Poland (2009–2011). This process resulted in the signing of the Multistakeholder Agreement on Global Education, in which stakeholders (the NGDOs, the Ministry of Foreign Affairs and MEN) confirmed their willingness to work towards the GE, to strengthen cooperation in this area and agreed on a common definition of GE. It defines it as "the part of civic education and upbringing, which broadens their scope through making a person aware of the existence of global phenomena and interdependencies. Its main objective is to prepare the recipients to face the challenges related to all humankind" (Grupa Zagranica, 2011). According to this Agreement, the term *"global education"* should be used as an umbrella term, encompassing other *"adjectival educations*" such as intercultural education, human rights education, or - last but not least - ESD. However, ESD in Poland has strong roots in environmental education, which has resulted in a bias towards this area (Kuleta-Hulboj, 2024).

The fields of GE and ESD have developed in parallel, occasionally converging and then diverging again, particularly at the academic and political levels. In the practical work of NGOs, however, the distinction between them is less visible. Nevertheless, a certain ecological emphasis can be observed among NGOs focusing on ESD, while those engaged in GE tend to concentrate on issues of global justice and relations between the Global South and the Global North.

Academically, ESD has a longer tradition, while GE gained attention only in the past decade. Politically, GE falls under the Ministry of Foreign Affairs, while ESD is managed by the Ministry of Climate and Environment.

Poland's key policy document regarding GE is the aforementioned Development Cooperation Act, enacted in 2011, in which GE is defined as follows: „Development cooperation also includes educational activities aimed at raising awareness and understanding of global issues and interdependencies between countries, referred to as ‚global education'." (Ustawa z dnia 16 września 2011 r. o współpracy rozwojowej, 2011).

Regarding ESD, the principle of sustainable development is embedded in Poland's Constitution. In 2020 the government adopted the document 'National Environmental Policy 2030 - a Development Strategy in the Area of Environment and Water Management', which, among other things, includes the task of creating a ‚Strategic Action Plan for Environmental and Climate Education'. This document forms a base for integrating climate education and education for sustainability more widely into formal and non-formal education.

In **Czechia**, the National Strategy for Global Development Education (GDE) was first implemented for 2010–2015, with an action plan extending until 2017. Two reviews were conducted in 2013 and 2015. The current strategy (2018–2030), part of the Development Cooperation Strategy, emphasises raising awareness of development issues through formal and non-formal education, strengthening the integration of sustainable development in the education system, and providing methodological support for teachers. This effort involves public institutions, NGOs, and academia, utilising digital and social media for broader outreach (MFA, 2019).

In **Hungary**, the roots of environmental education date back to the 1970s, when nature conservation and environmental education started to be included in national curricula, publications and

NGOs on environmental education and the protection of natural values appeared, and the first laws for the protection of the natural and human environment were passed, such as the laws for the protection of natural values of national importance, the protection of the human environment, or the protection of some rare vertebrate species (Mónus 2020). Since 1995, all National Curricula have included expectations for environmental education and awareness-raising at different levels of public education. Similar to international trends, the concept and practice of education for sustainability emerged in the 1990s (following the 1987 Brundtland Report). The institutionalisation of global education in Hungary appears to be a later and more partial development compared to education for sustainability, with its interpretation remaining somewhat ambiguous (Balogh, 2021). Unlike many other countries, where *„global education"* and *„global citizenship education"* are widely recognised terms, Hungary has adopted the term *„global responsibility education"* (Varga, 2018). The stated objective of the global responsibility concept is to consolidate past achievements and establish a foundation for integrating GE into both formal and non-formal education through broad cooperation and a unified approach, aligning with the principles of Agenda 2030. A significant milestone in this area was the adoption of Government Decision 118/2014 (III. 27.) on International Development Cooperation and Humanitarian Aid, which mandates collaboration among relevant ministries to shape young people's attitudes and promote global responsibility education. This was followed in 2016 by the approval of the „Concept on Education for Global Responsibility in Formal and Non-Formal Education[1]." This document highlights how global education in most developed countries enhances social awareness and the capacity to address global challenges. The normative framework outlined in the concept calls on relevant ministers to actively promote education for global responsibility, collaborate with professional and non-governmental organizations, and organise thematic communication weeks on the topic. In principle, these governmental commitments and expectations have the potential to provide new momentum for the advancement of GE in Hungary. The tasks identified in the concept regarding national curriculum, the promotion of GE, developing educational materials, and sharing good practices were delegated to the Ministry of Human Capacities and the Ministry of Foreign Affairs and Trade. Though the concept has not expired yet, developments in advancing GE since its adoption are still taking place in isolated terrains of education and are not in any way measured against the government GE concept.

The most recent documents in which the concept of GE and ESD is at least partly reflected are Hungary's International Development Cooperation Strategy 2020-2025[2], Hungary's National Sustainable Development Framework Strategy 2012-2024[3], and Hungary's Education Strategy for the European Union 2021-2030[4].

As for the prevailing terminology, the concept of ESD is primarily used in the Hungarian context, whereas in the other three V4 countries, GE serves as an umbrella term that encompasses this concept/topic.

1.3.2. GE/ESD in Public Education

In **Slovakia**, GE remains marginal in the education system despite increased engagement from MERDYSR since 2020. While 38% of teachers reported teaching GE in 2022/2023 (MERDYSR, 2024), it is often misinterpreted as multicultural education (People in Peril et al., 2019). Because GE is not an obligatory part of the national education curriculum, it remains unsystematic, and it could be characterised by its *"ad hoc"* nature (Jendeková et al., 2021; Labašová, 2021, as cited in Halászová, 2021) that is largely dependent on the motivated teachers supported by NGDOs. While the reasons why are quite complex, two – perhaps, the most important – shall be pointed out specifically. First, while it is visible that in recent years, MERDYSR has become more active when it comes to the GE agenda, there

1 https://net.jogtar.hu/jogszabaly?docid=A16H1784.KOR&txtreferer=00000001.txt

2 For an English summary see: https://nefe.kormany.hu/download/8/2f/92000/NEFE2025_summary_en.pdf

3 https://eionet.kormany.hu/akadalymentes/download/1/26/71000/NFFT-HUN-web.pdf (updated version for 2025-2036 is in preparation)

4 https://2015-2019.kormany.hu/download/d/2e/d1000/K%C3%B6znevel%C3%A9si%20strat%C3%A9gia.pdf

still exists a confusion over who *"owns"* GE, as demonstrated above (Rankovová & Hodorovská, 2024). As a result, those that receive the funding are the NGDOs that have GE programmes and while they do collaborate with schools and their primary beneficiaries are teachers and/or students, they, as actors, remain outside of the educational system. This hinders the ability to construct more systematic approaches to GE. Connected to that is also the fact that the The Slovak Agency for International Development Cooperation's (SAIDC) allocated budget for GE ranges between 50.000 to 100.000 € per year (GENE, 2021). In comparison to the other Central European countries, Slovakia dedicates much less to GE (e.g., the Czechia dedicates around 550.000 € per year, while in 2021, Austria allocated 5.000.000 € to GE) (GENE, n.d.).

The second reason why GE struggles with further systemisation and institutionalisation is that the pre-service teachers of the pedagogical faculties in Slovakia do not get sufficient training in GE, and this consequently hinders their ability to offer GE perspectives in their teachings. As a result, only those teachers who become personally interested in bringing global perspectives into the classrooms *"stumble"* upon GE.

In practice, GE is not a separate subject, rather, it is a perspective or an approach that can be applied in all classes. In praxis, GE is incorporated into existing subjects such as Civic Education, Ethical Education, History, Geography, Mathematics or Slovak Language.

Since GE is not an obligatory part of the educational process, GE materials and textbooks are not provided by the MERDYSR, and they do not undergo the official textbook review process. In this sense, there are no *"official"* GE materials and textbooks. Instead, the materials with which the teachers in schools work are either their own materials and resources or they use the materials and textbooks that are published by the Slovak NGDOs that deal with GE.

However, these textbooks are not *"official"* per se, they definitely enjoy a special status. The website – www.globalnevzdelavanie.sk – which functions as the repository for these GE materials and textbooks has been stated in the National Strategy for Global Education (2012) as the main platform through which teachers can access GE teaching materials.

Despite these challenges, the new State Educational Program (MERDYSR, 2023a) includes cross-cutting themes aligned with GE principles, which could enhance its presence in schools by 2026/2027. Primary and secondary school teachers are increasingly expected to integrate GE into their teaching explicitly, rather than merely referencing its themes and values indirectly. However, gaps in legislative and organisational frameworks continue to hinder the alignment between policy expectations and teacher preparation, posing a major obstacle to the institutionalisation of GE.

Global Education (GE) in **Poland** was incorporated into the national curriculum in 2008 as part of the educational reform. This was followed by the 2011 Memorandum of Understanding on Strengthening Global Education, signed by the Ministry of Foreign Affairs, Ministry of Education, and Grupa Zagranica, committing stakeholders to expanding and supporting GE. However, no national strategy for GE has been established yet.

Under the Development Cooperation Act (2011), the Ministry of Foreign Affairs coordinates and funds GE, while the Ministry of National Education oversees in-service teacher training. NGOs play a crucial role in promoting and implementing GE, providing teacher training, educational resources, and monitoring activities. Despite these efforts, the 2017 curriculum reform significantly reduced GE content compared to the 2008 curriculum.

State funding for GE has declined sharply, from 2,204,431 PLN in 2019 to 239,603 PLN in 2022. Most school-based GE activities now occur during Global Education Week in November, primarily as short-term NGO-led projects. While some dedicated teachers continue GE initiatives independently, political changes since 2015 have led to its gradual disappearance from schools. However, the change

of government after the 2023 elections has raised hopes for a renewed focus, with curriculum reform planned in two years. One of the first changes was introduced in 2025, when the government replaced Social Studies (*Wiedza o społeczeństwie*) with a new subject, Civic Education, in secondary education, incorporating some elements of GE. Until now, the situation regarding textbooks and GE resources has been similar to that in Slovakia, described above.

Regarding Education for Sustainable Development (ESD), the principle of sustainable development is embedded in Poland's Constitution (Article 5). International frameworks such as Agenda 21 and the UNECE Strategy for ESD emphasise the need for integration into education, yet significant gaps remain. While some sustainability topics appear in the curriculum, concepts like *"sustainable development"* and *"education for sustainability"* are not widely known. Instead, environmental education, focused on protection and eco-friendly behaviours, is more prevalent.

Government initiatives have sought to address these gaps. In 2020, the *„National Environmental Policy 2030"* proposed a Strategic Action Plan for Environmental and Climate Education. In 2021, the Minister for Climate and the Environment established a team to develop 40 lesson scenarios on climate protection, now freely available online. In August 2024, a new consultative body was created to support further developments in environmental education.

In summary, Poland currently has no national regulations explicitly requiring teachers to implement GE or ESD. There are neither dedicated subjects nor cross-curricular pathways. All initiative rests in the hands of the individuals interested and engaged, with the presence of environmental/ecological themes being more noticeable than GE topics.

In **Czechia**, the National Pedagogical Institute (under the Ministry of Education, Youth and Sport) is the body responsible for the curriculum. Some of the transversal themes in the Educational Framework Programme for the elementary education and secondary general education specifically reflect the goals and themes of GE. GE topics and methods are also reflected in intercultural education, environmental education, human rights education and citizenship education.

GE topics can also be found in the following aspects of the Programme: values education, development of reflection and knowledge about technological change, inequalities in people's lives, democracy, participation, governance, citizenship, the development of key competencies such as communication, social skills, problem-solving skills to ensure creative opportunities and activities in the education process. Methodology support for GE is provided by the National Pedagogical Institute. There is also a dedicated GE Portal. An active civil organisation in the area is NaZemi.

In **Hungary**, the regulatory environment supports the development of adaptability and lifelong learning among young people aligning with the principles of GE and ESD by preparing students to navigate the challenges of a rapidly changing world. The Act on Public Education (Act CXC of 2011)[5], the National Curriculum[6], the Higher Education Act (Act CCIV of 2011)[7] and the EMMI Decree on Teacher Training (EMMI Decree 8/2013 (30 January 2013)[8]) all enable the methods and content used in public education to strengthen young people's ability to adapt quickly to our changed world. Adaptation at this level means *„the ability to learn and the importance of learning to learn"* (Könczey, 2014).

The National Curricula have identified environmental education and education for sustainability and environmental awareness as priority areas for development. The 1995 NAT already considered environmental education as a cross-curricular task. In the 2003, 2007, 2012 and 2018 Basic Curricula, education for sustainability is a constant priority (Mónus, 2020, 24). Although all of these documents

5 https://natlex.ilo.org/dyn/natlex2/natlex2/files/download/106832/act_national_education.pdf

6 https://www.oktatas2030.hu/wp-content/uploads/2020/02/nat2020-5-2020.-korm.-rendelet.pdf (In Hungarian)

7 https://www.mab.hu/wp-content/uploads/Nftv_angol_2Sept2016_EMMI-forditas.pdf

8 https://net.jogtar.hu/jogszabaly?docid=a1300008.emm (In Hungarian)

define environmental education as a cross-curricular competence, it is mostly science teachers who are involved in such activities and teaching in educational institutions (Mónus, 2020).

ESD in public education, rooted in environmental education, is well-established. The Eco-school program, launched in 2004, promotes sustainability and environmental awareness, reaching nearly 1.400 schools by 2023. Around 100 Forest Schools provide interactive field education on ecology, forestry, and wildlife management, operating under a mix of subsidies and market-based models. The school-garden network further supports environmental education. In 2016 a system of sustainability weeks available for every school was established, with an ever-expanding range of freely available methodological guides and programmes for all school-ages, and professional support for teachers, offering a wide range of opportunities for involvement. The New National Core Curriculum (NAT 2020)[9] integrates the concept and idea of sustainability in all subjects, and defines forms of conscious use and renewal skills, but teachers still have limited options for expanding the range of subjects (NAT, 2020).

In the area of GE, the new National Core Curriculum also stipulates that the basic learning and education objective is to develop national and European identity, patriotism and active citizenship and democracy. Developing knowledge of Europe and skills related to European awareness is embedded in the traditional curriculum. In practice, 30 Hungarian secondary schools have joined the GLOBE (Global Learning and Observations to Benefit the Environment) Programme, conducting environmental observations, since 1999 and over 40 schools participate in UNESCO's Associated Schools Network, fostering innovative education, peer learning, and awareness of global issues, sustainability, human rights, and democracy. In addition, numerous schools across the Visegrad countries collaborate with foreign educational institutions through the European Erasmus+ Cooperation Among Organisations and Institutions. Additionally, the eTwinning program fosters online cooperation between schools.

Despite the regulatory background and networking initiatives, research shows that meanwhile there are quite many teachers and NGOs in all levels of education who carry out outstanding work in GE and there are plenty of materials and tools available (globnev.hu), initiatives mostly remain isolated, non-systemic and fragmented in scope, dependent on the dedication of individual teachers and leaders of institutions (Balogh, 2021). This situation has not changed significantly even with the adoption of the new national curriculum in 2020.

1.3.3. GE/ESD in Initial Teacher Education

Global Education (GE) in teacher education in **Slovakia** faces several paradoxes. While strategic documents advocate for GE integration in elementary and high schools (e.g., National Strategy for Global Education, 2012; Guide to the School Year 2023/2024 [MERDYSR, 2023b]), many teachers remain unfamiliar with it or feel unprepared to teach it (People in Peril et al., 2019). Although legislation (e.g., Act on Teaching and Professional Staff, 2019) allows educators to propose improvements and select teaching methods, no systematic enforcement ensures GE integration. Consequently, professional development relies on ad hoc training primarily provided by NGOs rather than a structured approach within teacher education programs (Jančovič & Penfold, 2017; Jendeková et al., 2021).

A second paradox is that future teachers do not feel adequately prepared to incorporate GE, particularly for complex topics such as extremism, racism, or migration. Many prefer to focus on less controversial subjects like environmental issues and human rights (Labašová, 2019). The absence of explicit GE-related requirements in teacher education programs means that future teachers are not exposed to key themes they will later need to address in their careers (Jendeková et al., 2021).

9 Government Decree 5/2020. (I. 31.) amending Government Decree No 110/2012 (VI. 4.) on the publication, introduction and application of the National Core Curriculum

A third paradox concerns university educators, who are positioned to prepare future teachers in GE but lack the necessary means and resources. While GE is present in select universities – such as University of Trnava, Constantine Philosopher University in Nitra, Slovak Agricultural University in Nitra, Comenius University in Bratislava, Matej Bel University in Banská Bystrica, Pan-European University in Bratislava, Economic University in Bratislava, Technical University in Zvolen or St. Elizabeth University of Health and Social Work in Bratislava – they themselves note that it is mostly a marginal activity (Brozmanová Gregorová et al., 2019). Research in GE is inconsistent, often dependent on external funding from research agencies. This is further confirmed by Rankovová & Hodorovská (2022; 2024) who note that when it comes to publications related to GE topics, there is not a steadily growing tendency to publish about these topics. Moreover, unless they are funded by the grant and project funding schemes, research related to GE dwindles.

Additionally, most teacher training materials focus on primary and secondary education, leaving university educators without structured professional development in GE (Jančovič & Penfold, 2017; Jendeková et al., 2022). Those who engage with GE often do so out of personal motivation or through NGO collaborations.

The fragmentation of GE in teacher education is further exacerbated by its concentration in faculties related to economics or environmental sciences rather than being approached holistically (Brozmanová Gregorová et al., 2018). This may cause a further fragmentation of GE in teacher education as it is focused only on specific topics and it is not perceived as a holistic and complex approach to education, or it can result in only certain faculties possessing the expertise while others will miss it. Moreover, despite various GE research projects, teaching materials remain scattered and inaccessible due to the absence of a centralised repository (Brozmanová Gregorová et al., 2019). While NGOs provide materials through the platform www.globalnevzdelavanie.sk, university-produced resources are often underutilised or forgotten after projects end.

Additionally, most GE-related initiatives are conducted by non-pedagogical faculties, limiting access for education faculties (Brozmanová Gregorová et al., 2019). The lack of institutional support further hinders progress, as few initiatives facilitate knowledge exchange among university educators to promote GE integration in teacher education (Jančovič & Penfold, 2017).

In **Poland**, it is very difficult to assess the extent and scope of the GE's and ESD's presence in teacher education. Higher education institutions (HEIs) which are responsible for the education of prospective teachers, have considerable autonomy in developing their curricula. Apart from the obligatory implementation of teacher education standards, they can decide themselves to broaden or deepen the educational offerings, such as GE or ESD. However, drawing on the Eurydice report (European Commission / EACEA / Eurydice, 2024) it can be said that:

(a) sustainability-related competencies are not included in the teacher competence framework/ professional standards (Minister of Science and Higher Education, 2019);

(b) sustainability learning objectives are almost absent in regulations and guidelines for ITE programmes - they refer only to the understanding of sustainability-related issues and concepts and apply only to teachers of certain subjects (natural science, biology and geography);

(c) sustainability education is limited in regulations and schemes for continuous professional teacher development (CPD) and only partially addresses one of the four dimensions of sustainability education investigated, that is *"innovative and engaging methodologies to deliver sustainability education"* (European Commission / EACEA / Eurydice, 2024, p. 58). Partially, because it mainly refers to outdoor learning and learning by doing. However, it is important to note that Poland has a decentralised teacher training system, and even in the absence of sustainability education in CPD regulations, it may be included in the offerings of various teacher training centres;

(d) sustainability leadership is absent in regulations and schemes for CPD;

(e) teachers can receive the following support: the provision of teaching materials, resources and guidelines; the existence of dedicated networks and communities of practice for sustainability; and the existence of units of expertise where teachers can receive additional support.

Regarding GE, there is no similar report on its presence in teacher education in recent years. However, drawing on some previous research it can be assumed that it is even more marginalised in teacher education than ESD (Kuleta-Hulboj, Kielak, 2021). GE is only present in teacher education universities when there are individuals who are particularly interested in the issue and committed to incorporating it into their teaching practice.

In **Czechia**, GE innovation courses (introduced in 2014-2015) are part of the curricula for teacher education in two pedagogical faculties offering the courses *"Cross-cutting issue – education to global responsibility"* and *"Global Development Education"* at Charles University, Prague and the University of South Bohemia, České Budějovice, respectively and two Science faculties at Charles University, Prague and Jan Evangelista Purkyně University, Ustí nad Labem with course offer *"Global Systems"* and *"Environmental Studies"*, respectively. Methodology support for GDE is provided by the National Pedagogical Institute. A GDE Portal provides a collection of GDE resources.

In **Hungary**, initial teacher education (ITE) has currently undergone significant reforms. New pathways have been introduced, making it much easier to obtain a teaching qualification (Government, 2024). From now on, all higher education institutions providing ITE can award a primary school teacher qualification to kindergarten teachers after 2 years of further study, and those with a primary school qualification can obtain a secondary school teacher qualification in a specific subject. In addition, it has become possible for candidates with related prior qualifications to obtain a secondary teacher qualification after two, three or four semesters of Master's studies.

A major labour law reform, Act LII of 2023, redefined the employment status of teachers in non-church institutions, replacing their civil servant status with a new category as of January 1, 2024. The law establishes a five-tier career structure: trainee teacher, teacher I, teacher II, master teacher, and research teacher, each with designated salary levels.

The years 2024-2025 again brought significant changes in the field of teacher training. Several teacher training institutions served as a base for the development of new teacher training models[10]. One of the most striking changes in the new model curriculum for teacher training is that practical school subjects are present from the first semester onwards and are introduced throughout the training process with increasingly complex tasks and a longer duration per semester (K. Nagy, et al. 2024).

Also, the government launched a new ITE programme at the National University of Public Service (NKE) as of 2025/2026 (Publication Office, 2024) Education and Training Monitor, 2024). The NKE is governed by a specific law – other than the Act on Higher Education – which has now been amended to allow the university to deviate freely from the laws and regulations governing ITE. The ITE programmes at the NKE will not be required to undergo pre-accreditation, and the Education Authority must register the start of the programmes without first seeking the opinion of the Hungarian Higher Education Accreditation Committee. The consequences of all these changes to ESD/GE, are yet to be seen.

As regards the presence of output requirements of teacher education, the ESD competencies of teachers became part of the e-portfolios of all school educators, school leaders and teaching staff in 2018 and have appeared as an element of the training programme and the output criteria of pre-service teachers since 2021. It is worth noting that the expectation of ESD competencies in the

10 On 24 January 2025, the Hungarian Rectors' Conference and the Association of Teacher Trainers held a joint event to present the so-called new teacher training models in the pilot phase and to establish the professional cooperation associated with them

certification system for in-service teachers became effective in 2018[11].This way, ESD became part of initial teacher education at all higher institutions engaging in teacher training in the country.

The analysis of the ministerial regulations[12] on training and outcome requirements of Hungarian teacher education revealed that certain topics, aspects and competencies related to GE and ESD are included to varying degrees in the requirements for different teacher education programs and specialisations. They in no way add up to be a horizontal principle or content, and the fact that these aspects are included in the legislation does not in itself ensure that they are applied in the actual training of teachers. Furthermore, certain aspects, such as gender equality or the ethical, legal and ecological issues of contraception, are almost entirely absent from the requirements (Balogh, 2021).

On the practice side, a recent development in ITE is the creation of the so-called *"Z-major"*. To tackle the shortage of qualified science teachers in public education, a new five-year undergraduate degree programme - a complex Environmental Sciences major, tailored for Generation Z, was launched in 2022 by a national consortium of six Hungarian universities, five of which are participants of our research. Based on international models and the first of its kind in Europe, the aim of the joint master's programme is to learn about and understand ecological sustainability and the tangible nature through practice-oriented, problem-solving techniques. The degree is teacher-qualified, so graduates in 2030 will be qualified to teach in the public education sector. At the same time, the professional communication skills and problem-focused, innovative thinking acquired through this degree will also prepare graduates for up-and-coming professions of the 21st century. The versatility of the degree means that students with a background not only in science but also in humanities, have a good chance of graduating.

Beyond initial teacher education, training courses are developed and offered in relatively good numbers to in-service teachers around topics of ESD. NGOs develop trainings with a specific focus on GE as well but the demand on the side of teachers is still limited (Balogh, 2021).

2. RESULTS

2.1. The interviewees' understanding of GE and ESD

The conceptualisations and understandings of global education (GE) and education for sustainable development (ESD) are far from unequivocal; they have grown increasingly complex and are shaped by specific cultural, political, and economic contexts. The literature abounds with numerous typologies and frameworks that attempt to delineate and organise these categories. Notable examples include the widely cited works by Huckle (2006), Oxley and Morris (2013), Andreotti (2006; 2011), and the meta-analysis by Pashby et al. (2020). Conducting the international research project, we aimed, among other things, to explore which concepts respondents are familiar with, which are closest to them, and how they understand GE and ESD. We also aimed to investigate what consensual elements appear in the interpretations of ESD and GE and whether there are country-specific differences.

At first, as an international team we had to review our individual or country-specific understandings and work together to draft *"a discrepancy report"*. As a result, the Dublin Declaration's (GENE, 2022) understanding of global education was adopted as a base for the research.

11 Government Decree No 326/2013 (VIII. 30.) on the implementation of Act XXXIII of 1992 on the promotion system of teachers and the status of public servants in public education institutions.

12 EMMI Decree 8/2013 (I. 30.) on the common requirements for teacher preparation and on the training and outcome requirements for certain teacher specialisations in force until 29 December 2021. EMMI Decree No. 18/2016 (VIII. 5.) amending EMMI Decree No. 8/2013 (I. 30.) on the training and outcome requirements for higher education vocational training, bachelor's and master's programmes, and on the common requirements for teacher preparation and the training and outcome requirements for certain teacher specialisations, in force until 29 December 2021.

According to it,

> *Global Education is education that enables people to reflect critically on the world and their place in it; to open their eyes, hearts and minds to the reality of the world at local and global level. It empowers people to understand, imagine, hope and act to bring about a world of social and climate justice, peace, solidarity, equity and equality, planetary sustainability, and international understanding. It involves respect for human rights and diversity, inclusion, and a decent life for all, now and into the future* (GENE, 2022, p. 3).

And further:

> *Global Education is an intersectional umbrella term which encompasses a variety of related terms that are used at national and international level, including, inter alia: Anti-Racist Education, Development Education, Diversity and Inclusion Education, Education for Gender Equality, Education for Global Citizenship and International Solidarity, Education for Sustainable Development, Global Citizenship Education, Global Development Education, Global Learning, Global Youth Work, Human Rights Education, Intercultural Education, Learning for Environmental Sustainability, Peace Education* (p. 13).

However, during data collection it became evident that the interviewees' approaches and conceptualisations are more multifaceted and diverse than we had expected. It was not possible to use GE as an umbrella term without compromising the richness of the data collected. That is why we decided to describe GE and ESD somehow separately.

2.1.1. Understanding of GE and ESD: conceptual uncertainty, divergences and convergences

As it was described in the previous chapter, there are noticeable differences regarding the terminology and approaches between the Visegrad countries. The differences in national terminology, however, only partially explain the variations between the interpretations given by the respondents. For example, although in Slovakia GE is understood as an umbrella term and better known than ESD, one respondent declared that they primarily use the term *"ESD"*, while another stated that, conversely, they use only the term *"GE"*.

The interviews revealed complex approaches to the categories examined and showed that all the interviewees faced terminology ambiguities and interpretive challenges. All of them were more or less familiar with both concepts, although they had differing term preferences. In general, the term *"global education"* (GE) appeared less frequently in the interviews than *"education for sustainable development"* (ESD), with the exception of Slovakia, where GE is used as an umbrella term. The Slovak respondents were more likely to use *"global education"* and *"sustainable development goals"* concepts than the term *"education for sustainable development".* However, they rarely use these terms implicitly when preparing pre-service teachers. They mostly refer to the topics of sustainability and green topics.

Most Hungarian respondents expressed uncertainty regarding GE, offering no immediate or definitive responses. This ambiguity made it particularly interesting to observe the diverse ways in which they individually approached the issue. They stated that GE is difficult to interpret and in defining GE some of them referred to links with globalisation processes. For example: *"I think GE is where we need to understand that we can do something globally even if we act locally. Know that every decision you make is actually embedded in another decision, and understand the mechanisms of consumer society, globalization, and a whole lot more"* (T13_HU). As it was said before, in Hungary, ESD is far more popular than GE which has only recently appeared in public discourse and rather under the name of *"global responsibility education": "There is a kind of dialogue here about sustainability, but we don't talk about global education that much"* (H13_HU).

The Polish respondents were less unanimous in their responses. Most favoured ESD because it was closer to their interests, but some chose to use the term GE, and one interviewee preferred *"climate (or environmental) education".* Finally, in Czechia, most interviewees also used the term *"ESD"*; only one person preferred *"GE"*.

In defining GE the interviewees used expressions such as *"education that emphasises a context that is international"* (T9_CZ), *"it is a social approach that looks beyond the school" (H22_HU), "it focuses on injustices in the world"* (T5_PL), *"education about learning how to be independent members of the society"* (H3_SK); *"an ethic of intercultural dialogue"* (H9_CZ). They usually pointed out its two distinctive features. One was related to the contemporary interconnectedness and interdependencies in the world, not only as interconnections of cultural, environmental, economic, social, political, and technological systems, but also as the mutual relationships and dependencies among people around the globe. GE was understood as an education that aims to develop their understanding.

> *As far as GE is concerned, [...] it means connecting topics that basically relate to environmental, political and cultural topics, or modern topics, maybe also in connection with artificial intelligence, ethics [...] and elements for [...] understanding that e.g. when I buy this chocolate that I have on the table, there are some processes and people behind it, etc. In fact, many things are related in a certain way. And our behavior as the final consumer, the final individual who solves something, basically affects the behavior and lives of many other people in a global sense*. (T4_SK)

Another interviewee, from Czechia, summarised: *"I see GE in terms of sustainability. The interconnectedness of everything is nowadays total."* (H8_CZ)

The second feature of GE indicated by the respondents was the focus on the political, social and cultural dimension of people's lives, broader structures and relations, as opposed to ESD, which, according to the respondents, focuses primarily on the environmental dimension:

> *Global education, in my opinion, covers different types of problems related to crises which are actually accompanying us non-stop at the moment, e.g. the migration crisis, the climate crisis, digital exclusion, related to intercultural or open treatment of other cultures - all of this falls within GE.* (H5_PL)

And:

> *It [sustainable development] is trying to achieve a kind of harmonious growth in which economic growth is one leg and environmental awareness, conscious consumption, transport, architecture, the creation of the built environment is in a kind of harmony with the environment.* (T23_HU)

One interviewee holded a particularly broad, holistic understanding of GE, encompassing also ESD, intercultural education and other *"adjectival educations"* with related thematic priorities. For this person, GE

> *is primarily about activating a perspective of conscious existence in the world and being responsible in that world. [...] it is about full awareness. [...] it is a very holistic approach. Surely, this is not some final definition, but I understand it this way: preparing for a conscious and critical understanding, especially regarding the skills of analyzing and making choices... [Conscious being in the world] means that I know who I am in biological, social, and cultural terms. [...] [it means that] I consciously shape the relationship between nature and culture, and this is understood broadly. I am aware that I am an element of these nature-culture relations and that I consciously shape them and approach them with intention. So, by experiencing biological life and cultural life, I understand what I can take from it and what I can give.* (T7_PL)

Regarding ESD, the interviewees' interpretations varied along a spectrum—from more anthropocentric, *„softer"* approaches to radical, ecocentric perspectives. The prevalent one was referring to the 3 pillars of sustainable development: environmental, social and economic sustainability. This understanding could be labelled as "soft"/anthropocentric approach (Khoo & Jørgensen, 2021).

> *Sustainable development has a definition. I don't think we need to go into that. So somehow it [the university] sticks to that definition, it has those 3 pillars that we follow, because without that it is not sustainable. That is, economic, environmental and social.* (H11_CZ)

Some interviewees defined ESD by referring to responsibility (to live responsibly on Earth) and intergenerational justice (towards future generations). This understanding can be exemplified by the following quote: *"By sustainability, I mean consumption habits and an attitude towards the world that takes into account the life opportunities of the future generation."* (T13_HU)

Two Polish interviewees adhered to far more radical, critical interpretation and preferred using the term *"environmental education"* (in the meaning close to deep ecology), *"climate education"* or *"symbiotic education"*.

> *I am advocating the use of the terms ‚climate education' and ‚environmental education', because these are our main challenges today - what to do to ‚control the climate'. What to do to stop further degradation of the environment.* (T5_PL)

Another respondent, from Hungary, overtly criticised the concept of SD. According to this person, sustainability has become an overused and misapplied concept, yet its widespread presence makes it unavoidable. They argue that the adoption of sustainability discourse can inadvertently mask deeper issues, with its trendy status acting as a substitute for genuine social change.

> *We are legitimizing a concept that, in this form, makes no sense whatsoever. Because development itself in its present form is not sustainable and everybody knows that.* (T24_HU)

Despite the differences in the responses between the interviewees, we should also point out the similarities in their interpretations. Firstly, GE was rather commonly understood as a broader term than ESD:

> *Global education is a broader concept. So there are many other things involved. International relations, [...] knowledge of the different ways societies work. This is also a UNESCO objective. Or education as such, and not only in the Hungarian context, but also internationally, this is also part of GE.* (T24_HU)

> *As far as ESD is concerned, we also understood it [...] not as broadly as GE, but rather precisely related to the climate and to not harming the planet [...].* (H5_PL)

Secondly, although the interviewees were aware of the environmental, social and economic dimensions of sustainable development, environmental sustainability was given greater emphasis in the interviews:

> *Sustainability will be an important part not only of the university's educational structure but also of its day-to-day operations, for example through energy efficiency improvements.* (H21_HU)

Thirdly, as it was signalised above, the interviewees rather rarely referred to the /more radical/ ecocentric approaches to GE or ESD, the *"soft"/anthropocentric* ones dominated. Some examples of the *"soft"* approaches to ESD are provided below:

> *I mean even the smallest actions, taking paper bags for shopping or recycling; raising awareness to produce things yourself (not buy). I also pass this approach on to my students. I try to make*

> *people aware that, as well as talking about environmental awareness, we can also combine it with cost-effectiveness.* (T13_HU)

> *Our task is to prepare scientists for this (how to implement the SD theme in research). We have had several calls from scientists saying that they don't know what to write because their field is not involved, etc. We are now preparing this (consultancy). Make it not just about what they enjoy, but also make it beneficial in terms of SD. I think it can be done with everything, they just need to look at it a little differently than they have been used to. And really find that connection there. Our goal is to educate scientists on how to do that, how to make the connections without having to do something they don't want to do. Let them do the science any way they want to do it, but they're still going to deliver some benefit in terms of SD.* (H11_CZ)

The exceptions include some respondents from Slovakia who stressed that critical thinking skills should be developed through a complex process of learning how to listen to others, being open-minded and understanding the multiplicity of points of view without necessarily upholding only of them as superior or the right one, learning how to be self-critical and self-reflective, inspecting one's own position in the world, learning to look at the world through the eyes of others (H3_SK; T1_SK; T4_SK) and learning how to create safe space for and empathise with others so that all opinions can be expressed with no fear of judgment (T3_SK). Such an approach to GE mirrors the seminal GE methodology *"Learning through Other Eyes"* developed by Andreotti and de Souza (2008). At the same time, some respondents highlighted that GE must teach how to express one's own opinion independently, without necessarily reproducing the opinions of others (H3_SK; T4_SK).

Regarding the critical approach to ESD, we need to mention about two academic teachers from Poland, who stood out for their radical, critical stance. One teaches students "how to deconstruct anthropocentrism and human dominance, how to explore different themes and unlearn certain ways of thinking" (T6_PL), which clearly reveals a critical understanding of ESD; and the second explicitly admitted that both, GE and ESD, are too anthropocentric for them, and in their opinion we must feel responsible not only for human beings but also for - and towards - non-human beings:

> *ESD is a very anthropocentric concept. It pays attention mainly to the human being; well, and then there is that word 'development', that we are supposed to develop. And we are already developed beyond all reason; we have already crossed 6 out of 9 planetary boundaries and we cannot develop any more, because we simply do not have the capacity to do so any more, we have destroyed this planet to an enormous extent. [...] we must develop spiritually, we must [...] widen our circle of responsibility, not only to our species, which is the focus of SD, but also to other beings who live here with us, on whom we depend.* (T5_PL)

2.1.2. Understanding of the relationships between GE & ESD

Regarding the links and interfaces between GE and ESD, the interviewees emphasised that while these two concepts are distinct, they are highly compatible, overlapping, and interlinked. Both share similar goals, particularly in their holistic approach to education (H2_SK). Respondents consistently highlighted the close relationship between GE and ESD, agreeing that both approaches are problem-, future-, and value-oriented:

> I*n fact, GE and ESD, as far as I know, are very closely related and even partially overlap, because both types of education—well, rather, both areas of education—refer to a global scale. ESD must encompass the global scale, while GE must also address issues of sustainable development. So they have a shared part. Both areas of education are similar in that, in addition to knowledge and skills, besides gaining knowledge and skills, the third area—shaping attitudes—is very important. This refers to what is often called the social-emotional sphere, right? Shaping attitudes, habits, and applying knowledge to specific actions. Therefore, ESD is education for a better future, and GE is also education for a better future.* (H7_PL)

All respondents acknowledged that the two concepts are interrelated and overlap to some extent.

> *Because [...] environmental issues are linked to social issues, so the issue of certain environmental inequalities, of environmental exploitation, is also linked to social issues, to poverty. In fact, it is impossible to separate these two topics, they are intertwined. It is difficult to talk only about climate change, anthropogenic climate change, without accentuating the fate of other people, because a subject such as climate migration, which we should already be talking about, shows that these two issues are interconnected.* (T6_PL)

This connection was primarily understood through their shared objectives. For example, many interviewees noted that the goals of GE and ESD intersect, forming a common ground between them.

Additionally, an inclusive relationship was observed, with GE often perceived as the broader concept, encompassing ESD as one of its dimensions. In this perspective, environmental awareness is seen as one of the aspects of GE. Some respondents also highlighted that while both GE and ESD address global challenges, individual responsibility is more strongly emphasised in education for sustainable development:

> *there is a large overlap between the two notions, I would somehow make a difference between the two, that the importance of individual responsibility is perhaps to a different extent reflected in the two trends. So in GE, it is not so much.* (H12_HU)

Rather than being confined to a single subject, GE and ESD were portrayed as inter- or transdisciplinary approaches that connect various disciplines and perspectives. Each serves as an umbrella concept, encompassing multiple dimensions and complexities.

Beyond the interdisciplinary nature of GE and ESD, respondents also underscored the importance of a holistic and systemic approach. They emphasised also the need to integrate the Sustainable Development Goals (SDGs) into teacher education programs using a cross-curricular structure.

One Slovak interviewee described the potential and essence of GE and ESD as the educational approaches that reshape the traditional understanding of education in Slovakia, responding more effectively to contemporary global challenges. They shift the focus from rote knowledge to critical thinking and opinion formation, and from isolated subjects to cross-cutting themes (T3_SK).

Many respondents, when defining GE and ESD, emphasised the competencies these approaches seek to develop or support. Among these, the need to foster critical thinking was mentioned most frequently.

The respondents were also unanimous in stating that GE and ESD should go beyond simply providing knowledge; instead, they should prioritise competence development. This includes skills such as critical thinking, complex thinking, understanding relationships, and responsible decision-making, as well as attitudes of openness, respect for others, and the ability to recognise, active listening, understand and appreciate different perspectives. Additionally, respondents highlighted the importance of widening the circles of responsibility. These aspects will be further explored in the following section of the report.

When asked about GE and ESD differences, interviewees often stressed their distinct focus, noting GE's stronger social orientation and ESD's emphasis on the environment.

> I think GE is important, it's relevant, but... Well [...] it's also too anthropocentric for me. It's like it focuses too much on humans and not enough on nature, the lives of other species. [...] GE focuses more on people, on injustice, and that's right, only that it should be complemented by climate education, environmental education, or another term: symbiotic education. (T5_PL)

2.1.3. Significance of GE/ESD in education, particularly teacher education

All interviewees emphasised the importance of incorporating GE and ESD into initial teacher education and continuous professional development, even if they do not actively teach GE or ESD themselves. In their opinion, these are very important perspectives on viewing the world, thanks to which we can see and understand more.

> For me, it is central; it's like a window through which we view the world. Olga Tokarczuk [Polish Nobel laureate in Literature] also spoke about this, saying that ecology should be that window through which we see the world, with all other disciplines filling in their parts to create a coherent vision of the world. (T6_PL)

In some opinions, GE and ESD are the educational approaches reflecting the needs of the contemporary world better than the traditional one, e.g., they shift focus from knowledge to critical thinking and opinion-making; from traditional subjects to cross-cutting, interdisciplinary themes. They also serve as a way to understand the position of a human being within a globalised world. They support development of multicultural competencies, sensitivity, and understanding of cultural differences. That is why they are crucial.

The following quote highlights the decisiveness of the value-based approach and also presents a kind of socially critical perspective.

> *There is improvement in theory. I think the current generations really hear from kindergarten how important this is, and obviously this leaves an impression on them. But at the same time, I see that individualism and leaving the comfort zone, or staying in the comfort zone, overrides everything else. I think the situation is getting worse. The situation is getting worse and basically behind the deterioration of the situation is not necessarily the lack of environmentally conscious thinking, but the reversal of the priority list. So the ego is in front, and everything else comes after. And then any environmental aspect comes into play, if it doesn't hurt the ego or the comfort zone. And it obviously will. So environmental awareness is needed precisely because the way we live now is not sustainable*. (T22_HU)

2.2. Overview of Integration of ESD/GE in Teacher Education

2.2.1. Current practices

In the following section the current state-of-play of ESD and GE in pre-service teacher education in the twelve higher education institutions will be presented, through the lenses of teacher educators and those in management positions, mirroring their views, perceptions and reported practices.

Most initiatives directly related to GE or ESD are developed and introduced through a bottom-up approach. They emerge from the needs, aspirations, and efforts of dedicated individuals, such as our interviewees, and are primarily driven by their determination.

These initiatives often manifest as individual course development efforts. Academic teachers integrate ESD/GE into their course content based on personal interest or through a gradual expansion of the topic within a course. This evolution is exemplified in the following quote: *"it [a pedagogy course] is changing in the direction that now the whole subject is subordinated to the idea of sustainability."* (H4_PL)

At the institutional level the participants mentioned structural changes that facilitate the integration of sustainability into the teacher training curricula. The two universities in Czechia exemplify distinct approaches. At UJEP, an eco-centre is being developed to integrate sustainability topics into the education of future teachers. In addition, they place great emphasis on outdoor learning opportunities.

Meanwhile, at UPOL, a sustainability coordinator position has been established to provide expertise across disciplines, ensuring sustainability is embedded in teaching, learning and research. This role extends beyond teacher education, encompassing all academic disciplines within the university.

The two Slovak universities are adopting active learning methodologies in their teacher training curricula. At UNIBA, fostering collaboration skills and cultivating a growth mindset have been recognised as essential for student success while addressing the real needs of local communities. In response, an elective course called *Curious Learning* was introduced within the teacher education program in cooperation with local NGOs. This course uses project-based learning, design thinking, and STEM learning environments to enhance student engagement and learning outcomes.

The other Slovakian university, Matej Bel University in Banská Bystrica, has been implementing *Service Learning* for over a decade. This teaching and learning strategy combines theoretical education with meaningful, practical community service, fostering both learning and reflection. The added value of *Service Learning* lies in its dual impact: it supports individual development while enabling students to assist others in their natural environment through structured activities. This approach addresses the needs of education (schools), practice (organisations), and self-development (students). It offers a planned and organised student experience through service that meets authentic community needs, encourages active student leadership, establishes clear links between service and educational goals, integrates reflective practices, and nurtures students' civic responsibility.

In Poland, a university-wide mandatory ESD course was successfully introduced at the University of Silesia (US) for all students, including future teachers. Following years of bottom-up advocacy, the *University Council for the Climate-Environmental Crisis* was established in 2024. Additionally, an interdisciplinary centre was created, playing a crucial role not only in research but also in advancing ESD, climate education, and the concept of global responsibility in teacher training. Thanks to the centre's efforts, climate and environmental education was introduced in grade 7 across all schools in the city, reinforcing the integration of sustainability into the broader educational framework.

In Hungary, at the University of Nyíregyháza, sustainability has been embedded into teacher education through a dedicated stand-alone course, ensuring that all teacher education students engage with sustainability topics as part of their curriculum. In addition, there is an eco-university working group, including participants from each institution of the university, and the university has a regional leading role in the research and in the practical applications of equality related social issues.

Also in Hungary, a notable example of inter-institutional cooperation is the Sustainability Platform of Hungarian Universities, established in 2022 at the initiative of the University of Pécs, the platform currently includes sixteen member institutions. The alliance aims to facilitate the exchange of best practices in sustainability, organise regular joint initiatives, and foster deeper collaboration to advance sustainability efforts. Since its inception, members have actively shared best practices at numerous events[13] and launched collaborative actions, leveraging student activism to drive change. A significant milestone in the academic year 2023-2024 was the introduction of a unique online elective course, *„Introduction to the Sustainable Development Goals",* delivered by lecturers from eleven participating Hungarian universities accessible to all students of the participating universities. Another important, top-down initiative of the University of Pécs is the Green University Program. The University's sustainability programme is coordinated by the Green University Programme Office, established in 2016, which has been documenting progress in sustainability reports since 2017.

One main focus of the organisation is to involve the communities concerned, in particular university citizens, in the development of a sustainable campus. The mission of the Green University Program, besides working for a sustainable campus operation and attitude forming, is to increase the number of courses and research in sustainability, including teacher education.

13 Some of the Platform's professional events in 2023: „Sustainability Best Practices in Higher Education in Hungary" workshop 24.01.2023: Corvinus University of Budapest; HOPE Conference, 08.05.2023: University of Pannonia, Veszprém; „Results and Experiences in the Process of Making Universities Sustainable" conference 29.09.2023: Budapest University of Technology.

Other institutional efforts include those at the Eszterházy Károly Catholic University in Hungary, where the university recently updated its Sustainability Strategy, subsequently establishing the University Sustainability Working Group. This group is tasked with implementing the strategy and ensuring its practical application at the university level. The Faculty of Natural Sciences and the Faculty of Education drive sustainability education, offering programs in environmental science, geography, and climate change education.

A new master's program, *„Z-major"*, integrates interdisciplinary environmental science, experiential learning, and teacher training. The Z-major is offered by several of the investigated universities (DE, NYE, SZTE, PTE, and EKKE), although the number of applicants remains relatively low.

At the doctoral level, a PhD module of the Doctoral School of Education at EKKE focuses on environmental education and pedagogy, having an effect on both pre-service teacher training and in-service teachers. The university also promotes sustainability through workshops, lectures, and the forthcoming *„Green Diploma Program",* engaging students across disciplines, including pre-service teachers.

Beyond institutional frameworks, grassroots student initiatives can serve as powerful drivers of change. These bottom-up movements, while not exclusive to student teachers, exert considerable influence across university communities. These initiatives are nonetheless very rare. In our sample we can mention the Sustainable Palacký student group at Palacký University in Olomouc, Czechia and the Green University label adopted in the strategic documents of the university that is being actively pursued and Green Ambassadors at Matej Bel University in Banská Bystrica, Slovakia.

The Sustainable Palacký group, in particular, stands out due to the university's progressive leadership, which actively supports and integrates student-led sustainability efforts. This collaborative approach has significantly contributed to the success of numerous sustainability projects, demonstrating the impact of institutional backing on grassroots initiatives. The Sustainable Palacký group is especially successful, owing to the progressive leadership of the university that sees great interest and builds on their initiatives, thus contributing to the success of many projects.

Beyond these initiatives, EU-funded international projects play a crucial role as external drivers of ESD and GE in most universities.

2.2.2. Topics, competencies considered important

In the following section, we present the topics and competencies deemed essential for effective and meaningful ESD/GE, as perceived by the respondents.

While the interviewees agreed that competence development is a fundamental aspect of teacher education in general, they highlighted several competencies that are either essential or should receive greater emphasis in ESD/GE.

The most frequently mentioned competence was **critical thinking** as reflected in the following quote:

> *We shouldn't lead students toward adopting a particular worldview. Instead, we should teach them to analyse information critically so that they can form their own perspectives—and support them with valid arguments grounded in scientific knowledge. It's not about ideology or selective fact-picking. This is a pressing issue today, in the post-truth era, where skepticism and disregard for science are prevalent. The same applies to the topic of sustainable development.* (H3_CZ)

Closely related to critical thinking, respondents also emphasised **independent thinking, autonomy, and the ability to find and evaluate reliable and authentic information**:

> *Graduates should develop a critical understanding of these topics, enabling them to differentiate between credible and non-credible sources. They should also be able to critically assess arguments for and against policies.* (H10_CZ)

An emerging theme in the analysis was the **acknowledgment of emotions** in education—both in fostering an emotional connection to nature and in helping younger generations manage their emotions in response to global crises. The importance of **emotional learning** was also recognised by some participants. Affective and emotional responses to the climate crisis are increasingly seen as powerful drivers of climate action. Given the growing significance of emotions in the context of the climate emergency, the concept of **climate emotions (or, more broadly, eco-emotions)** has emerged in academic literature (Ágoston et al., 2022) that resonates with the perception of one interviewee:

> *Phenomena such as climate depression and solastalgia leave teachers struggling with how to keep young activists engaged without burnout. They experience a sense of loss—witnessing, for example, the largest fish extinction in the Oder right before their eyes. This has a profound impact on young people. Schools need to be spaces where these issues are discussed. After all, how much can be said on the streets or outside academic settings? That is precisely what schools are for.* (T6_PL)

On the other hand, another educator believes more in the power of shocking, to arouse students to perceive and experience the problems.

> *I am the man, who is the shocker. So I believe that this is what the twenty-first century is all about. Shock therapy, but only if you give solutions. You have to shock the students, so that's what I believe in.* (T23_HU)

In connection with emotional learning and emotional coping, the social emotional competencies, including empathy was also highlighted: *"Empathy plays a crucial role in this process".* (H2_SK)

Values thinking is an important competence recognised by the growing number of literature on ESD competence frameworks and it is mirrored in the thinking of our respondents as well. Values thinking refers to the ability to critically reflect on and apply sustainability norms, principles, and goals in addressing sustainability challenges. This competence is regarded as a key driver of transformative change toward a sustainable future. It is traditionally nurtured within disciplines in the social sciences and humanities, including philosophy, political science, sociology, and psychology. The respondents from these disciplinary backgrounds put emphasis on them as exemplified by the following quote:

> *I say to many people that we are still teaching only knowledge, that we are still working only with the students to learn knowledge, but try to think that the school environment is there to go into emotions, attitudes, values as well, that's very important for me with global topics especially.* (H2_SK)

Another respondent (H14_HU) also noted the importance of preparing colleagues, who are not teacher educators themselves but teach disciplinary subjects for student teachers, in **competence development beyond subject-specific knowledge**.

Although most educators acknowledged the importance and relevance of sustainability and global competencies, one respondent (H12_HU) argued that teacher education already encompasses all essential competencies, making it unnecessary to address these separately.

Futures thinking competence (Gardiner & Rieckmann, 2016) refers to the ability to anticipate potential global challenges and envision how sustainability systems and strategies may evolve over time. Developing this competence requires innovative pedagogical approaches. At its core, this competence revolves around understanding what the future might look like, how we can prepare for it today, and how we can navigate uncertainty and effectively respond to future challenges. As one respondent noted:

> *It's somewhat empirical [...]. Any engagement with students should be geared toward a sustainable future—encouraging them to think about what they will do and how they will do it.* (H8_CZ)

Finally, **systems thinking** was also mentioned as a key competence for ESD/GE by some respondents.

> *Just yesterday I was dealing with this subject, the ability to synthesise. I want these dependencies to be systemic, what I read yesterday about the butterfly effect, to really be aware that everything is interconnected, and that's what I would put first.* (H13_HU)

During the thematic analysis of the interviews, we also sought to explore and understand topics that are implicitly present in the perceptions, assumptions and perspectives of the respondents. This was done by examining recurring patterns and themes within the interview transcripts. These themes were independently coded by two researchers and subsequently discussed until a consensus was reached.

As regards the practice of ESD/GE **no consideration of the students' prior knowledge in the field could be detected**, indicating that the respondents may assume a uniform starting point for all students or place less emphasis on assessing their existing understanding. This suggests a potential gap in tailoring educational approaches to different levels of prior knowledge, which could impact the effectiveness of ESD/GE implementation.

However, one educator reflected that students often possess more advanced perspectives on sustainability and even critique aspects of ESD as outdated in their programs:

> *If I perceive it correctly, those students are heading more towards Sustainable Development (SD)'s descendants, or followers of SD. And it's those current trends like Degrowth that are the current issue in their generation. It speaks much more to their current pain issues. Things like Degrowth or Circular Economy, Zero Carbon, Zero Waste. I think for those students, the concept of SD has broken down into these specific practical applications that are more understandable to them. They have taken over part of the SD agenda. I'm not saying that's representative. I've only heard that.* (T11_CZ)

In summary, our analysis highlights key competencies for effective ESD/GE that educators consider essential, including critical thinking, independent inquiry, and the ability to assess information critically. Emotional and values-based learning, along with systems, futures, and values thinking, were also recognised as essential for addressing sustainability challenges. Some educators emphasised the role of emotions in fostering environmental connections and managing eco-anxieties, while others advocated for shock-based pedagogies to drive engagement.

The absence of explicit consideration for students' prior knowledge in ESD/GE curricula suggests a potential gap in personalised and adaptive teaching approaches. At the same time, some educators observed that students are increasingly engaging with advanced sustainability concept. These insights underline the dynamic and multifaceted nature of ESD/GE, emphasising the need for continuous reflection and adaptation in teacher education programmes.

2.2.3. Cooperation, networking

In the following we summarise the cooperation efforts fostering GE and ESD in the pre-service teacher education based on the interviews. In general, the respondents called for more networking and cooperation (both internal and external) because they frequently feel like a „solitaire", alone, when trying to practice and strengthen GE and ESD. A sense of isolation was also noted by interviewees practicing environmental education in Hungary (Szűcs et al., 2024) and school teachers involved in GE in Poland (Aleksiak, Kuleta-Hulboj, Zielińska, 2023). Interviewees also felt that their efforts are more or less continuously maintained, but the progresses are only slowly appearing and are rarely obvious: "because it is not quite that sprint, yes, as I would say in the language of sport, but it is such a long marathon, a marathon run" (H1_SK).

Based on the interviews, the most frequent initiatives are bottom-up, network-driven, project-driven initiatives, and are based mainly on personal connections, NGOs, and inter-university collaboration.

Less common but more impactful initiatives would focus on institutionalised governance, teacher training reform, large-scale systemic cooperation, and measurable impact assessment.

The most common types of cooperation initiatives are:

1. Personal and professional networks (bottom-up initiatives)

Many collaborations are based on **personal contacts** between faculty members, researchers, and external partners. Examples: informal peer-to-peer exchanges, joint research publications, participation in professional forums and conferences.

2. Inter-university and international cooperation

HEIs frequently **collaborate with other HEIs** through research projects, Erasmus programs, and international alliances. Examples: Sustainability Platform of Hungarian Universities, Visegrad Fund projects, cooperation with Nordic and Western European universities.

3. Cooperation with NGOs and external organizations

Strong partnerships exist with **NGOs, business sectors, government agencies and local authorities** to integrate sustainability and global views into education. Examples: Service Learning programs with NGOs, cooperation with municipal councils for sustainability education.

4. Student engagement and experiential learning

Many HEIs encourage **student participation in sustainability projects** through mentoring, student unions, and practical fieldwork. Examples: student-led community gardens, service learning placements, peer knowledge sharing initiatives.

5. Thematic joint courses and research groups

Institutions collaborate on **sustainability-focused online courses and research networks** to integrate GE and ESD topics into curricula. Examples: joint sustainability courses, student research participation, faculty interdisciplinary research teams.

We found some less frequent but high-impact initiatives that may foster a systemic change with a strong GE/ESD focus. These initiatives that could drive broader, long-term systemic change but appeared less frequently in the responses include:

6. Institutionalised sustainability governance (top-down)

While some HEIs mention sustainability **coordinators or committees**, there is little mention of fully embedded **system-wide policies** or governance structures that mandate sustainability and GE at an institutional level. These permanent structures (like dedicated sustainability offices) can ensure long-term commitments rather than relying on individual enthusiasm. Institutionalised networking of sustainability coordinators or sustainability charged colleagues (e.g. network initiated by one of the investigated Hungarian universities) across different universities foster knowledge sharing and may help systemic integration.

7. Integration of sustainability into teacher training by interdisciplinary cooperation

While many initiatives focus on **specific programs** or collaborations, there is little mention of integrating sustainability education systematically into all teacher training programs. This could ensure long-term knowledge transfer into primary and secondary education, but usually requires present cooperation within the institutions. E.g. mandatory sustainability modules for all teacher education

programs implemented by staff members from social, economic and science disciplines. One single mandatory (or optional) course (not cooperatively implemented) is mentioned in case of some institutions.

8. Cross-sectoral cooperation beyond academia

Most **cooperation happens between universities, NGOs, and municipal actors**, but there are fewer structured partnerships with industry, policymakers, and international organisations to shape broader education policies. Bridging academia with industry and policymakers can push for system-wide curriculum reforms, funding mechanisms, and broader adoption of sustainability principles. Rare example: universities working directly with policymakers to mandate sustainability-focused national education standards.

9. Institutional support for grassroots initiatives and for scaling them

Grassroots sustainability initiatives (e.g., student-led projects) often remain small-scale due to **general lack of structured institutional support**. Dedicated funding, mentorship, and scaling mechanisms may help these initiatives to grow into systemic programs. E.g. once mentioned that a committed higher management staff member took up a programme.

10. Assessment and monitoring of cooperation effectiveness

The interviewees mentioned various partnerships, but **few references to structured monitoring, impact assessment, or quality control** of sustainability-related or GE-related cooperation efforts. Measuring or assessing the effectiveness of these initiatives ensures continuous improvement and accountability. A national or Europe-wide evaluation system for sustainability and GE cooperation in higher education and especially in teacher training. It could be partly implemented by including it in some widely used sustainability ranking criteria (e.g. University of Indonesia Greenmetric ranking criteria). No example was mentioned for this type of cooperation assessment, but the possibility and its advantage emerged during one interview.

2.2.4. Feedback

Feedback comes in a wide variety of forms, sometimes randomly from stakeholders (mostly students), or consciously and systematically collected (mostly in the context of quality control). Student feedback is mostly positive on initiatives related to GE and ESD. Negative feedback were also mentioned, especially relating the transformation of teacher education systems (e.g. the need to include new types of content makes it difficult to meet the requirements), even if, in line with established and accepted principles (e.g. sustainability framework strategies, UN recommendations), sustainability principles should not be a new element in teacher education but should already be an integral part of teacher education in all teacher education disciplines.

Student feedback can be incorporated into teacher education mainly in the context of teacher training courses, and in other cases, even when systematic feedback is collected, there is not always the capacity to analyse the responses, much less to incorporate them in some form into the training. In some cases, feedback is received from colleagues on a course or initiative, but no cases were mentioned where a critical feedback from above had led to an initiative for positive systemic change in GE/ESD.

2.3. Motivational factors in GE/ESD in Teacher Education

2.3.1. Individual motivations factors

Academic teachers are essential change agents, possessing the ability to mitigate risks associated with change through their deep understanding of their organisations' dynamics (Akins et al., 2019; Brinkhurst, 2011). Their self-determination and motivation are crucial for advancing SD within HEIs (Akins et al., 2019). Moreover, it is important to acknowledge that leadership and management play crucial roles in steering educational transformations at the institutional level (UNECE, 2021). Specifically, we focus on motivational factors, and opinions on the integration and role of ESD and GE in initial teacher education.

The study identified prevalent patterns of motivational factors and perceived goals related to the integration of ESD and GE. The research emphasises the importance of sensitising educational management and leadership to the principles of ESD and GE, alongside empowering teacher educators to identify optimal avenues for integrating ESD and GE into existing and new course and program curricula. A further area of integration lies in fostering networking and benchmarking exercises, serving as vital sources of learning and inspiration. This in turn, can pave the way for the establishment of faculty development initiatives and programmes in teacher education.

Grouping of motivational areas

Our categorisation method: We grouped responses into clusters with the same characteristics based on the most characteristic attributes.

Respondents' motivations can be divided into several groups:

1. **personal motivation** / *„personal motivations", „personal commitment";*

2. **social motivations /** e.g. *„problems in the world", „the will to do something", „concern for future generations" or „concern for traumatised students";*

3. **pedagogical motivational attitude /** *„helping students, transferring knowledge" or „helping prospective teachers to teach students from different backgrounds in a supportive way", „interested in innovative pedagogy", where sustainability issues are taught using new didactic methods, „giving sales and practical sessions, organising activities and workshops", „teaching independent and critical thinking", „motivating students to develop their attitudes", „sensitising students and teachers" and „teaching environmental and sustainability education", „developing attitudes and awareness of the high interest and lack of knowledge of students";*

4. a) **organisational/work motivation** / *„professional motivations", „love of the earth and the environment"* which is firmly embedded in professional work;

4. b) **scientific motivation** / areas where scientific work (research, professional conferences, running research groups) is present alongside education, such as the strengthening of an *„Interdisciplinary Research Centre"* (PL) with a multi-disciplinary intersection of sustainability and teacher education, *„commitment to science", „developing innovative pedagogical methods in the field of sustainability", „mission to promote the region's carbon neutral transition" or „research and development of sustainable lifestyles" or „working on research projects related to the topic".*

In the interviewees' answers, the terms *„personal commitment", „personal involvement", „responsibility" or „sense of responsibility", „conscience", „willingness to act" and „motivation" or „personal motivation"* are used several times to describe their own motivation for ESD/GE.

As regards the professional tasks performed by university professional teachers and educators, two thirds of the respondents use the terms *„own professional interest"* or *„professional qualification",* that also shows professional commitment and professional experience in the subject under study, and they are the ones who have experience in teaching on the subject of sustainability, environmental education or GE. Almost half of the respondents apply their professional knowledge in their work as teachers, so that not only their *„personal commitment"* but also their *„professional motivation" and „professional knowledge"* help them in their work. They also see themselves as *„role models"* and in addition to their personal motivation, they also have *„teaching responsibility",* which they emphasise in the interview.

The need and motivation to teach in a way that is compatible with the goals of GE is also reflected in respondents' negative experiences with the way the education system in Slovakia usually functions. For example, one respondent notes that after they had finished their studies and went to work with children placed in the correctional facility, they realised that they were unprepared to work with children who had trauma. Due to this, they realised that they needed to participate in specialised training to learn how to address practical issues encountered while being a practitioner. Moreover, this experience was formative in later years when they became a university teacher as they claim that they had decided to teach in a way that would emphasise the need to combine theoretical knowledge with practical in-class problems that future teachers might encounter. Later on, this led them to discover GE since they were searching for other innovative approaches to education (T3_SK). This experience reflects a broader trend among the respondents. Implicitly, they claim that they are motivated to teach about GE precisely because it addresses the problems the education system tends to overlook in how it is designed now. This type of motivation is connected to the understanding of one's own role as a (university) teacher. Since teachers embody the role of change-makers and *"influencers"* of future generations, the respondents are also driven by their understanding of what such a role brings about.

Table 2 shows that academic teachers' motivation is strongly influenced by sustainability education, global thinking and the use of innovative pedagogical methods. Interdisciplinarity, community collaborations, a sense of local and global responsibility and a strong attachment to the role of the teacher all contribute to teachers' commitment and active involvement in promoting sustainability.

The interviewees identify with their teaching role and feel a responsibility to educate future generations. This is closely linked to ESD, as environmental education and ecological responsibility is a mission for teachers. For example, sustainability weeks or outdoor education shape the mindset not only of students but also of teachers. Interdisciplinarity and eco-initiatives are key elements of ESD. The integration of the UN Sustainable Development Goals encourages educators to address global problems in a locally relevant way. Teachers often feel that they have a responsibility to raise awareness among future generations, which is also a strong motivating factor. In the face of global problems such as climate change or environmental crises, many teachers feel they have a responsibility to inform students and raise awareness of the issues. As a result, more and more teachers are motivated by the idea that they can contribute to a better world through education. Innovative teaching methods, such as inquiry-based learning, project-based teaching and the development of critical thinking, enable students to become actively involved in addressing sustainability issues. This is also an exciting challenge for educators, who can use more creative, interactive pedagogical tools alongside traditional teaching methods.

Table 2: Similarities in personal motivation*

CATEGORY	KEY CONCEPTS	EXAMPLES/MOTIVES (analytical findings)	SUCCESSFUL PRACTICES
Motivations of Teachers	identification with the role of the teacher, desire to educate, responsibility, making an impact, proactivity	Teachers identify with the role of shaping future generations, acting as models for students, fostering a love of nature, and having a personal responsibility identification with the teaching profession and the desire to improve future generations across various countries.	Gradual integration of sustainability aspects into existing courses based on teacher's own interest (examples from all HEIs can be found)
Sustainability in Education	Environmental concern, interdisciplinarity, eco-friendly initiatives, responsibility towards future generations	Many programmes encourage environmental education through initiatives like „Sustainability Week," outdoor education, and integration of the SDGs	Educational programs, sustainability weeks promote environmental responsibility, often tied to broader global education goals Many HEIs organise university-wide programmes to raise awareness and trigger sustainable behaviour (eg. waste collection, campaign to bike to work, local composting, bird-friendly uni-campus, etc.)
Local „thinking"	Working with disciplinary projects, local partnerships, community programs, student engagement	HEIs engage with local NGOs and businesses, often inviting guest speakers and organizing community initiatives to foster sustainability	Community-driven programs in sustainability and environment are common across different institutions Curious Learning elective course at UNIBA, SK
Professional Development	Scientific-researcher contact, collaboration between teachers and external organisations	Many programmes emphasise feedback mechanisms between teachers, collaborations with NGOs, and workshops for continuous development	Strong emphasis on fostering collaboration and sharing knowledge between faculty and to promote ESD Sustainability coordinator at Palacký University Olomouc, CZ, to help develop expertise in sustainability across disciplines

Innovative Pedagogy	Experimental pedagogy, inquiry-based learning, project-based learning, fostering critical thinking skills	HEIs explore new methods such as inquiry-based learning, tandem teaching, and active student engagement through outdoor projects	Pedagogical experimentation and critical thinking are central to educational strategies, environmental programmes and subjects
Global Issues and Responsibility	Global crises, personal responsibility, integration of knowledge, balancing personal and profession	Teachers see themselves as responsible for addressing global problems and raising awareness about sustainability and climate issues	Global crises are often linked to teacher motivation, with a clear focus on acting for the benefit of future generations

**personal motivations grouped based on responses to research interviews*

Based on the analysis of the interviews conducted during the research and the initial experiences and research findings described above, we see a need to rethink the role of both teachers and teacher educators in higher education. Our results show that academic teacher motivation is key to the long-term presence of GE/ESD in HEIs, and that the professional experience and patterns transferred by teachers play a strong role in creating sustainability thinking among students. Innovative pedagogical approaches such as place-based learning, service-based learning, outdoor education or research-based education contribute to the above objectives in teacher education in all four countries. Previous research emphasises the importance of raising awareness of ESD and GE principles among educational administrators and management, and of empowering teacher educators to identify optimal ways of integrating ESD and GE into the curricula of existing and new courses and programmes (Balogh, 2021).

Two important areas for the integration of ESD and GE knowledge in education are strengthening networking and benchmarking practices. Both areas provide feedback to both the teacher and the student on the usefulness and results of their work. This feedback can be the basis for knowledge acquisition and the key to personal inspiration for ESD and GE work. This process can pave the way for the strengthening and long-term development of new sustainable development initiatives and programmes in teacher education.

Commitment and motivation

Several respondents used the phrases ***„personally involved"*** *and* ***„committed not only in work"*** but also ***„in personal life"*** appears in several respondents, suggesting that they could become more credible in representing a sustainability and GE approach to students and their immediate environment. The responses also show that the presence of motivation **(whether personal, professional or other)** in the lives of individuals is **uneven**. An important factor influencing the above is the overload, isolation, burnout, lack of motivation or exhaustion of trainers, which negatively affects their motivation and their work, its efficiency, decreases their workload and the individual's success.

It also depends on the **feedback** they receive from students, or from colleagues, professional organisations; or whether they **receive support** from the institution, from grant funding, or from colleagues.

Motivational factors in university-level education in the V4 countries

Our research on the integration of ESD/GE in HEIs in the V4 countries has highlighted the motivational factors that influence teachers and HEIs in implementing these principles.

The impact of personal motivations can be interpreted as a common area, such as the personal interest of trainers in ESD and GE being important to respondents. There is a similarity between social responsibility and active participation in the university community, as well as the need to enhance student interest and to broaden the professional development opportunities for academics.

The role of HEIs strategies in promoting ESD/GE is highlighted. Formal integration of ESD/GE will be a key issue for future university education programmes to achieve success. It is clear from the responses that in many cases the commitment to ESD/GE is only formally present in the senior management of universities. Direct and indirect motivational factors for teachers can be found in universities' strategy documents and support systems. For example, the appointment of a sustainability manager and the establishment of an advisory board at university level, which provides management support to academics (CZ), financial support for research and conference participation on the topic by the university (HU), or some forms of further education and training for academic teachers, with the introduction of mandatory training courses for academics to incorporate the GE/ESD approach, can also be a motivating force.

Looking at the impact of international and national directives, the responses suggest that in all countries there is a need for greater emphasis on following the UN Sustainable Development Goals and EU directives, in addition to joining different international networks, due to the importance of networking and knowledge transfer. But of particular importance is the role of domestic guidance, such as national strategies and governmental measures in education policy.

Financial and resource-related factors, such as the impact of grants and university funding opportunities on the integration of ESD/GE or the lack of financial resources in universities (except in the Czechia), which in many cases is perceived as a shortage, emerge as strong motivating factors at both personal and institutional level.

The lack of training and professional development of academic teachers is an important factor in sustainable development and GE, as is the rigidity of the education system and the difficulty of integrating ESD/GE. The low level of knowledge of sustainable development will also be a determining factor for future progress among students, an area for improvement for all universities.

We have also seen many useful and good initiatives, the transfer of which between HEIs will be an important source of experience in the future. Examples of key initiatives for transfer of experience between HEIs identified during the interviews include strategy addressing sustaianbility at the level of HEI (SK), appointing a Sustainability Coordinator (CZ), gamification and practice-based learning (HU), obligatory ESD course for all university students (PL) and taking international experiences and presenting them at international conferences. The development of university sustainability strategies, the introduction of ESD and GE courses, and the successful implementation of projects funded by international and national tenders are of particular importance in all institutions.

The motivational factors supporting the integration of ESD/GE in HEIs of the V4 countries are broad, but they also come with obstacles. Successful integration requires the active involvement of universities, government support and the conscious involvement of teachers and students.

2.4. Challenges and Facilitators for GE and ESD Integration in Teacher Education

2.4.1. Introduction

This chapter examines the factors that support or impede the integration of GE/ESD in teacher education programmes across the Visegrad countries. Supporting and enabling factors are conceptualised as facilitators, whereas impeding factors are defined as challenges. Both facilitators and challenges operate at different levels—individual, institutional, local, national and supranational.

At the individual level, factors pertain to the competencies—including knowledge, skills, attitudes, values and motivations—of the individuals engaged in teacher education both as academic teachers, people in leadership positions and students. Institutional level factors refer to attributes of the higher education institution (HEI) as an organisation—including its structure, strategies, policies, resources, and organisational culture—and encompass elements such as strategic and organisational policies, administrative decisions, and communication structures. In the Visegrad countries, these institutional factors are often shaped at the national level, given the similarity in regulations governing university autonomy across the studied countries[14]. The local level pertains to the sociocultural and geographical context in which the HEI operates, including its relationships with local communities, institutions, and NGOs. The national level encompasses state regulations and policies, national strategies (or the absence thereof), and funding mechanisms. Finally, there is also a supranational level involving factors that transcend national borders and are global in nature.

The first part of the chapter describes the facilitators, while the second examines the challenges. Finally, a table summarises the similarities and differences among countries regarding supporting and impeding factors, indicating which ones are common to the countries studied and which differ. The interviewees agreed on the most critical enabling and hindering factors, though some differences also emerged.

2.4.2. Facilitators of GE/ESD Integration in Teacher Education

Overview of the facilitating factors across different levels: individual, institutional, national

Among the perceived facilitating factors, several enablers to implementing GE/ESD were identified across multiple levels—individual, institutional, and national. The table below summarises them and the following sections explore them in detail.

Table 3: Facilitating factors of GE/ESD integration in teacher education

INDIVIDUAL LEVEL	• motivated individuals among HEI teachers and students
INSTITUTIONAL LEVEL	• open and supportive HEI/faculty management and leadership • GE/ESD goals embedded in the strategic documents • intra-, inter-, extra-institutional collaborative capacity • academic freedom • existence of elective courses dealing with GE • adaptation from school practice • other: elimination of teacher-student or teacher-management hierarchies, (peer-) feedbacking, student-centred approaches
NATIONAL LEVEL	• presence of global topics and challenges that the education systems have to address • opportunities for integrating GE via the curricula reforms • wealth of existing educational materials, methods, and tools

14 Although HEIs have autonomy (in research, teaching, self-governance, financing etc.), they operate within a specific legal system. HEIs' regulatory acts and the way HEIs function must be adapted to statutory regulations, e.g. the constitution in Poland. Plus there are some regulated professions like teachers, for which there are training standards developed/published by the ministries. If a HEI wants to give qualifications for these professions to its students, it must align its study programme/curriculum with these standards.

INDIVIDUAL LEVEL

At the individual level, respondents agree that a big success is the fact that more HEI teachers are familiar with and willing to incorporate GE/ESD into their teaching, research or other initiatives. As one respondent remarks, bringing GE/ESD topics into teacher education is mostly possible thanks to motivated individuals who are passionate about the approach. They are then *"activators of the other colleagues, too"* (T3_SK). Thus, the incorporation of GE elements into teacher education mostly happens in the bottom-up direction.

What is equally positive is that the enthusiasm exists among many students, too. For instance at University of Debrecen, there exist various student initiatives launched by the student government that support sustainability efforts (e.g., litter picking, cycling, nature walks or water management) (H20_HU). Similarly, a respondent from Polish university, notes that a great advantage is that there is a group of passionate students who *"initiate so many different projects. They collaborate with external stakeholders, but also engage in activities through student organisations and scientific clubs"* while exploring the themes of GE (H6_PL). At Matej Bel University in Slovakia, the students called *"green ambassadors"* are responsible for raising awareness about sustainability topics via social media (H2_SK). The fact that, in all four countries, there are students who participate in GE/ESD-related initiatives is seen as a success as well as a facilitator for future GE/ESD endeavours because it shows that there is a demand for such topics from the side of the future teachers.

INSTITUTIONAL LEVEL

Supportive, Open-Minded Leadership

Regarding the institutional level, the most important factor that allows for the exploration and incorporation of GE/ESD topics at the level of institution is the supportive leadership or management. As one respondent puts it, *"our leadership is a really strong point, it supports us [in our efforts]"* (T2_SK; and also H17_HU; T21_HU; H9_CZ).

A good example of how much open-minded leadership matters is the case of one of the HEIs in Slovakia. The respondents expressed that they had been frustrated with how GE was pushed aside under the previous management. However, with the arrival of the new dean, that one respondent labelled as more *"mentally flexible"* (T4_SK), they were able to introduce a new course with GE elements. The respondents also praise the leadership of the faculty for being more open to topics such as sustainable development or GE, creating more democratic and communitarian environment at the faculty.

GE/ESD goals embedded in the strategic documents

What seems to be especially effective in making the management supportive of GE/ESD is if these themes are embedded in the official institutional strategies as is the case for University of Silesia in Poland, where the idea of sustainable development was made one of the main objectives and the teachers were asked to refer to this concept when developing study plans, syllabi and doing research. Similarly, the case of Matej Bel University in Slovakia, demonstrates that having a well-developed Long-Term Plans containing the concept of Green University makes the institution more proactive in its approach towards the GE/ESD.

In general, open-minded leadership may positively influence holding events such as conferences, collaboration with other HEIs and other organisations regarding the topics of GE/ESD, or supporting teacher and student exchanges where these topics are discussed.

Similarly well-evaluated is the supportive role the institution's management plays in pursuing collaborations with NGOs, private or business sectors. In return, these institutions may bring forward new innovative approaches to teaching GE, provide additional (practical) training for the pre-service teachers, and offer needed expertise when it comes to the development of GE-related courses or initiatives. The aspect of collaboration will be further explored below.

Collaboration Capacity

An important facilitating factor is collaboration, whether intra-institutional or inter- and extra-institutional. The first one can be, for instance, a strong, knowledgeable team of peers and supportive managers, fostering cooperation within departments and across the university. This can be facilitated through working groups (e.g., *"green team"* at Matej Bel University in Slovakia) or more formalised centres (Interdisciplinary Centre for Research on Humanistic Education at the University of Silesia in Poland) dedicated to ESD/GE.

Inter- and extra-institutional collaboration also includes partnerships that extend beyond a single institution, including inter-university cooperation or collaborations with NGOs and other external partners (schools, teachers, municipalities). One interviewee from Poland spoke about the interdisciplinary collective created in cooperation with artists interested in environmental issues. Thanks to the collaboration it is possible to learn from each other and develop various initiatives (T6_PL). However, it should be noted that this is mostly non-structured collaboration, often driven by individual initiatives. A second important note is that most of these collaborations relate to ESD or environmental education, not GE per se.

Academic Freedom

At the intersection of institutional and national levels, additional facilitating factors emerge. The crucial one is the substantial autonomy of HEIs. Even when teacher education standards do not explicitly incorporate GE/ESD, HEIs maintain the freedom to design their own curricula and syllabi. This enables teachers to develop and offer mostly elective, but occasionally also mandatory, courses on GE or ESD-related themes, whether targeted at students within a specific faculty or across the entire HEI. Such courses exist in the majority of HEIs researched, e.g., Service Learning at Matej Bel University, Curious Learning at Comenius University, mandatory sustainability course at University of Nyíregyháza.

Even if there are no classes fully dedicated to GE/ESD, thanks to the aforementioned academic freedom, academics can introduce elements of GE into their course activities. And those engaged in these issues often do this. For instance, one respondent claims:

> *Of course, I incorporate global themes [...] because I set up the course. It depends on us; the university has a certain autonomy in creating projects. We know we have to align with the learning outcomes, but when it comes to content selection... since we can, I include and connect these topics.* (T7_PL)

Academic teachers are also free to choose the educational methods they use and can therefore include some methods, tools or educational activities relevant to GE/ESD in their teaching practice. Some of the interviewees make use of this possibility:

> I *love outdoor education and I try to use it in my practice. [...] For example, I use the four corners method. Basically, you define the poles and then you make a statement. That can be adapted to any level from the smallest. I'll mark out the poles in a meadow in the field, or I'll put it up in the trees with some gum. And I'll give them a statement that's always debatable. E.g. „climate change is bad for plants" and they're supposed to express, by how they relocate within those poles, how much they agree and disagree. It's usual that they don't all think alike. The important thing is the discussion that gets started based on that.* (T9_CZ)

Adaptation from school practice

Another opportunity is to learn from schools. For example in Hungary, Sustainability Week is an annual educational programme. The aim is to showcase the complexity of sustainability and educate students through an action-oriented programme. The Week is an opportunity for schools to teach students about sustainability in a creative and interactive way. Every year, 420.000 students from 1.800 schools participate in Sustainability Week. It can be adapted to the HEI context, as one interviewee suggested:

> *There will be activities connected to a thematic week. For the first time, we have planned a sustainability week in the autumn. Let's say the theme is water, and then my colleagues [...] will have their own activities on this theme in maths class, in literature class, [...] I will have my own activities on the environment, to show them that you can actually have a theme week in higher education.* (H14_HU)

The same happened at one of the surveyed universities in Poland, where Global Education Week was organised, to some extent as a result of cooperation with schools and NGOs.

Other

One interviewee mentioned removing teacher-student and leadership-teacher hierarchies by various measures, such as using less formal way of speaking to establish trust and create more equitable spaces for conversation; (peer-)feedbacking, creating common spaces where teachers and students can meet (T3_SK). A student-centered approach and the recognition of students as colleagues are evident in the following quote, too:

> *The (student) who asked me during the class said that it's OK to shout during your lesson. I enjoy that, I really like it, because at least then we're highlighting something that's important to them. And they took advantage of that a lot. And I was happy about it, because I immediately said, „Well, you see, some people see it that way, and we'll try to prove it. And I'm not saying that I'm right. So argue with me, because you will have to solve it".* (T17_HU)

Flattening the hierarchy supports the creation of more collaborative, inclusive and democratic learning environments, which is essential when addressing complex and (controversial) global challenges. It can enable engaging in open dialogue over difficult topics, sharing diverse perspectives, thus fostering deeper understanding of multifaceted issues. It also empowers learners to contribute their insights as co-creators of knowledge and promotes a sense of shared responsibility. All of this is crucial in GE and ESD.

NATIONAL LEVEL

At national level, several facilitating factors were identified, too. In some countries the opportunities arising from curricular educational reform were mentioned. The Polish interviewees emphasised that the announced reform provides an opportunity to integrate GE/ESD into the core curriculum and will therefore create a need for teacher training and further education in this area. This, in turn, will necessitate the integration of this issue into the education of future teachers. Similar situation can be observed in Hungary and Slovakia.

In more general terms, a facilitating factor is also the presence of global themes and challenges to which the education system must respond. The respondents pointed out that sooner or later, education systems will have to be oriented towards these particular issues.

Finally, the interviewees pointed out the wealth of existing educational materials, methods, and tools predominantly developed by NGOs. These resources make it easier to integrate GE/ESD elements,

issues, topics or approaches into different courses or HEI programmes and flatten the learning curve for those academic teachers who are less familiar with them.

2.4.3. Challenges to GE/ESD Integration in Teacher Education

Overview of the challenges across different levels: individual, institutional, local, national

Similar to the facilitating factors, the challenges to GE/ESD integration in teacher education operate on interconnected levels - individual, institutional, local, national and supranational. The table below and the following sections further explain how these factors operate.

Table 4: Challenges to GE/ESD integration in teacher education

INDIVIDUAL LEVEL	• feelings of loneliness, burnout, lack of time • lack of motivation and interest among colleagues or students • insufficient capacities or competencies among the colleagues • prejudices and a lack of openness towards GE/ESD topics among colleagues or students
INSTITUTIONAL LEVEL	• overburden of university teachers • isolated initiatives, lack of cooperation and/or communication among the colleagues/faculties • overloaded study programmes that leave no space for any additional content/ topics • GE/ESD mostly in elective courses and on an ad hoc basis • theoretical focus perceived as an impediment to prioritising teaching • lack of funding and staff • autonomy of the HEI/faculty
LOCAL LEVEL	• lack of support from the local community or local culture
NATIONAL LEVEL	• lack of support from above: missing centralisation of documents, strategies • lack of political and public support for GE/ESD • risk of politicisation of GE/ESD • lack of training for academic teachers
(SUPRA) NATIONAL LEVEL	• the way the HEI system works (teacher vs researcher dilemma, academic productivity, financing based on number of publications and students, pressure to publish in English rather than national languages, teacher as a profession being underappreciated)

INDIVIDUAL LEVEL

Regarding the individual level, two interrelated issues were the most visible in the interviews: the burnout of the academic teachers, and a lack of interest and motivation among the students and academics. The former is related to another challenge operating on an institutional/national level, which is the overburden of academics (discussed further in the chapter). The latter means that only

few individuals are committed to ESD/GE, and disinterest is especially noticeable among those who do not see a direct connection between GE/ESD and their field of study or work.

The risk of burnout among engaged individuals arises from their loneliness and the disproportionate burden of responsibilities and activities they bear on their own. As one interviewee from Poland put it - fighting for the inclusion of climate education into teacher education is tiring; this person wonders if there is enough determination and commitment:

> I *have said that there are already quite a lot of these scientists, academics who already feel this way, who are competent, there is potential, just.... whether we will have enough of these people, this determination, strength. Well, because it's not easy to implement climate education in this education system, whether in primary schools or universities. To actually implement it, requires such dedication, and commitment. Will there be enough determination to start to educate in such a way that includes... the core of climate education, and environmental education, understood also in such a profound way, based on values and emotions. There is a question mark here - is this determination/commitment enough?* (T5_PL)

Similarly, another respondent notes:

> *Many people, really those who become active in these [GE] areas, they usually become active in other areas, too, because yes, when they enjoy something and have that internal drive and motivation to be active, they simply have it... but then they become exhausted from having too much on their plate.* (H1_SK)

The lack of sufficient support in the academic environment from colleagues and students, further exacerbates this feeling of loneliness and risk of burnout. This pertains to the ethnic, religious, and cultural prejudices present among academics, along with an overt reluctance to engage with ESD/GE topics or values. Some respondents claim that especially certain older colleagues refuse to support GE because they think it is connected to globalisation and liberal *"ideology"* (H1_SK; H2_SK). One respondent remarks that some older colleagues label those who tried to teach GE as *"Soros and American agents"* whose aim is to *"brainwash"* the students (H2_SK). Additionally, some respondents also noted the presence at the university of individuals contesting or denying the anthropogenic nature of climate change (H6_PL; H7_PL; T5_PL; T6_PL).

> *In the academic environment, this ecological awareness seems to be at a fairly high level, although there are some unfortunate exceptions that claim there are absolutely no climate changes, and natural resources... It has always been said that they would be depleted and would not exist, yet there has always been a way to bypass the fact that they are diminishing, new technologies and solutions will come, and so on and so forth.* (H7_PL)

Consequently, there is also a risk that these colleagues who may have (strong) reservations about ESD/GE can then influence the pre-service teachers and, thus, create prejudices towards GE among the younger generation of teachers. Facing all these negative reactions, one respondent asks:

> *The question is whether I should continue doing [GE], despite the fact that I can also expect negative reactions, or should I continue with it because it's something that actually develops the students, despite the fact that it is difficult for them and in a way more taxing than just sitting in lectures and taking notes.* (T3_SK)

Some respondents also claim that they have to justify the reasons why ESD/GE should be practiced in front of their students, too. For instance, in Slovakia, this is connected to a more structural problem of GE not being explicitly included in the State Educational Programme, which leads to the impression that the pre-service teachers are learning something they will not need when they start teaching. This problem exists in other countries as well, and it is related to the challenges pertaining to the national level - discussed below.

Another obstacle reported by the interviewees is a lack of knowledge, skills and capacities among colleagues. As a result, even those individuals who might be inclined to incorporate ESD/GE into their programmes—or even into individual academic courses or classes—do not feel sufficiently competent to do so. Additionally, one respondent points out that while the academic teachers prepare future teachers for specific disciplinary areas (e.g., natural sciences), they themselves may not have gone through the teacher training because they studied at different programmes and concentrations. In this sense, academic teachers sometimes lack knowledge about teaching (T2_SK).

Moreover, the aforementioned overall burden placed on academics by a wide array of responsibilities discourages them and hampers their efforts to acquire additional knowledge and skills, as such endeavours are both time-consuming and labour-intensive:

> *I really get the impression that most university teachers are overworked, we have too much to do and constantly have more bureaucratic demands [...] just give us a break.* (T2_SK)

It is not only overwork that poses a challenge. Reluctance to change and adherence to traditional teaching habits also creates difficulties in introducing new methods.

> *[...] it's a very tricky track, isn't it? When I want to tell another teacher that what they've been doing for 20 years or 30 years, they should change because the world is changing and there's going to be a lot of resistance.* (H14_HU)

> *It seems to me that sometimes in practice you come across, I don't mean this in a bad way, teachers who have had years of experience and I believe they are great teachers, but they don't have the desire to change things, to put so much energy into it. And I sense that the students want to, they want to do it differently, they want the kids to enjoy it.* (T8_CZ)

INSTITUTIONAL LEVEL

The institutional level operates in relation to the national level; however, due to the substantial autonomy of the HEIs, it functions as a distinct level. One of the most frequently mentioned obstacles was the overburden of academic teachers. As one respondent puts it, the teachers *"are overworked, they've had enough, and let's face it, most teachers have burnout"* (T4_SK). This is precisely because most university teachers bear the responsibility for GE/ESD on their shoulders, and they do not enjoy any systematised support.

It should be noted that this factor does not exist in a vacuum. It is grounded not only in the institutional policies and daily realities of a given HEI but also in broader processes and national education and science policies. Teachers feel overwhelmed and underappreciated. In addition to their research and teaching responsibilities, academics face a heavy administrative and bureaucratic workload, leaving them with limited time for other tasks. And since incorporating GE/ESD requires learning new content and approaches, it is time- and labour-intensive, many find it challenging to accommodate these additional expectations.

Regarding the institutional level, the respondents also point out that while there are GE/ESD initiatives, they still seem quite isolated, and they are usually led by individuals. Thus, they are not embedded in the institutions. Similarly, respondents claim that there exists a certain lack of communication between colleagues, faculties or GE-related initiatives as such which further strengthens feelings of isolation. Respondents also remark that there should be more (interdisciplinary) collaborations on GE. Otherwise, as demonstrated above, the efforts to teach GE may slip into teaching about one specific thematic field such as green topics.

Another institutional challenge mentioned by some interviewees was overloaded study programmes that leave no space for additional content/topics. Even if the person recognises the importance and value of GE/ESD, it is difficult for them to expand the programme with another subject or module.

Consequently, GE/ESD appear in teacher education primarily as optional, non-mandatory courses, which in turn significantly reduces their reach and potential to shape the attitudes of future teachers. Therefore, rather than systematically implementing GE/ESD into teacher education, the system depends on the students' choice. In this sense, we also come back to the motivated individuals who have to make an extra effort to promote their course, otherwise the students will not pick it (T4_SK; T1_SK).

On the institutional level, GE/ESD also faces a lack of financing, capacities and staff that would engage with it. The downsizing leads to fewer motivated individuals, plus the remaining teachers also have more responsibilities and tasks and thus, less time to dedicate to GE (T1_SK; T3_SK; T21_HU). While this is a wider problem that is not necessarily connected to GE/ESD as such, it does not help their institutionalisation in any way.

Few interviewees raised an interesting issue: the predominant theoretical focus at their university is perceived as an impediment to prioritising teaching (T3_SK; T8_CZ). On closer examination, this challenge appears to be part of a larger pattern, related to the "publish or perish" pressure in contemporary academia worldwide. Other interviewees echoed similar concerns but they placed this emphasis on research and theory development within the context of wider national and supranational changes (addressed below).

Finally, the autonomy of the HEI/faculty seems to be a double-edged sword. While on the one hand, a supportive and open-minded management of the faculty or HEI is key in pursuing GE/ESD in teacher education, as we have seen on the example on the other hand, if the leadership is not open-minded enough to support topics of GE/ESD, they can be completely backgrounded and all channels can be blocked (T4_SK).

LOCAL LEVEL

The obstacles at the local level may include a lack of support of the local community or local culture. However, in the interviews such a challenge appeared only once by a respondent from Poland, who mentioned that there exist negative attitudes towards GE/ESD-related themes and prejudices in some students' families and local communities, which conflict with the values of ESD or GE and make it more difficult to cultivate these values (H7_PL).

NATIONAL LEVEL

At national level, related to the state's regulations and policies, the following obstacles have been identified. The respondents from Poland and Slovakia remark that they do not feel any particular support from government, Ministries of Education or other relevant agencies when it comes to GE/ESD in teacher education. Some call for a new National Strategy for GE (T1_SK), some remark that there is no centralisation of documents and strategies they should be drawing on when trying to implement GE/ESD (T1_SK; T2_SK; H5_PL; T5_PL).

The respondents also claim that they do not have enough trainings about GE for university teachers who prepare future teachers. Also, there are *"no methodological guidelines and no methodological support"* from the relevant ministerial agencies (T1_SK). And in case there are some trainings, it comes from the dedicated NGOs or private sector.

Similarly, some respondents claim that they do not have enough teaching materials. This may seem contradictory to the wealth of educational resources described above. But it is not. A majority of these resources have been developed by the NGOs, and solely on that basis they do not command high regard among a significant portion of the academic staff, who do not consider these materials to be on an equal footing with academic textbooks. Moreover, usually these resources are scattered across various websites, and difficult to find. Finally, in Slovakia and Hungary, and until recently also

in Poland, NGOs and their work have been discredited and questioned by the government which also weakens their position.

(SUPRA)NATIONAL LEVEL

Other challenges described by the interviewees are mainly related to both levels - national and supra-national - depending on the interpretation. For clarity, these are categorised as belonging to the supranational level because they are common for all four countries, and (likely) operate on a global scale. The most significant challenge, as identified by respondents, is the way the whole system is set up:

> I *am very frustrated [...] I can devote myself to training top teachers as a mentor in practice, I have good contacts with schools, I could attract good teachers, but actually the system does not allow me to do this to a large extent and by the system, I do not mean the university, by the system, I mean the way of educational policy in Slovakia is set up or the way the overall policy for the training of future teachers is set up.* (T3_SK)

The interviewees mentioned various aspects of this issue. One is the way HEIs and faculties are financed (and evaluated). They are partly funded by the amount and quality of research they produce and the number of students they have. The respondents criticise the former practice, for various reasons. Some argue that the primary role of teacher education programs should be to focus on teaching rather than research (T3_SK). Others claim that teaching should be as much valued and respected as research because they are equally important activities, especially in teacher education (T4_SK; H5_PL). Some interviewees mentioned the workload of teacher educators, who, compared to other faculties, spend significantly more time teaching. As a result, they have less time available for research:

> *When I spoke to a colleague from the Faculty of Natural Sciences, he was surprised how much we teach, they don't teach as much, [...] if he teaches less, he can devote more time to other things (research), but <u>we are all evaluated as if we were the same.</u>* (T3_SK, emphasis added by the authors)

The partial linkage of university funding to student numbers presents another challenge. Pedagogical faculties are not the first choice for most students who end up studying at them. This is also influenced by the fact that teaching as a profession has lower prestige in Visegrad countries and they are not valued as much as they should. One respondent says that they often have to dedicate an extra amount of time and energy to explain to the students why being a teacher is such an important profession (T4_SK). Since the teachers have to dedicate more time to more pressing issues such as instilling the identity of teacher within the students, they sometimes do not have time for innovative approaches such as GE.

Apart from the criticised criteria of financing, the interviewees also identified other interrelated features of modern academia that pose challenges to integrating GE/ESD in TE. The *"publish or perish"* productivity pressure compels academics to prioritise research and publication over teaching. Combined with insufficient recognition of teaching in academia, this makes engaging in new initiatives that require significant effort and time, such as GE, an unprofitable and burdensome extra task. Moreover, methodological publications and textbooks, which are important for training future teachers, are valued significantly less in evaluations than research publications:

> *[...] a rather interesting paradox is that currently, [...] an external system for evaluating scientific and research activities does not take them (textbooks, methodologies for teaching) into account at all, that although I have published 3 methodological publications about teaching, [...] I don't have them there and I'm falling behind in the evaluation, so I'm also forced to publish [more].*

In addition, if they are aiming for higher scored, high-impact publications they have to publish in English. This might unconsciously exclude many primary and secondary teachers that might not speak English, who might otherwise benefit from such publications.

> *Now we have a book published in London and it was focused on soft skills [...], but we published it only because we simply needed to increase the evaluation (of the faculty). And a colleague asked me why we didn't write in Slovak, too. [...] But in English it will simply receive a higher evaluation, I can put it up in the international database, and therefore in Research Gate, and more people will cite it–that is true, but for the actual performance of the practice it is basically just made because it seems to me that we need it (for a better evaluation).* (T3_SK)

The next supranational challenge is related to the overall low interest in GE/ESD and related issues in the society and their marginal position in academia. As respondents remark, GE/ESD in teacher education is neither a political priority nor a priority of the wider public. If there is little societal interest, students are not interested, authorities are not interested, and decision-makers do not really mainstream these perspectives in social life and education, there is little motivation for teaching about them and researching them.

> *I think that in our society the concern for the environment and what is happening on a global scale is not very high. [...] In my opinion, this is not just a matter of introducing a subject, [...] content and topics. We will be ineffective, even if we introduce a lot of them, because the social background makes it difficult for us to be effective. [...] It seems that in Poland, responsible attitudes towards the world are very rarely encountered. We tend to close ourselves off from the world; we expect the world to help us, support us, and appreciate us rather than wanting to change the world ourselves. We have little conviction that our actions are necessary for the world. We are not interested in the world.* (H7_PL)

This low interest may be amplified when there are climate change deniers among fellow academics or people actively opposing the inclusion of GE/ESD into academic education. Some respondents even claim that once they would start advocating for GE/ESD more prominently, they fear the political backlash that could follow as many of the topics can be considered controversial, political or ideological, thus, undesirable at the university. Consequently, this politicisation of GE/ESD could be dangerous because not a lot of politicians understand what it is and they would misuse it for their own political agendas:

> *A threat to GE is a political discourse, which is disparaging and is based, in my opinion, on the absolute absence of knowledge of what GE is all about [...] But there are those whom we have elected and others nominated by them, I feel that they are totally uneducated in these issues and I perceive this as a great threat not only to the topic of GE. [...] So, in that I perceive a huge threat and that of course has an impact on the lay discourse [...] which goes hand in hand with it, because there is a lack of a standard minimum level of critical thinking. [...] We are just unlucky that political discourse has an impact on education.* (H2_SK)

2.4.4. Comparison of facilitators and challenges identified in Visegrad countries

Table 5: Comparison of facilitators and challenges identified in Visegrad countries

LEVEL	FACILITATORS	COMMON OR SPECIFIC	CHALLENGES	COMMON OR SPECIFIC
Individual	motivated individuals among HEI teachers/ students	common	feeling of loneliness, burnout, lack of time	common
			lack of motivation & interest among fellow academics/students	common
			insufficient competencies or capaciti-es among fellow academics	SK, HU
			prejudices & lack of openness towards GE/ESD topics among fellow academics/students	PL, SK, HU
Institutional	supportive management/ leadership	common	overburden of university teachers	common
	GE/ESD goals embedded (and updated) in the strategic documents	PL (US), SK (UMB), HU (EKKE, PTE)	isolated initiatives, lack of cooperation or communication among academics/ faculties	PL, SK, HU HU
	elements of *"sustaina-bility infrastructure"*	CZ, SK (UMB), HU	overloaded study programmes (frequently with dispersed focus)	common
	Intra-, inter-, extra-institutional collaborative capacity	common	GE/ESD mostly on elective courses and on an ad hoc basis	common
	academic freedom	common	autonomy of the HEI/faculty	SK, HU
	Adaptation from school practice	HU, PL		
	reduction of hierarchies, (peer-) feedbacking, student-centred approaches	SK, HU		

Local	-		lack of support from the local community	PL, HU
National	presence of GE issues & challenges that education systems have to address	PL, SK	lack of support from above	SK, HU
	opportunities for integrating GE/ESD via the curricula reforms	PL, SK, HU	lack of political & public support	SK, HU
	a wealth of existing educational materials, methods, and tools	common	risk of politicisation of GE/ESD	PL, SK, HU
			lack of training for academics	SK, HU
Supranational	-		greater emphasis on research & publishing, less on teaching	common

As can be seen from the table above, many factors—both facilitating and hindering the integration of GE into TE—were mentioned in the interviews across all Visegrad countries. The most significant common facilitators were the increased awareness of and interest in the GE/ESD-related themes and approaches. These initiatives are driven by the motivated individuals representing both the university teachers and the pre-service teachers. In this sense, the incorporation of GE/ESD into teacher education is progressing in the bottom-up direction. Among the challenges identified, the most common were (1) burnout of the academic teachers, (2) lack of interest and motivation among the students, academics and society as such and (3) the overall neoliberal set-up of HEI systems.

However, some differences were also identified. For instance, in Slovakia, some respondents claim that communicating with the MERDYSR is difficult and it often does not give them instructions about how to proceed with teacher education even if there is currently a new curriculum in place; thus, pre-service teachers should be prepared to teach in a different way and moreover, many of the strategies and legal documents are not harmonised and unified – e.g., what is binding for secondary schools is not binding for teacher education; thus they might not be preparing the pre-service teachers in a way that corresponds with the primary/secondary school system (T3_SK).

It can also be observed that challenges can sometimes be the flipside of facilitators, e.g., academic autonomy and freedom. Or that the lack of a facilitating factor often constitutes a challenge.

3. CONCLUSIONS

To conclude, we have identified five patterns that run across all Visegrad countries when it comes to the presence of GE and ESD in teacher education. These are:

- **GE/ESD not referred to explicitly, predominance of sustainability-related topics:** Most respondents are familiar with what GE and ESD. While in Slovakia and Poland, the term that is predominantly used is GE. On the other hand, Czechia and Hungary mostly use the term ESD. In practice, many of the respondents do not operate with these terms explicitly, but rather they refer to them through the references to the underlying themes, concepts, attitudes, values or pedagogies that are connected to GE/ESD. It is equally important to mention that most of the themes that are

being explored on a regular basis are sustainability-related and green topics, while other topics of GE are often backgrounded.

- **Growing awareness, marginalised and ad hoc implementation**: When it comes to the way GE and ESD function in teacher education, despite increasing recognition of the importance of and interest in ESD and GE, these educational approaches continue to be on the periphery of mainstream teacher education programmes. The implementation of GE and ESD into teacher education remains ad hoc and unsystematic. This is mostly because GE and ESD enter teacher education as bottom-up initiatives, as explained below.

- **Heavy reliance on individual advocates**: Progress in ESD and GE is primarily driven due to bottom-up initiatives by a few dedicated individuals, underscoring the need for broader engagement. Relying on individual advocates is, as the results show, insufficient because: individuals lacking wider support are at high risk of professional burnout; any change, even if it occurs, is slow, and it is a bumpy road, strewn with obstacles, initiatives remain sporadic and isolated. Since GE and ESD rely on the role of the individuals, their position is continuously endangered. This is because GE and ESD are insufficiently institutionalised.

- **Support from the management / leadership of the faculty/HEI is crucial, but currently usually insufficient:** The role of the supportive management and leadership is crucial. In all four countries, the HEIs and faculties that are preparing future teachers enjoy relatively high levels of autonomy when it comes to managing their affairs. If the management of the HEI is open-minded when it comes to these topics, there is more freedom to explore GE and ESD. Nevertheless, it is equally important to mention that most of the efforts and objectives at the institutional levels are connected to the themes of sustainability, or they are focusing on the infrastructural initiatives (e.g., recycling, going to school on a bicycle, eco-buffet, energy efficient buildings, raising awareness about sustainability). Most of these initiatives are not directly connected to the incorporation of GE and ESD into teacher education. Similarly, if there are any initiatives directly impacting GE or ESD in teacher education, they are usually not properly institutionalised and come from the motivated individuals.

- **Crucial role of NGOs, that are also endangered by their outsider status and hostile environment:** The motivated individuals are often supported by the NGOs that have expertise in the field of GE and ESD. These NGOs are usually not recognized as institutions that can award credits within the education system, they are, thus, outside actors. At the same time, these NGOs are also operating in hostile political environments – they are often labeled as foreign agents, their fundings are cut, and their expertise is questioned. In this sense, the cooperation between HEIs and NGOs might also be seen as unstable in the long run, and again, frequently hold on personal connections.

- **(Relative) openness of HEIs threatened by insufficient political support and a lack of legal frameworks:** Despite the many possibilities that HEI/faculty autonomy provides for the development of GE and ESD in teacher education, the system is still limited by the fact that it should correspond to the wider institutional and legislative frameworks on the national level. However, as shown, these frameworks are largely devoid of any (explicit) mentions of GE. Without systemic changes and wider institutional backing, the current efforts to advance ESD and GE will remain limited and struggle to achieve widespread impact. At the same time, the political as well as the public will to institutionalise GE and ESD into teacher education more coherently is almost non-existent. Plus, there is a high risk of politicisation of themes related to GE and ESD. In this sense, perhaps ironically, we can ask the question of whether GE and ESD are sustainable in such a system that relies on the bottom-up initiatives standing on few, while top-down initiatives are almost non-existent and sometimes, the top-down efforts actively work against GE and ESD. This is the crucial dilemma GE faces in these countries and the question is how to overcome it.

- **Lack of a whole-university approach**: As they stand right now, GE and ESD are not sufficiently supported by the state and central administration - thus, the institutionalisation of GE and ESD in teacher education is not driven from the top-down level. In order to support the further institutionalisation, it is important to look at the meso-level presented by the HEIs and faculties. Since they enjoy a relatively high level of autonomy, they may introduce GE and ESD into the teacher education programmes. At the same time, not only they can enforce the incorporation of GE and ESD into teacher education within the institution, but once more students (future teachers) will come across these topics, they will be more likely to teach them at the level of primary and secondary school, thus, creating additional pressure from the bottom for a more systematised and systemic support from the responsible ministries and governmental agencies. Consequently, it is crucial for HEIs to adopt a comprehensive approach to GE and ESD, integrating them into their core strategies, and providing institutional support to enhance their relevance and impact for students. A comprehensive strategy ensures that leadership, policies, resources, and practices are all coordinated, fostering an environment where innovation such as GE/ESD can be effectively integrated. It can also minimise inconsistencies, resistance to change, and create shared ownership of the innovations among the stakeholders. A whole institution approach also helps embed new practices into the organisational culture, thus enhancing both the sustainability and long-term impact of the changes. Finally, having a whole institution approach means that besides incorporating GE/ESD into strategic documents, requires a dedicated body, integration into several courses and funding, also involves committed governance, campus operation, community engagement, monitoring. Approaching GE/ESD in this way allows for a comprehensive approach that demonstrates to the future teachers that GE/ESD is a lived experience, not just a content of their courses.

4. RECOMMENDATIONS

As the findings show, GE and ESD in all Visegrad countries largely depend on the often isolated efforts of motivated individuals. However, this approach is unsustainable in the long term, as these individuals—already overburdened with administrative and bureaucratic tasks while juggling their roles as researchers and teachers—are at risk of professional burnout and declining motivation for GE/ESD. As a result, due to these challenges, GE/ESD is incorporated solely on an ad hoc, non-systematic basis.

Consequently, to support these individuals, a more structured, centralised, and systematic approach to GE/ESD is needed. In all four countries, interventions should address two levels - the institutional and national level. At the institutional level, this involves HEIs and faculties and their efforts to integrate GE/ESD. At the national level, measures should primarily focus on ministries (particularly the Ministries of Educations and Ministries of Foreign Affairs) and other governmental bodies relevant to the GE/ESD agenda. While these two levels are interconnected, it is important to note that due to the relatively low political will and interest in the GE/ESD agenda, it seems that the institutional level should be the one to be primarily targeted. Moreover, the relatively high autonomy HEIs and faculties have over the management of their affairs, the changes may be implemented faster than at the national level. Still, the national level measures are important in further creation and/or unification of existing legal and organisational frameworks relevant to GE/ESD.

Consequently, the following recommendations can be formulated to improve the integration of GE/ESD into teacher education programmes:

Adopting a whole-institution approach to GE/ESD

- **Incorporating GE/ESD principles and themes into the strategic objectives, plans and other strategic documents of the HEIs and relevant faculties**

  HEIs should have a clearly defined framework to ensure the systematic presence of GE/ESD in the curricula. If GE/ESD is incorporated into the strategic goals of HEIs more explicitly, there is a higher chance it will be pursued in a more systematised way in teacher education and beyond.

- **Supporting the creation of a dedicated GE/ESD body**

  Creating a body dedicated to GE/ESD will strengthen its position in HEIs as there will be a team of experts dedicated to setting, implementing and monitoring of the GE/ESD strategy. Moreover, grouping dedicated individuals at the university level assures not only the interdisciplinarity that GE/ESD intrinsically necessitates, but also prevents feelings of loneliness university teachers often feel when they are trying to pursue GE. Finally, having such centers for GE ensures higher visibility for GE as such. The dedicated body for enhancing GE/ESD could have a form of a working group (as is the case of *"green team"* at Matej Bel University in Banská Bystrica, Slovakia), interdisciplinary teams or centres (mirroring the Interdisciplinary Centre for Research on Humanistic Education at University of Silesia in Poland), or a GE/ESD coordinators at HEI and faculty level (similarly to the sustainability coordinator at Palacký University in Olomouc, Czechia).

  A part of the dedicated GE/ESD body should be specifically dedicated to designing, implementing and monitoring teacher education programmes that would systematically incorporate GE/ESD in the preparation of the future teachers.

- **Incorporating GE/ESD into all the university trainings**

  The commonly recommended action is integration/inclusion of GE/ESD (their approach, goals, values, content) into all university trainings or to a particular university-wide course (mandatory) for all.

- **Securing long-term funding for GE/ESD**

  HEIs should actively seek grant support aimed at long-term GE/ESD projects.

The integration and embeddedness of GE/SDE in teacher education programmes

- **Including GE/ESD principles and content in compulsory subjects in TE programmes**

  As of right now, GE/ESD is included only in a couple of elective courses. To ensure that all students of teacher education programmes encounter GE/ESD during their studies, GE/ESD needs to be included in compulsory subjects, too. In return, this will also raise awareness about the topics of GE/ESD as such and provide future teachers with solid knowledge and shape their attitudes and beliefs. Alternatively, to ensure that future teachers come in contact with GE/ESD, GE/ESD can be introduced via a university-wide course open to all or the themes and principles of GE/ESD can run through all the university courses (as demonstrated above).

- **Incorporating additional GE elements into TE courses on various topics**

  GE mostly gets to the teacher education through the topics of sustainability, so it is necessary that GE/ESD is taught in courses about various themes and topics (e.g., global social justice, gender equality, poverty and inequalities). This will demonstrate to the students of teacher education the variety of ways and topics GE/ESD can encompass.

- **Promoting innovative teaching methods in relation to GE/ESD and beyond**

  The use of simulation games, gamification and interactive digital tools increases the effectiveness of teaching. These innovative methods likewise support unique, inter- and transdisciplinary understanding of GE/ESD-related topics. A good example could be the course titled Curious Learning present at Comenius University in Bratislava, Slovakia. Another good example is place-based learning and outdoor learning as emphasised by our respondents from Hungary and Czechia.

- **Engaging students in project-based learning and practice**

  At the same time, GE/ESD should not be only about acquiring necessary knowledge about various global issues and topics. Equally, it should be about the practice. Consequently, students should have the opportunity to apply GE/ESD directly in the school setting through collaboration with schools that have already incorporated these topics. Promoting field learning and field trips also helps students understand GE/ESD-related topics through direct experience. A good example of how GE could be approached in practice is through courses such as Service Learning present at Matej Bel University in Banská Bystrica, Slovakia, that combines theory and practice in addressing the needs of the community. Additionally, drawing from the best practices of practicum schools, student teachers can contribute valuable insights and innovative methods gained from their school experiences back into teacher training, as mentioned as a good practice by a Hungarian respondent responsible for methodology training for educators.

- **Supporting peer learning (students-to-students), student-centred approaches to learning, student activation and discussions on GE/ESD topics in teacher education**

  Peer learning and student activation are key in the introduction of these topics from the bottom-up direction and giving the students the agency over the way GE/ESD is going to be practiced at the institution. At the same time, if there are enough students in teacher education programs asking for a more profound engagement with GE/ESD, it creates additional pressure from below, since now, the demand for GE/ESD comes mostly from the university teachers. Furthermore, teacher educators can design their courses to build on students' existing knowledge and interests in sustainability and global issues, making learning more engaging and relevant.

Supporting university teachers who prepare future teachers in the development of GE/ESD-related knowledge-building, skills, attitudes, values

- **Mandatory on-the-job training:**

  All university educators preparing future teachers should undergo GE/ESD-related professional training that would ensure that faculty members across disciplines are equipped to integrate GE/ESD into their teaching. As stated by one of the Polish respondents, a good example of how this can be done is the Swedish example of introducing an obligatory ESD course for academics teaching future teachers.

- **Offering a systematic option for continuous training of university teachers in GE/ESD topics (e.g., via the micro-credentials)**

  It is important that the academic teachers have constant access to the trainings within the field of GE/ESD. This can be managed by the collaborations with the NGO, private and business sector that provide such trainings.

- **Developing methodological and didactic support in relation to GE/ESD**

  Lack of methodological and didactic materials is a major barrier for teachers. The creation of methodological support and teaching modules would facilitate their implementation. Modernising the methodological culture of teachers in teacher education (e.g. collaborative and cooperative methods, projects, field exercises, digital applications) is also essential. Competency-based, problem-oriented higher education pedagogy is needed in teacher education as well. Student-centredness and students' empowerment can contribute to effective GE/ESD, for example through the involvement of students in the development of their own training. Searching for and creating volunteering opportunities related to sustainability and global responsibility. It would be worthwhile to move towards modularity in curriculum design.

- **Promoting research on GE/ESD**

  Supporting research projects on effective GE/ESD teaching strategies will help to increase awareness of best practices and offer practical guidance for integrating these topics into the classroom.

- **Alleviating teachers of teacher education programmes of administrative and bureaucratic tasks and responsibilities**

In order to support university teachers who prepare future teachers in the development of GE/ESD-related knowledge-building, skills, attitudes, values, they need to have more time and space to do so. As of right now, respondents from all four countries report that they often do not have time to educate themselves and consequently also teach GE/ESD to others precisely because they are overburdened by other tasks - usually of administrative or bureaucratic nature. Minimising administrative tasks for academics whose dedicated tasks are 1) developing ESD/GE contents, 2) researching effective methods of ESD/GE and 3) working out collaboration methods with the community, with clearly defined set of tasks and responsibilities would allow these innovative educators to focus more on GE/ESD teaching, research, and community engagement.

Strengthening (inter)national cooperation and networking in relation GE/ESD

- **Exchanging experiences and sharing of good practice in relation to GE/ESD**

  Many of the academic teachers experience feelings of loneliness or burnout. These could be avoided if they would feel more supported. This can be done via a stronger emphasis on networking and collaborations between the university teachers and/or future teachers in the topics of GE/ESD. Creating platforms or fora for sharing teaching strategies between the university teachers and/or future teachers would help disseminate effective approaches. To institutionalise such initiatives, the platforms should meet on a regular basis and they should be inscribed in the strategic documents of HEI.

- **Engaging HEIs in international GE/ESD networks**

  Most of the inspiration to teach GE/ESD in teacher education comes from the cooperation activities with other (inter)national HEIs. For this reason, it is essential to include more HEIs or other teaching and research institutions that deal with the topics of GE/ESD. Such collaborations can help universities to transfer good practice and new methodological approaches.

- **Promoting student and academic mobility**

  Programmes such as Erasmus+ offer the opportunity to gain experience abroad in the field of GE/ESD. HEIs could encourage and incentivise teachers and students who incorporate and benchmark these experiences and good practices. Similarly, HEIs should try to attract international students and academic staff with the aim to import good practices related to GE/ESD in teacher education and beyond.

- **Supporting cooperation between the HEIs, NGOs, private sector and local communities**

  Partnerships between universities and these organisations and initiatives contribute to deeper implementation of GE/ESD in education. To ensure a systematisation of these collaborations, these cooperations should be rooted in the strategic objectives of the HEIs. Developing an institutional strategy can help formalise these efforts by identifying and incentivizing dedicated educators to serve as liaisons, fostering meaningful engagement with external stakeholders.

- **Recognising the NGO, private and business sector as fully-fledged partners, not only as partners in the implementation of university activities within the third mission**

  NGOs, private and business sector hold the knowledge, expertise and experience when it comes to GE/ESD since they frequently organise workshops, trainings and publish teaching materials and activities. If they would be able to (co-)teach courses and award ECTS for the students, the pool of GE/ESD experts able to teach would become much bigger. Thus, even if the universities are downsizing, these actors would be able to supplement the role of university teachers.

Supporting the obtainment of feedback to improve the incorporation of GE/ESD into teacher education

- **Establishing channels of formal feedbacking (from students, graduates, university teachers, training schools, NGOs, the private sector and other relevant actors)**

  Feedback is crucial in the process of development and improvement of courses related to GE/ESD in teacher education. HEIs should continuously demand feedback from all the relevant stakeholders, not only students and training schools. In order for the feedback to be systematised and demanded on a regular basis, it is important that the HEI and/or teacher education programmes incorporate the practice of feedback into the strategic documents of the institution. Such feedbacking has been introduced for instance at HEIs in Slovakia.

- **Creating environment where students can offer feedback without the fear of repercussions**

  While feedbacking is a crucial component of improving GE/ESD incorporation into teacher education, multiple respondents pointed out that students, thus, future teachers often do not provide feedback, whether formal or informal, because they are afraid of the repercussions and punishment even if the feedbacking is anonymous. For that reason, it is first of all important to create an environment where trust is built between teachers and students. A good practice tested by the Comenius University in Bratislava, Slovakia, is when the institution asks for external facilitation (without the teachers) in order to ease students into giving feedback and after the facilitation, the students will feel more eager to give honest feedback (T3_SK). Additionally, creating equitable spaces for discussion between teachers and students can improve the overall atmosphere and build up trust and transparency - this can be done through removing symbolic language barriers between the educators and students.

- **Teacher-to-teacher feedbacking and supervision**

  To improve the incorporation of GE/ESD into teacher education, it is equally important to support the teacher-to-teacher feedback and supervision. This is not a common practice in academia. In this sense, it is important to create channels through which this can be achieved. For instance, it can be a part of the strategic objectives of the institution. A good practice exists at the Comenius University in Bratislava, Slovakia, where teachers of one subject give each other feedback after each lecture - this will require one teacher to teach and others to listen and observe. After each lecture the teachers gather around and discuss what went right and what could be improved. Additionally, also the so-called hospitations, which are visits of other teachers' lectures followed by a small feedbacking session. This practice could be exported to other HEIs. Additionally, since GE/ESD are intrinsically multi- and transdisciplinary, having feedback and supervision from teachers from different fields could improve the overall approach to GE/ESD in teacher education. Finally, such feedbacking and supervision should not be only intra-institutional. Inter-institutional exchange, feedbacking and supervision should be established. Further, the HEIs should include such practice in their strategic objectives and proactively look for experts from the GE/ESD field that could come and supervise and give feedback to the university teachers to elevate the quality of GE/ESD in teacher education. Furthemore, an effective approach to learning would be for educators dedicated to GE/ESD to establish a community of practice, supported by regular forums for discussion and knowledge exchange. These forums can serve as dynamic learning platforms where educators share challenges, seek peer advice and showcase best practices. By fostering collaborations, mutual learning and professional support, such a community would strengthen the collective expertise and impact of educators in GE/ESD.

Incorporation of GE/ESD into national legislative and organisational frameworks

- **Adopting National Strategy for GE/ESD to define the concrete objectives – also in relation to GE/ESD in teacher education**

  The approval of a National Strategy for GE/ESD or other central document would signal that

GE/ESD is a political priority. At the same time, the National Strategy for GE/ESD could further strengthen the role and importance of GE in teacher education by naming HEIs and faculties as responsible for the implementation of GE/ESD.

- **Including GE/ESD themes and principles in the description of the teacher education study programmes and subsequent appeal to an interdisciplinary understanding of teaching in context**

  Although educators have considerable freedom in choosing what to teach, even with a set syllabus, incorporating references to GE/ESD would encourage greater awareness and motivation to include them.

- **Unifying and harmonising of existing legal and organisational frameworks including requirements for graduates of HEIs, study program descriptions and professional standards for primary and secondary school teachers**

  As it stands right now, the existing legal and organisational frameworks on the national levels are not harmonised. If the implementation of GE/ESD into teacher education were made explicit in the study program descriptions and requirements for graduates and similar expectations were placed on the practicing primary and secondary school teachers, GE/ESD would gain prominence and importance. At the same time, motivated individuals would be able to rely on the existing frameworks when faced with opposing views from the faculty leadership, colleagues or university students.

- **Creating a centralised database with examples of good practice in the field of GE/ESD in teacher education**

  The creation of a database with examples of good practice in GE/ESD would not only increase awareness about the topic as such but it would serve as a source of inspiration for those who would like to incorporate GE/ESD in teacher education. The centralised database could be created under the website www.globalnevzdelavanie.sk in Slovakia, https://globnev.hu/ in Hungary, https://globalnirozvojovevzdelavani.cz/ in Czechia, https://e-globalna.edu.pl in Poland which are already in use and known by many teachers. Additionally, a centralised database among the four Visegrad countries could be created. Considering their similar contexts and challenges GE/ESD faces in teacher education, a central website could be a step towards a stronger cooperation among the four countries and dedicated individuals and NGOs that operate in all four countries.

Other recommendations

- **Supporting and uplifting the role of teachers as opinion-makers and change agents in society**

  There needs to be a systematic change in the way teachers are being perceived on the societal level. If the teachers were viewed as change agents, more students would be willing to apply to teacher education programmes. In this sense, there needs to be a wider debate open about the value of the teacher profession.

- **GE/ESD must give hope**

  In times of many interconnected crises during which societies are increasingly polarised and many become demotivated or disillusioned, GE/ESD can be the tool via which hope can be found. As one respondent puts it, *"our task is also, despite all the bad things happening, to introduce narratives that provide hope—not just the dystopias"* (T6_PL).

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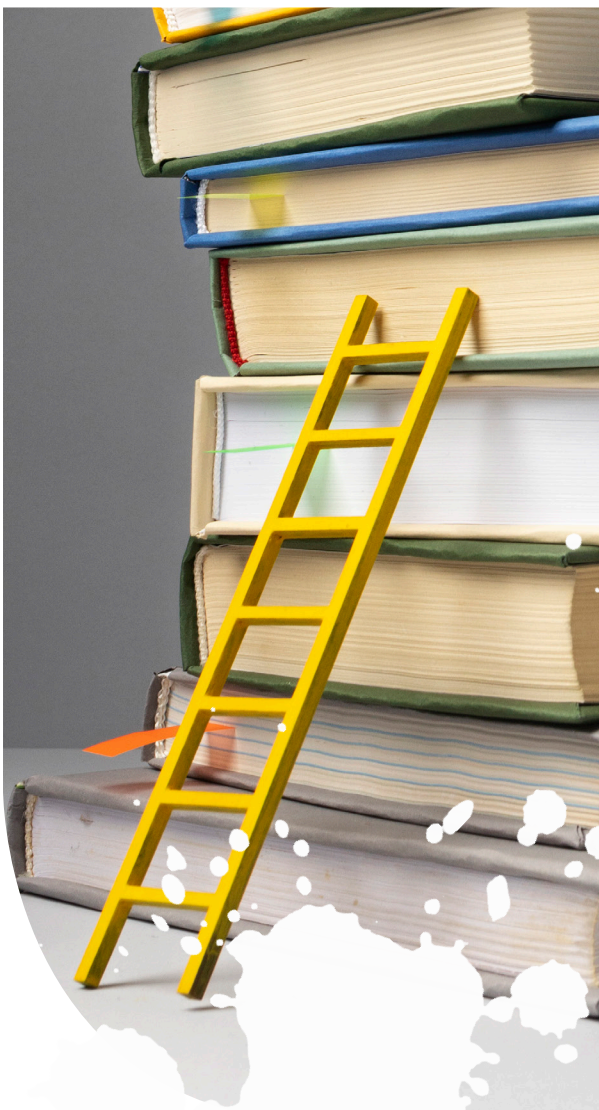

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