Transformative Learning for Sustainability and Global Citizenship: A Conceptual Exploration and Change Model for Practice[1]

Geert Leemans and Thomas Remerie[2]

Abstract

Education for Sustainable Development (ESD) and Global Citizenship Education (GCE) bring education into contact with complex, wicked issues. This article examines how transformative learning provides a useful pedagogical framework for supporting learners in critically revising deeply held assumptions, understanding system dynamics, and developing action-oriented competencies for a more sustainable and just world. In addition to a conceptual exploration of transformative learning, we present a practice-oriented change model that connects vision building, context, pedagogy, and competencies into a powerful learning environment for sustainability and global citizenship. Finally, we explore how transformative ESD and GCE can position themselves within recent policy developments in Flanders, Belgium, such as knowledge-rich curricula. We argue that transformative learning can be a valuable complement to cognitively strong education, because learners do not only learn about complex sustainability issues but also how to engage with them themselves.

Introduction

Global challenges such as climate change, rising social inequality, armed conflict, biodiversity loss, and the erosion of democratic values have sparked a growing awareness of the need for action and direction toward positive, 'sustainable' societal change. The shift toward a more socially just and sustainable society is commonly referred to as a transition (Block & Paredis, 2019). Because transitions involve profound, systemic change, they follow a complex trajectory and take considerable time to unfold.

Sustainability issues also confront us with a dilemma: the urgency of the situation calls for decisive action, yet the complexity of the problems and the absence of clear solutions leave many feeling powerless, uncertain, and concerned (Walshe & Sund, 2022). As Rieckmann et al. (2017) argue, the high complexity of sustainability transitions demands a shift in how we think and act—one that calls for a transformative approach to Education for Sustainable Development (ESD) and Global Citizenship Education (GCE). Transformative ESD and GCE can engage meaningfully with this complexity while also helping people question their own assumptions and take action toward a more sustainable and just society (Sterling, 2016; Walshe & Sund, 2022). In this way, transformative learning contributes to the United Nations' sustainability agenda (the SDGs), and specifically to SDG 4.7, which aims to promote learning for sustainable development (Arbeiter & Bucar, 2021).

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[1] This is an English translation of the original Dutch-language article: Leemans, G., & Remerie, T. (2026). Transformatief leren voor duurzaamheid en wereldburgerschap: een begripsverkenning en verandermodel voor de praktijk. *Tijdschrift voor Onderwijsrecht en Onderwijsbeleid*, 2025-2026(4), 249–261. The translation and language editing of this English version were prepared with the assistance of a large language model. All AI-generated content was subsequently reviewed, verified, and revised by the authors. The authors take full responsibility for this translation. This English version was made with the permission of the original publisher, is provided for accessibility purposes only and is not a separate publication. Please cite the original Dutch-language publication.

[2] Researchers at Vrijplaats, Artevelde UAS, Ghent, Belgium. https://sites.arteveldehogeschool.be/vrijplaats/

A transformative approach to learning for sustainability and global citizenship goes beyond simply transmitting knowledge; it also attends to learning processes that reflect education's broader mission (see also Biesta & Miedema, 2002; Schnitzler, 2020). Understood this way, transformative learning uses knowledge to empower learners to actively engage with it—both in their own lives and in the wider world. ESD and GCE speak to a broad range of people and organisations, not only within formal education but also within families, associations, adult and community education, citizen movements, local authorities, vocational training, and businesses striving to operate sustainably. Building connections among these actors is a key lever for advancing sustainable development.

Transformative learning has emerged as one of the most promising approaches within Education for Sustainable Development (Wals, 2017; Rodriguez-Aboytes & Barth, 2020; Singer-Brodowski, 2023), which makes a closer look at the work of Vrijplaats particularly worthwhile. Vrijplaats is a laboratory for transformative learning at Artevelde University of Applied Sciences (Ghent), where both authors work. In Section 1, we explore what transformative learning means and how it has evolved into a more reflective, action-oriented approach to ESD and GCE. In Section 2, we examine how transformative learning for ESD and GCE can be put into practice, taking a systems perspective that situates pedagogical methods, competencies, institutional conditions, and potential outcomes within a change model—illustrated with examples from Vrijplaats's work. In Section 3, we consider transformative ESD and GCE against the backdrop of the current policy emphasis on 'knowledge-rich curricula' in Flemish education.

1 Transformative Learning: Exploring the Concept

1.1 Transformative Learning Is Learning to Change

At its core, transformative learning is about the ability to realize change: change at the level of personal knowledge, emotions, beliefs, and frames of reference, and change at the level of the broader (societal) context and prevailing patterns of thought (Wintersteiner et al., 2024). Both levels are complementary. In a first movement, transformative learning invites learners to engage in profound reflection on their own assumptions. This occurs by confronting psychological and cultural frames of reference that learners take for granted with new information and perspectives. Insight is gained into how these frames have been constructed, feelings of disorientation or resistance are discussed collectively, and opportunities emerge to reconsider existing viewpoints (Mezirow, cited in Taylor & Cranton, 2012). Subsequently, alternative perspectives are explored that better capture newly acquired knowledge and insights, after which collective action can be undertaken to bring about change in the cultural and institutional context in which people live (Fleming, 2018). Transformative learning therefore concerns learning to initiate change oneself, but also 'learning through changing': the processes of learning and changing are intertwined (Leemans et al., 2022).

Transformative learning has its roots in the emancipatory pedagogy of, among others, Paulo Freire, yet its theoretical foundations were primarily established by the American sociologist Jack Mezirow (1978). Since its emergence within adult education, transformative learning theory has itself undergone significant transformations and has evolved into a widely recognized pedagogical approach for developing action-oriented competences for personal and societal change. It is supported by a substantial body of theoretical and empirical research and a well-developed culture of academic debate (Hoggan & Finnegan, 2023). Transformative learning is no longer limited to adult education. It has found its way into a variety of formal and informal learning contexts, including schools, businesses, volunteer work, professional networks, social work, and cooperation with the Global South, while addressing themes such as citizenship, migration, and sustainable development (Singer-Brodowski, 2023; Cockx, 2008; Formenti & Hoggan-Kloubert, 2023; Bivens et al., 2009).

1.2 Transformative Learning for a Sustainable and Just World

As noted above, transformative learning is now promoted by international organizations as the preferred approach to ESD and GCE. UNESCO's 2021 Berlin Declaration on Education for Sustainable Development is very clear about this: "Transformative learning for people and the planet is a necessity for our survival and that of future generations. The time to learn and act for our planet is now" (UNESCO, 2022).

Yet transformative ESD and GCE only take on their full significance when considered alongside the ethical, societal, and ecological issues they confront. These issues are inherently complex and uncertain, what Rittel and Webber (1973) called 'wicked problems': problems with no clear boundaries, a systemic character, strong context-dependence, and no straightforward solutions, all while generating extensive debate and controversy. What, then, are the pedagogical and societal implications for ESD and GCE?

First, this 'wickedness' entails a paradox (Wals & Jickling, 2008). On one hand, there is an urgent need for learners to contribute actively to a sustainable and just society; on the other hand, the considerable uncertainty and complexity surrounding these issues suggest that a purely instrumental approach to ESD, one in which methods and outcomes are predetermined, falls short (Wals & Benavot, 2017; Singer-Brodowski, 2023; Kioupi & Voulvoulis, 2019). A one-sided transfer of abstract expert knowledge and values, without room for reflection, is equally inadequate. As Sterling (2011, cited in Schnitzler, 2020) puts it, "the mainstream emphasis on cognitive learning, with a little values education thrown in, is simply insufficient to meet a sustainability challenge." Singer-Brodowski (2023) instead proposes a transformative, process- and action-oriented approach to ESD, one that accounts for the deep uncertainties and controversies inherent to sustainability transitions. Engaging with this process of change democratically and inclusively requires that we first learn to inform ourselves thoroughly, critically question our own assumptions and values, and remain open to other perspectives and possibilities.

Second, transformative ESD and GCE cannot simply serve as instruments for implementing a universal sustainability agenda. 'Sustainability' and 'justice' are often bound up with personal experience and specific contexts, and may carry different meanings for different people (Kemmis et al., 2014). From a transformative learning perspective, external sustainability agendas that are promoted by international governments, organizations, and interest groups, should not be treated as normative frameworks to be imposed unilaterally. Instead, learners should be challenged to reflect collectively on what such agendas mean within their own circumstances and to explore how they might be translated into practice (Wals, 2010; Wals & Jickling, 2008; Sund & Ohman, 2014). One consequence is that the outcomes of this kind of co-creative learning processes are not predetermined (Sund & Ohman, 2023). This open-endedness is not a shortcoming since it reflects the role transformative ESD and GCE play in supporting subjectification. Education as subjectification assumes that individuals learn to think and act autonomously, yet always in relation to the social and natural boundaries the world imposes. Individual freedom, in other words, cannot be separated from the challenge of 'existing in the world in a grown-up and responsible way,' which also demands an awareness of values such as justice and sustainability (Biesta, 2016; 2022).

Finally, a complex issue like sustainable development calls for an educational approach that goes beyond making the 'right' choices, and that also accounts for the role of established societal institutions—business, politics, science and technology, governments, and major interest groups (Kioupi & Voulvoulis, 2019). Understanding this institutional context is essential to giving the action-oriented dimension of transformative learning meaningful substance. Here we draw on the concept of agency (Boström et al., 2018; see also Giddens, 1984): the capacity to intervene in 'the normal flow of events' as agents of change, in interaction with the societal structures we live within. From a transformative learning perspective, Boström et al. (2018) identify two levels at which learners can direct their actions:

- **At the institutional level**, learners can critically examine the role institutions play in sustainable development. Institutional change can have a profound impact, but institutions tend to favor stability and continuity, which generates inertia and resistance. Learners may therefore look for leverage points as agents of change at this level to help drive transformation.

- **At the practice level**, transformative learning focuses more on making visible the material, educational, cultural, and social conditions that shape everyday routines in households, schools, or businesses. Learners can then take targeted steps to modify some of these conditions, creating opportunities to embed sustainable practices more firmly within the organizational contexts in which they live and work.

The institutional and practice levels interact continuously: changes in everyday social practices can gradually become embedded in institutions, while a better grasp of institutional frameworks can reveal both opportunities and obstacles for such changes.

2 Towards a Change Model for Transformative Learning

2.1 Change from a Practice Perspective

Education is not only a pedagogical concept but also a social practice, understood as an activity in which people can participate in everyday life with the intention of making a meaningful contribution to "a world worth living in" (cf. infra). Transformative learning as a social practice can therefore best be understood as educational praxis, that is: "[an] educational practice that is informed, reflective, self-consciously moral and political, and oriented towards making positive educational and societal change; it is context-dependent and can therefore take many forms" (Mahon et al., 2020).

How does this educational and social change take place? ESD and GCE can be viewed as links within a sustainable transition process that a school, organisation, or local community may undergo. The underlying theory of change is that (1) learners develop a vision for a more sustainable future, (2) gain insight into how support can be found within the broader context, (3) acquire the competencies required to initiate change, (4) engage in a pedagogical approach that enables them to develop these competencies, and (5) assess outcomes in relation to the initial situation (Kioupi & Voulvoulis, 2019). Building on Kioupi and Voulvoulis (2019), this yields the following framework:

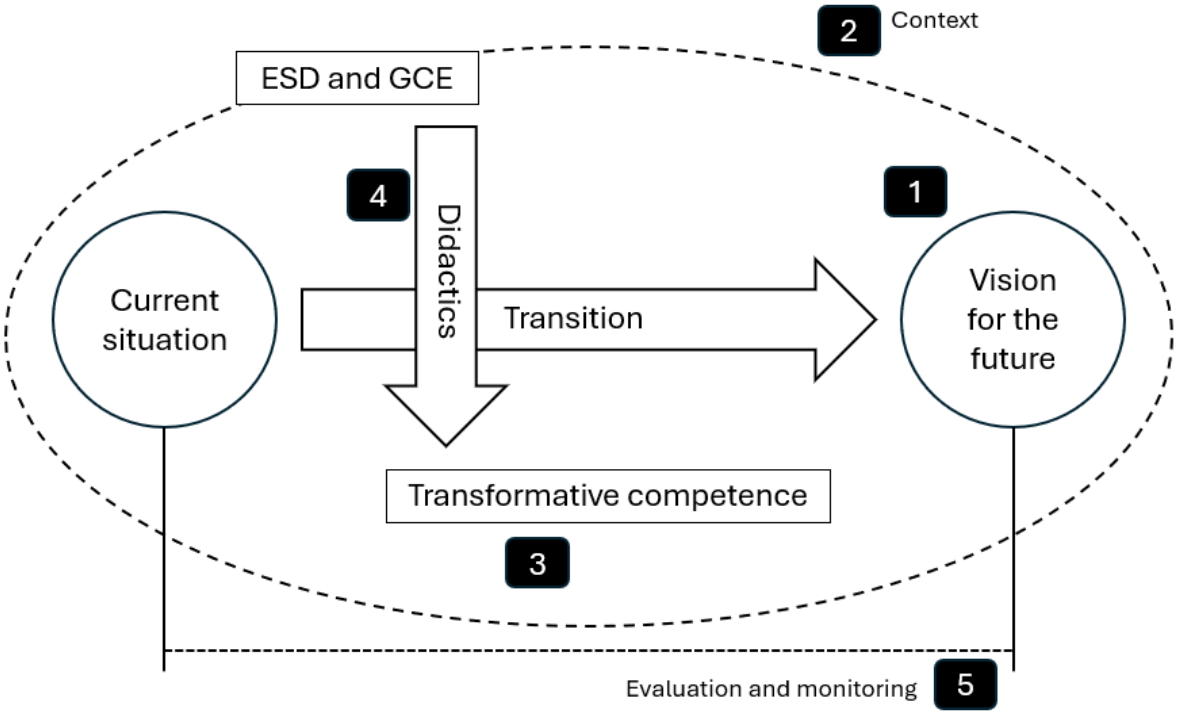


Figure 1: Theory of Change for Transformative ESD and GCE, adapted from Kioupi & Voulvoulis (2019)

The importance of a robust Theory of Change for the planning, implementation, and evaluation of transformative ESD and GCE can hardly be overstated. Equally important, however, is adopting a systemic perspective: educational interventions and their outcomes always take place within a particular context and continuously interact with it (cf. supra). Under such circumstances, change does not proceed linearly from A to B, but rather unfolds as a process, characterised by multiple feedback loops with the environment and with previous stages (Dawson, 2014; see also Boström et al., 2018). Capturing this systemic dynamic adequately requires a participatory and co-creative approach in which various stakeholders, both within and outside organisations, collaborate on transformative learning for sustainable development (Kioupi & Voulvoulis, 2019) (cf. supra).

Transformative learning as praxis also sharpens its action-oriented character. Change occurs in real life, through the everyday practices of people situated within broader institutional contexts with which they remain continuously connected (cf. supra). From a practice perspective, transformative action may seek either to strengthen practices and conditions that contribute to sustainable transitions or to redirect them when they perpetuate injustice or unsustainability (Boström et al., 2018). Such transformative action exists in a reciprocal relationship with established routines and institutions, which interact with one another in an ongoing process of innovation and reproduction.

2.2 Vision Building

Although the United Nations Sustainable Development Goals (SDGs) serve as an important contemporary reference point in the pursuit of global sustainable development, the aspiration to live a good life in a world where all forms of life—human and non-human alike—can flourish is by no means new. Reimer et al. (2023) trace this idea back to Aristotle, who more than 2,000 years ago already asked how to live a good life and what values that entails. Yet the notion of "a good life in a world worth living in" is equally well established across many other cultures and communities around the world.

From this broader perspective, one might argue that the ultimate purpose of education is to prepare people to lead a good life—for themselves, for others, and in a manner that respects the planet (Kemmis et al., 2014). As noted above, however, this good life depends on changing circumstances and contexts. As a result, what counts as ‘good’ can never be separated from people's everyday lifeworlds: it demands a practical test and is therefore always the outcome of deliberation and dialogue (Reimer et al., 2023). Educating people to make a meaningful contribution to the world (see also Biesta, 2022) thus presupposes not only abstract knowledge but also what Aristotle called phronesis: the practical wisdom, or moral prudence, needed to apply that knowledge in concrete situations (Kemmis, 2022).

For learners—pupils, students, employees, citizens, and others—it is especially meaningful to translate general sustainability principles into their own everyday practices. Ideally, a vision of sustainability and justice is developed co-creatively around a concrete issue, allowing different views and perspectives to surface (Kioupi & Voulvoulis, 2019). The social settings in which this unfolds are often referred to as transformative spaces (Beekman et al., 2025). Within a transformative space, diverse stakeholders work to build a collective form of agency capable of driving sustainable change. Beekman et al. (2025) stress the need not to avoid unequal power relations, tensions, and conflicts, but to bring them into the open for discussion—a process known as politicisation (see also Sund & Ohman, 2013).

In this context, Vrijplaats established a transformative space on behalf of the municipal authorities of Kaprijke to support the development of a climate-adaptive outdoor environment. A co-creative process was launched involving diverse stakeholders from the outset, ranging from members of the municipal executive board to childcare workers from after-school care services. Despite differences in roles and power, participants engaged as equals, each contributing—within their own areas of responsibility—to the design of the outdoor environment (Vrijplaats, 2026).

2.3 The Institutional Context

Transformative learning always takes place within the concrete settings of schools, companies, organisations, or neighbourhoods, which are themselves embedded in broader societal contexts. How can these often complex contexts be mapped clearly, so that we can (1) respond more effectively to specific challenges, and (2) embed transformative learning more firmly as a learning practice within an organisation's existing structure and culture?

Practice theorists such as Kemmis (2022) and Shove et al. (2012) point to the possibility of starting from the level of social practices—the routines that characterise people's everyday lives. Transformative learning can then aim to uncover the systemic nature of these practices and to deliberately engage with the meanings, motivations, beliefs, competencies, social relationships, and material resources that sustain them or, conversely, that can help transform them. In an educational context, this can translate into an action-oriented pedagogy in which learners develop the ability to conduct a systemic analysis of concrete (un)sustainable practices within their own school, organisation, or local community—for example, in relation to waste management, energy consumption, water use, production and consumption, mobility, and nature—and then devise strategies to make these practices more sustainable and just (cf. infra).

This approach also resonates with whole-school approaches to ESD and GCE (see also Leemans, 2022). A Whole School Approach (WSA), or more broadly a Whole Institution Approach (WIA), is less a pedagogical method than a guiding framework for fostering action competence in a contextual, participatory manner. By connecting school policy, curriculum and teaching, infrastructure, and community partnerships, the whole-school approach becomes a powerful strategy through which school staff, learners, and external actors can work together (Mathie & Wals, 2022).

Internationally, WSAs are seen as important levers for putting action-oriented, transformative ESD into practice (Mathie, 2024). The downside, however, is that the organisation-wide approach envisioned by a WSA (or WIA) often runs into institutional barriers and risks failing as a result (Gericke et al., 2024). According to Gericke et al. (2024) and Verhelst et al. (2023), successfully implementing a WSA therefore requires concrete interventions at the organisational level—among them, fostering a supportive organisational culture, sustainable leadership, a shared vision, adequate resources, open communication, and adaptability.

BLES (Outdoor Learning and Play), a Vrijplaats project aimed at greening school playgrounds, is grounded in a whole-school approach in which playground redevelopment forms part of a participatory process focused not only on infrastructure, but also on potential links with the curriculum, teacher professional development, and shared use with parents and the local community. BLES further embeds these greening projects within a broad network of knowledge institutions, landscape architects, NGOs, and public authorities that support the initiative. Together, these partners form the practice architecture that makes the greening of the playground—and the playing, learning, and living that happens within it—possible (BLES, n.d.).

2.4 Transformative Competencies

Transformative learning has evolved into a pedagogical approach that explicitly connects learning with both personal growth and societal change. A central concept within this approach is *action competence*, which refers to learners' capacity to act in informed, critical, and value-conscious ways in relation to sustainability challenges (Jensen & Schnack, 1997; Sass et al., 2020). Action competence goes beyond mere behavioural change and encompasses (1) the acquisition of relevant knowledge and skills related to sustainability issues, courses of action, norms, and critical reflection; (2) an intrinsic willingness to contribute to sustainability; (3) confidence in one's own ability to bring about change; and (4) the belief that sustainability measures can genuinely contribute to a more sustainable world. Action is not understood here as the simple execution of desirable behaviour, but as a process of critical reflection, dialogue, and shared decision-making (Mogensen & Schnack, 2010), linking personal transformation (reconsidering assumptions and values) with collective transformation (the co-creation of sustainable practices).

Over the past years, the theoretical elaboration of transformative competence has taken shape within international frameworks such as *ESD for 2030* (UNESCO), the European *GreenComp*, and the *QUEST* framework (Rieckmann, 2018; Redman & Wiek, 2021; Sass et al., 2025). These frameworks do not regard sustainability as a separate learning objective but rather as a transversal educational philosophy that permeates the entire learning experience (Bianchi et al., 2022). They define interrelated capacities, cognitive, moral, social, and practical, that reinforce one another through cycles of reflection, dialogue, and action, and thus form the core of transformative learning. Within the QUEST framework, the following competencies are distinguished, among others:

• **Systems thinking**: recognising and analysing relationships, interdependencies, and feedback loops within ecological, social, and economic systems.

• **Futures thinking**: envisioning and evaluating possible future scenarios, including their moral and ecological implications.

• **Values-based and critical thinking**: questioning underlying values, norms, and interests, and developing the capacity for moral judgement.

• **Democratic decision-making and participation**: contributing to collective decision-making processes with attention to pluralism and justice.

• **Creative problem-solving**: generating innovative and feasible solutions to complex problems through the integration of diverse forms of knowledge.

• **Interpersonal and collaborative competence**: working effectively with others on the basis of empathy, respect for diversity, and shared responsibility.

• **Reflective and metacognitive competence**: critically analysing and adapting one's own beliefs, learning strategies, and actions on the basis of experience and feedback.

• **Implementation competence**: translating insight and intention into purposeful, context-sensitive action and the realisation of change.

These competencies are not static but emergent: they continuously arise, deepen, and reconfigure through the interaction between learners, their contexts, and societal challenges. Through this dynamic interplay, learners become not only informed citizens but also critical co-designers of sustainable futures who actively contribute to societal transformation through insight, imagination, and engagement.

2.5 Pedagogy and Didactics

Transformative ESD and GCE make use of participatory, place-based, inquiry-oriented, and action-oriented pedagogies (Rieckmann et al., 2017). They move beyond so-called first-order learning, in which knowledge transmission is central, and focus on second- and third-order learning, which enable learners, as critical citizens, to seek solutions to complex problems themselves (Sass et al., 2020, 2025; Walshe & Sund, 2022). A relevant addition in this regard is transactional didactic theory, inspired by Dewey's pragmatism, which conceptualises learning as a dynamic interaction between the learner and their environment. Within this perspective, personal beliefs and contextual and institutional factors mutually influence one another (Östman, Van Poeck & Öhman, 2019).

While transactional pedagogy provides insight into the construction of meaning between learners and their environment, Design Thinking is more specifically a methodology for operationalising action-oriented learning. As a human-centred and iterative approach, Design Thinking was originally developed to address complex wicked problems (Buchanan, 1992), but it is now widely applied across diverse educational and societal contexts (Luka, 2014; Taimur & Onuki, 2022). It combines engagement with real-world societal challenges with the development of creativity, collaboration, coping with uncertainty and diversity, and making ethically responsible decisions (Munyai, 2016). Design Thinking creates space for interdisciplinary and participatory interaction in which different

forms of knowledge, scientific, social, cultural, and moral, are brought into dialogue with one another (Avsec & Ferk Savec, 2021; Benson & Dresdow, 2013).

In the sustainability education literature, three interconnected pedagogical principles are further identified as forming the core of powerful learning environments: holism, pluralism, and action orientation (Sinakou et al., 2019; Sass et al., 2024). A holistic approach integrates the ecological, social, and economic dimensions of sustainability and connects local and global perspectives as well as temporal perspectives. Pluralism acknowledges that sustainability issues are value-laden and often controversial and invites learners to articulate, confront, and revise their viewpoints through interaction with others (Mogensen & Schnack, 2010; Öhman & Östman, 2019). Action orientation, finally, focuses on translating reflection and insight into concrete and meaningful action, whereby learners experiment with sustainable actions within their own school or community (Jensen & Schnack, 1997; Sass et al., 2024). These three pedagogical principles also imply a shift in the role of facilitators: from transmitters of knowledge to co-inquirers and facilitators who jointly make sense of sustainability issues with learners and explore opportunities for action (Jeronen et al., 2016).

An example is the Vrijplaats programme Toekomstbrouwers (‘Future Makers’), in which secondary schools were supported in giving concrete form to transformative learning. Through a co-creative process, teachers designed action-oriented learning trajectories, for example around the theme of fair fashion. In an iterative process based on design thinking, students first explored their own purchasing behaviour, subsequently examined the ecological, economic, and social implications of the clothing industry, and made different perspectives visible through personas, dialogue methods, and debate techniques. Based on this exploration, they formulated a concrete challenge themselves, developed possible interventions, and tested these within the school or local community. The programme concluded with a public presentation event and collective reflection. Throughout the process, a variety of stakeholders, students, teachers, and external organisations, were involved, creating a rich practice architecture that enabled participatory, pluralistic, and action-oriented learning.

2.6 Monitoring and Evaluation

A final step in the logic of change concerns identifying the effects or outcomes of ESD and GCE as educational praxis (cf. supra). Empirically demonstrating such outcomes can make an important contribution to the legitimacy of ESD and GCE as components of school curricula or of educational activities in other organisational settings.

For the period 1999–2019, Rodriguez-Aboytes and Barth (2020) compiled a comprehensive literature review (N = 83) in which transformative learning served explicitly as the central analytical framework. Their findings show that the effects of transformative sustainability education manifest across several areas. (1) The most frequently observed effect is an increase in knowledge and practical skills related to sustainability issues, including understanding theoretical concepts, acquiring technical knowledge, and knowing how to apply sustainability principles in practice. (2) Transformative learning for sustainability leads to stronger value engagement and empathy, along with greater interest in social justice and ecological issues. (3) It builds confidence in one's ability to take action and strengthens management skills for implementing local sustainability projects. (4) It sharpens critical thinking and systems-thinking skills. (5) It fosters social learning, reflected among other things in collective action and membership in local organisations or NGOs.

Most of these effects have been identified through small-scale case studies and evaluations of pedagogical interventions. Even so, Rodriguez-Aboytes and Barth (2020) also note a growing use of quantitative approaches in ESD impact research, particularly through standardised questionnaires and survey research. Drawing on a quantitative survey of 440 students across 15 schools, Sass et al. (2023) conclude “a student-perceived action-oriented approach seems to enhance students’ confidence in the impact of SD-actions. We conclude that our evidence supports the claim that an action-oriented educational approach is effective.” Olsson et al. (2022) examined the effectiveness of ESD in fostering action competence among 760 Swedish upper-secondary students using a control-group design. ESD, conceptualised in terms of holism and pluralism, was found to contribute significantly to students' self-reported action competence. The results further suggest that ESD is especially

effective at promoting action competence when enough time is available for implementation and when teachers receive adequate training in ESD.

Developments are also taking place at the methodological level. IMP>ACT (Impact Assessment for Action Competence) is a Horizon Europe project in which 11 partners from seven European Member States are developing an assessment framework for action competence and action-oriented pedagogy, applicable across a range of sustainability themes and educational settings (cf. supra). The framework includes practical, scientifically validated measurement instruments, clear indicators and methodologies, and a user-friendly guide (IMP>ACT, 2026). In 2026, this assessment framework is also being piloted in Flanders, including through survey research in agricultural and horticultural education examining action competence for sustainable soil management.

From the perspective of everyday practice, where learning processes are often complex and context-dependent, a process-oriented approach to impact research may also prove valuable. Such realist or theory-driven models (see also Pawson & Tilley, 1997) aim to build a better understanding of what works for whom, and under which circumstances. This perspective is echoed in research approaches that treat scientific and practitioner perspectives as equally valuable for generating deeper insight into how learning processes unfold in practice (Van de Ven, 2007). Assessing the impact of action-oriented ESD therefore seems to benefit from drawing on more than one research approach: large-scale surveys offer an overview of trends across populations, while smaller-scale case studies can deepen our understanding of how ESD shapes targeted competencies, and of how different contexts moderate these processes.

3 Transformative Learning in a ‘Knowledge-Rich Curriculum’

In recent years, Flanders, like many other European countries, has seen a clear shift in educational policy, marked by a renewed emphasis on cognitively strong education and the development of a knowledge-rich curriculum. According to Muijs et al. (2025), who were tasked with preparing the new Flemish minimum attainment targets for primary education, the proposed knowledge-rich curriculum should encompass not only (1) factual knowledge and mathematical skills (declarative knowledge), but also (2) procedural knowledge (the ability to apply knowledge across a variety of contexts) and (3) learning-supportive attitudes. This knowledge-rich curriculum, moreover, rests on a broad knowledge foundation that spans not only language and mathematics but also scientific, historical, technical, and spatial knowledge. Within this knowledge-oriented policy discourse, education's role in personal development is also acknowledged, though it is treated primarily as an attitudinal element supporting improved learning outcomes and social mobility (Muijs et al., 2025).

This raises the question of how transformative Education for Sustainable Development (ESD) and Global Citizenship Education (GCE) relate to this renewed emphasis on knowledge. While the knowledge-rich curriculum currently occupies a prominent place on the Flemish educational agenda, transformative approaches to ESD and GCE sit mainly within the international policy frameworks of UNESCO, UNECE, and the European Union. These two agendas have largely developed independently of one another, emerging from different concerns and grounded in different frames of reference.

Transformative ESD and GCE are primarily concerned with how learners can engage with global wicked problems such as climate change, poverty, environmental degradation, and conflict. The current discourse around the knowledge-rich curriculum, by contrast, gained momentum largely in response to disappointing results on more tame problems (see also Rittel & Webber, 1973; cf. supra)—mathematics and Dutch-language proficiency in international assessments such as PISA and PIRLS. In the explanatory documents accompanying the new primary education attainment targets, citizenship and sustainability once again receive greater attention, as does critical thinking. Muijs et al. (2025a) and Muijs et al. (2025b), however, stress that critical thinking cannot be developed independently of specific knowledge domains such as geography, history, or science and technology—including

in relation to so-called open problems. Even so, little guidance is offered on how this might contribute to the action competence that ESD and GCE seek to foster.

Yet transformative learning also treats knowledge as an essential component of a critical, action-oriented approach to wicked problems. Mezirow (2009), for example, points explicitly to the importance of instrumental learning—the acquisition of knowledge grounded in scientific inquiry, based on predictable outcomes, and characteristic of specific disciplines. Holdo (2023) highlights the importance of intellectual tools: the concepts, ideas, and theories that underpin our understanding of complex issues such as justice and inequality. Alongside instrumental learning, however, a transformative learning approach also requires communicative learning, which enables individuals to engage in dialogue with others, understand their perspectives, and reflect on how those perspectives shape their own ways of thinking. Transformative learning further encompasses discussing emotions, critically examining structures and power relations, experimenting with and refining actions, building self-confidence, and developing social skills (Holdo, 2023; Mezirow, 2009; cf. supra). All of these elements—not knowledge alone—contribute to critical reflection and action-oriented learning.

Flemish students, moreover, also perform relatively poorly on knowledge related to sustainability issues. This is evident from the 2023 TIMSS science assessment of fourth-grade pupils (ISCED Level 1, Grade 4), where students achieved an average score of 489 points for environmental knowledge, placing Flanders in the lower half of participating countries worldwide. As in other international assessments, lower socio-economic status proved a significant predictor of lower knowledge scores (Bookbinder et al., 2025). International research further shows that young people are deeply concerned about ecological crises: 59% reported being extremely worried about climate change, 45% said it negatively affects their daily lives, and 83% believed humanity has failed to properly care for the planet (Hickman et al., 2021).

Feelings of powerlessness and eco-anxiety can be eased when young people are given opportunities for meaningful action (Singer-Brodowski et al., 2022)—precisely what transformative ESD and GCE seek to achieve. Yet findings from international research offer little encouragement here. UNESCO research (2021), for instance, found that although the vast majority of UNESCO Member States address environmental issues within their education policies, they continue to place a predominantly one-sided emphasis on factual knowledge, paying comparatively little attention to socio-emotional and action-oriented competencies. Likewise, PISA 2018 results showed that sustainability issues are part of the compulsory curriculum in the large majority of OECD countries, and that students consider sustainability an important topic—yet only slightly more than half felt they themselves could contribute to solving these challenges (Schleicher, 2021).

Conclusion

When the concept of transformative learning is situated within the contemporary challenges facing education, it becomes clear that it can no longer be understood as a purely individual matter. Within ESD and GCE, transformative learning theory has evolved into a broader way of understanding how students, teachers, schools, and other organisations make sense of the complex and ambiguous issues that characterise sustainability transitions:

- Sustainability transitions give rise to complex problems. For learners, it is crucial to engage with this complexity constructively while also becoming capable of initiating change themselves. Transformative approaches to ESD and GCE therefore embrace an ‘open-ended’ perspective. Rather than determining in advance ‘how students should behave sustainably,’ the aim is for learners, as free and responsible subjects, to learn to position themselves in relation to the world and to act accordingly. Here, the core concepts of Mezirow's transformative theory—knowledge, critical reflection, perspective transformation, and action orientation—remain the guiding principles.
- Holism, pluralism, and action orientation make learning a transformative process in which learners acquire knowledge, critically question their worldview, reconsider their position within complex systems, and act on these insights. Design-based and inquiry-based learning—supported by approaches such as design thinking, transactional pedagogy, or action research, and grounded in applying knowledge to authentic settings—

fosters the development of action competence. Action competence refers to learners' capacity to make informed decisions in response to complex issues. The emphasis falls not so much on displaying the 'right' behaviour, but on acquiring factual knowledge, knowledge of possible courses of action, intrinsic motivation, confidence in one's own abilities, and the belief that one's actions can make a difference.

- Transformative learning achieves lasting impact only when embedded within the broader functioning of a school or organisation. Whole-institution approaches provide such a framework, connecting vision development, school policy, pedagogy, infrastructure, and external partnerships. Within such settings, sustainable change is never a linear outcome of competence development; rather, it emerges when learning processes interact with existing routines, policy frameworks, infrastructures, and organisational culture.
- Developing a robust theory of change that explicitly articulates the relationships between vision, competencies, pedagogy, institutional conditions, and outcomes also gives us a compass for planning and implementing concrete transformative learning activities.

Yet, how relevant transformative learning may be, a shift back from learning for sustainability and citizenship (including global citizenship) to learning about sustainability and citizenship seems a real risk. A recent review of the English knowledge-rich curriculum points in that direction: although subject-specific knowledge is seen as crucial for preparing students for a changing world, the English curriculum currently provides insufficient knowledge and skills for students to actively help shape that world, particularly around citizenship and sustainability (Francis, 2025). Given the strong affinity with the English model, it is not inconceivable that Flanders comes to a similar conclusion in the near future. This concern is reinforced further by expectations that a lack of time, funding, and support will make schools either decide not to engage in action-oriented ESD and GCE projects altogether, or to discontinue existing ones (Hodson, 2024). Whether the autonomy of schools to set their own pedagogical priorities will be enough to counter this trend, remains to be seen.

A thorough analysis of the differences and points of convergence between the 'knowledge-rich curriculum' and 'transformative learning' lies beyond the scope of this contribution. The discussion above, however, suggests there may be more common ground between the two approaches than is often assumed, and further research into whether and how they might be aligned is therefore needed. We further conclude that knowledge is necessary for transformative learning, but not sufficient on its own. This is because transformative learning is concerned above all with the complex issues that learners inevitably encounter, and that often trouble them. From this perspective, it seems appropriate not only to ask which pedagogical approaches best support the acquisition of knowledge, but also to consider how sustainability and citizenship (including global citizenship) can be addressed in an action-oriented way through collaboration among different actors, including subject teachers. Researchers, practitioner-researchers, and educators can support schools, as well as other actors such as NGOs, social initiatives, youth organisations, businesses, and policymakers, in answering this question as they put sustainability and citizenship into practice.

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