



POLICY BRIEF

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Quality Education for Sustainable Development *A priority in achieving sustainability and well-being for all*

Main Proposals and Messages

- 📶 This Policy Brief argues that the foremost priority for educational development should now be on *enhancing quality*, transcending past objectives focused primarily on access and attainment (i.e., Education For All (EFA) and the Millennium Development Goals).
- 📶 Enhancing *Quality Education* should become a cornerstone of both the Sustainable Development Goals (SDGs) and the post-2014 Global Action Programme on ESD for quality education is essential for further progress across all dimensions of sustainable development.
- 📶 Enhancing *Quality Education* can be achieved through integration of a holistic perspective on education for sustainable development (ESD) and use of measurable learning targets/outcomes.
- 📶 This Policy Brief presents an ESD Learning Performance Framework (LPF), addressing both learning processes and educational contents, that provides a roadmap for how stronger ESD can promote greater educational quality overall.
- 📶 The effectiveness of *Quality Education for Sustainable Development* could be significantly enhanced through applying the LPF to:
 - ✓ Support *curriculum developers* in designing holistic and relevant school curricula that includes transformative educational and teaching approaches;
 - ✓ Strengthen *teachers* competency for ESD through training on the LPF and its application;
 - ✓ Guide *school administrators* to develop safe learning environments that serve as models of sustainability and support experiential education;
 - ✓ Encourage *education policy makers* to consider transformative learning approaches in educational reforms and the integration of ESD into standard educational policy.
- 📶 The LPF therefore can facilitate well-informed educational policy making, curriculum design, course content, teaching pedagogies, and learning environments.
- 📶 The LPF also provides a basis for developing measurable, qualitative learning targets and progressive indicators for assessing global progress on DESD, the Global Action Programme on ESD and the SDGs, as well as monitoring educational performance at national and local levels.



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I Introduction

After considerable increases in educational access and attainment¹, it is now very feasible to focus on quality education, in contrast with past views that it remained an unrealistic goal. Enhanced quality education is necessary for further progress across all dimensions of sustainable development. It not only makes people more employable but also gives them skills and values to address the tensions between human development and planetary boundaries. The UN Decade of Education for Sustainable Development (DESD) promoted embedding ESD into all spheres of learning, emphasising quality education as a priority of wider educational reform. Although quality education has been advocated in several global education initiatives, difficulties in quantifying its achievement resulted in access and attainment continuing as the main targets for concrete actions. This Policy Brief argues that quality education should now be the main priority of global initiatives such as the post-2014 Global Action Programme on ESD and the Sustainable Development Goals (SDGs).

Education for Sustainable Development (ESD) is largely synonymous with quality education but requires far-reaching changes to the way education functions in modern society. How to structure and implement quality education for sustainable development is a key challenge. Another challenge is that systematically assessing the effectiveness of learning

performance from ESD practices remains elusive, especially how effective learning performance contributes to sustainability.

The policy brief presents an *ESD Learning Performance Framework* (LPF) addressing these challenges and demonstrates how ESD can be practically implemented and assessed. It shows that quality education can be enhanced by identifying the key ESD elements, including both educational contents and learning processes, and incorporating them into educational development through use of an integrated, holistic framework. Recommended users of this *ESD LPF* include education policy makers (national/regional education officers), practitioners (curriculum developers), teachers and educators, and local school administrators. The necessity to address the roles of so many actors reveals the expanded scope and complexity in implementing both ESD and quality education.

Achieving a future sustainable development agenda requires a strong SDG addressing the centrality of education in enabling human well-being. Such an education goal needs to simultaneously address both the advancement of quality education and education for sustainable development. The LPF presented in this work provides a roadmap for bridging these two educational endeavours.

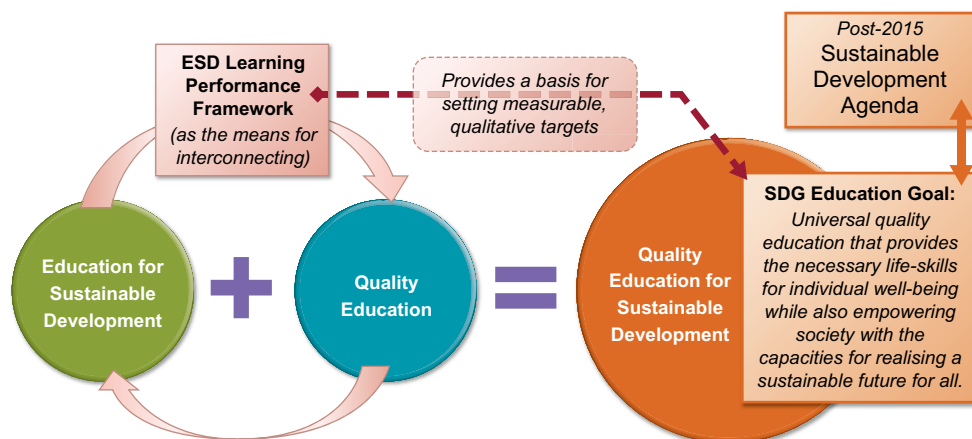


Figure 1 A schematic representation of the proposed relationship between ESD and Quality Education (through application of the LPF) in the context of the SDG on Education

¹ UN, 2013a; UN, 2013b; Sustainable Development Solutions Network, 2013; Canadian International Development Agency, 2013; United Nations Secretary General, 2012.

The policy brief is structured as follows: Section 2 emphasises the importance of quality education and its progressive role in transcending quantitative goals to achieve a more holistic educational development. Section 3 discusses the integration of a holistic ESD perspective into quality education and the significant linkages between these two. Section 4 details the development of the ESD Learning Performance Framework (LPF) and its dual emphasis on effective

educational contents and learning processes. Section 5 examines how the elemental characteristics of the LPF can be used to support quality improvements in education. Section 6 demonstrates how the LPF promotes linkages between achieving both the objectives of quality education and ESD. It also provides several sets of recommendations for improving ESD learning performance through the application of the LPF by various target users/actors.

2 Quality Education: A Pathway for Global Education Reform

The centrality of education in achieving social development and human well-being that is sustainable is well established. Since the launch of the 2000 Dakar Framework for Action on Education for All (EFA) including six goals with measurable targets, and coinciding with the Millennium Development Goals (MDG) 2 and 3, significant increases in both educational access and attainment have been achieved, although further work to meet all goals is still required.

The traditional focus on access and attainment has generally overshadowed important aspects like the contents of education, application of learning pedagogies, and adequate teacher training. A debate on quantity vs. quality of education has arisen due to continuing challenges including: 1) poor student achievement in spite of the increase in enrolment rates (over 123 M youth aged 15-24 years lack basic literacy skills), and 2) the lack of current education systems to provide students with the needed skills and knowledge for adapting to a future facing uncertain challenges and change (UN, 2013a). Hence, there is a need to transcend academic achievements and cognitive skill development based mainly on memorisation/rote learning and to include learning on non-cognitive, affective skills in addition to educating for social cohesion, global citizenship, creativity, and social and emotional development (UNESCO BKK, 2013). Enhancing the focus on quality education is necessary, and it is argued that efforts in this regard should be accompanied by policies to enhance principles of quality education through 1) availability of educational institutions and programmes, 2) accessibility by all with full inclusion of the most marginalised populations, 3) acceptability of form and substance (ensuring that the

content of education and process of teaching are relevant and of good quality), and 4) adaptability with regard to changing needs of learners and society (GCE, 2013).

Although the core educational principles of quality education are universal, their application must be adapted to different contexts as the measure of educational success depends on variable criteria including what students and teachers bring to the learning arena, the appropriateness of teaching/learning approaches, and the end-use of the acquired education by the learner. Quality education should therefore take into consideration several important factors:

- the pre-learning world-view and psychology of the learner (e.g. a child's home conditions),
- the competence of the teacher,
- interactions with various social actors (namely individuals, groups, the community and society),
- the learning environment and educational setting,
- the content of the learning materials and types of teaching/learning processes,
- knowledge construction dynamics and its relevant application,
- the mode(s) of learning/teaching assessment,
- the dynamism of culture and languages, and
- individuals' values in relation to sustainable lifestyles that promote equality.

Quality education provides added value as it produces significant benefits for human and social development, often with lower resource costs (Didham and Ofei-Manu, 2013). At the core of the pursuit of quality education, the focus should be on strengthening learning performance and providing learners with the capacities to address the challenges of a sustainable future for all.

3 Integrating an ESD Perspective in Pursuit of Quality Education

The Bonn Declaration on ESD (2009) highlights the importance of empowering people through education, and it states that “education should be of a quality that provides the values, knowledge, skills and competencies for sustainable living and participation in society and decent work” (UNESCO, para. 4:1). A holistic approach to quality education provides capabilities to address numerous global sustainability crises. There are typically two distinct pedagogical interpretations of ESD. The first is ESD as a means to transfer appropriate sets of knowledge, attitudes, and values to the learner. The second is to equip people with the needed capacity to make conscious, pro-sustainability choices in their daily lives and to cooperatively explore these issues through collective discourse as a means to transform mind-sets and lifestyles (UNESCO, 2009). In the second interpretation, ESD also aims to encourage reform of traditional educational pedagogy for quality enhancement.

Currently, while newly industrialised countries reaffirm the importance of educational access and attainment and the need for continual improvement, a number of high-income, developed countries have now moved beyond the EFA and

MDG agendas to address qualitative improvements to their education systems. These improvements aim to develop learners’ skills for the future society and economy, and to demonstrate competitiveness in international performance based assessments like the Programme for International Student Assessment (PISA). However, education that emphasises job prospects and social skills without including sustainability (e.g. 21st century skills education and PISA) is unlikely to contribute to sustainable development and may even worsen current challenges.

Therefore, quality education that integrates an ESD perspective and includes measurable learning targets and outcomes should become a cornerstone of the post-2014 Global Action Programme on ESD and the post-2015 Sustainable Development Goals (SDGs) as a pathway for global education reform and improvement. In the Asia-Pacific region, the application of innovative curriculum contents and learning objectives, progressive teaching approaches and educational theories, sustainability-oriented teaching materials, practice standards and auditing mechanisms for ESD teaching are much needed (Didham and Ofei-Manu, 2012).

4 The ESD Learning Performance Framework (LPF)

The authors developed a robust Learning Performance Framework to link quality education with ESD using a holistic perspective that considers not only what we learn but also how we learn and make meaning of the world around us. The ESD learning performance framework (LPF) is based on a two-year research project that identified the essential elements of effective ESD practice by analysing a number of relevant educational theories and testing them within the context of several case studies.

Previously, it has been difficult to monitor and evaluate the effectiveness of ESD practices (and their corresponding contribution to SD) due to the absence of a measurable, actionable framework that brings the elements together. This ESD LPF was designed to identify these elements, combine them into an actionable framework, and provide a working definition to the concept of ESD. The LPF was developed through a cyclical process of

action-reflection between investigation of practice cases and reflection on existing educational theories – a process deemed central to sustainability learning.

This framework defines effective ESD practice based on four elements of ESD learning performance, also distinguishing between learning processes and educational contents. Learning processes include *progressive pedagogies* and *cooperative learning relationships*, while educational contents include *sustainability competencies* and *framework of understanding/world-view* (see Figure 2). The LPF can thus serve as both a concrete guide to designing and implementing effective ESD and also provides the basis for developing progressive indicators for monitoring the qualitative achievements of ESD. Additionally, the LPF provides an operational model for enhancing quality education through the integration of a holistic ESD perspective into the wider pursuit of educational development.

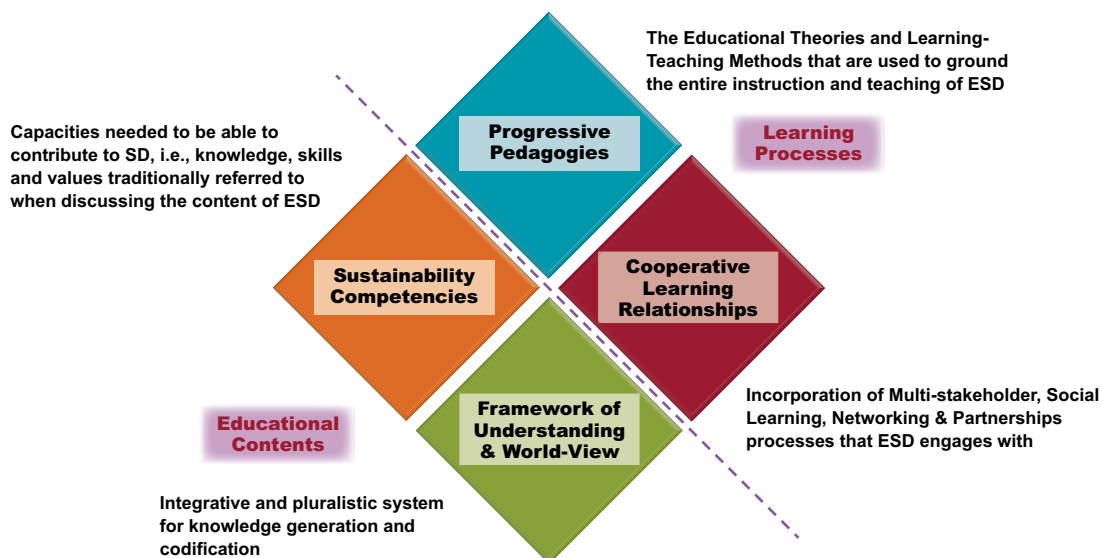


Figure 2 The ESD Learning Performance Framework

5 The LPF’s Elemental Characteristics and Link with Quality Education

This section outlines the four educational/learning elements that encompass the ESD LPF.

A. Progressive Pedagogies (PP)

Progressive Pedagogies (PP) denotes the integration of a collection of teaching approaches under the ESD framework to extend practice beyond individual theories, methods or tools. This aims to support increased awareness about the unsustainable nature of current economic and social processes as well as the impacts of individual and collective behaviours on these processes. PP also looks at the theoretical and practical aspects of different issues while creating the necessary space for learners to be actively involved in the process of learning and *knowledge making* including cooperative inquiry and problem-solving (Columbia University, 2012). The PP approach, rather than viewing students as passive receivers of abstract knowledge, places the learners at the centre of the world they are studying to facilitate an active learning

process involving critical reflection and testing of information in order to contextualise knowledge in relation to practical, real world application.

Aspects of PP include: 1) emphasising the psychosocial dimensions of teaching/learning, 2) stressing the value of experience from active participation in research and community-based learning as well as the individual learner’s personal experience, 3) encouraging students’ critical reflection on teaching processes and organising teaching to focus on real-world problem solving, 4) enhancing learners’ ability to analyse and comprehend how their own actions and behaviours are influenced by and impact on these processes, 5) promoting learning aimed at overcoming the anthropocentric nature of traditional pedagogies, and 6) creating a curriculum that include materials both meaningful to the learners and also to the health of the planet (Columbia University, 2012 and Gadotti, 2010).

TABLE 1 The Characteristics of Progressive Pedagogies

- Critical reflection & practice and problem solving,
- Action/experience-oriented, student-centred learning,
- Knowledge production through iterative interaction,
- Life-long learning,
- Cyclical process of collective (cooperative) inquiry.

B. Cooperative Learning Relationships (LR)

Cooperative Learning Relationships (LR) refers to the inclusion of group learning, networking, collaboration, partnerships and collective knowledge generation as an important educational component of ESD. It includes educational methods and approaches such as social learning, communities of practice and collaborative/cooperative inquiry. Usually involving learners who have a common interest in a subject or area with no immediate solutions, strong emphasis is placed on multi-stakeholder participation, collaborative relationships, and sharing ideas and strategies over a period of time that create opportunities for reflexive and inclusive building of trust to develop solutions and innovations. LR can provide methods such as reflective fact-finding that are beneficial for investigating the types of unknown factors inherent in sustainable development. LR pedagogy enhances appreciation for the interconnectedness of sustainability’s various dimensions.

Aspects of LR include: 1) creating common platforms for people to come together in an open, respectful manner to examine questions which do not have easy answers, 2) promoting public participation to harness the power of social capital for creating change, 3) acknowledging the power of collaborative action for harnessing differing strengths of individuals, 4) adopting systems thinking to understand the dynamics of change in complex interactions, 5) seeking to leverage positive interdependence through collective responsibility, members rely on one another to achieve the overall goal as the sum of their collective parts, 6) ensuring accountability of all group participants to accomplish their share of the work, 7) promoting appropriate use of collaborative skills through development and practice of trust-building, leadership, decision-making and conflict resolution, and 8) enabling group processing by team members as they set common goals/objectives, periodically assess their achievements, and identify necessary changes to increase effectiveness (Wals, 2011).

TABLE 2 Characteristics of Cooperative Learning Relationships

- Inclusion and internal network structure for interaction (among social networks) and latitude given for democratic debate on the framing and definition of the issues at stake,
- Group processing to establish and manage systems of knowledge and making sense of information,
- Participation and power sharing, shared ownership/commonality,
- Clear definition and purpose of roles,
- Accountability of individual/groups,
- Positive interdependence and trust building,
- Opportunities for reflexive moments and discourse,
- Situatedness and social skills.

C. Sustainability Competencies (SC)

Sustainability competencies (SC) articulates the qualities/attributes that learners need to develop to engage in sustainability issues and contribute to SD. The basis of SC is the possession of relevant knowledge and the ability to think, act and take responsibility. Therefore, SC is understood as one’s capacity to engage with other people, as well as with one’s community and society in meaningful ways on SD. As an element of ESD learning performance, SC comprises a diversity of knowledge, skills and values, and is

traditionally what is mainly referred to when discussing the contents of ESD.

Knowledge competencies for SC include the discipline-specific content. The list is inexhaustible with the following in Table 3 as a partial representation; the same is also true for **Skills** associated with ESD. Skill-based learning outcomes for ESD emphasise learning processes as much as fact-based learning. **Values** supportive of ESD provide a basis for a critical though often difficult-to-measure affective dimension of ESD.

Knowledge	Skills	Values
<ul style="list-style-type: none"> • Climate Change, • Disaster Risk Reduction, • Sustainable Consumption and Production/ Education for Sustainable Consumption, • Indigenous Knowledge, • Information and Communication Technologies (ICT) and use in ESD, • Well-being, Development & Environmental Quality, • Resilience and Socio-ecological Systems. 	<ul style="list-style-type: none"> • Critical and complex thinking, • Seeking alternative solutions, • Real-world problem-solving, • Future-mindedness, • Adapting to and advocating for change, • Social action, collaboration and cooperation, • Conflict resolution, negotiation, creativity and imagination, • Interdisciplinary and trans-disciplinary research skills, • Adaptive learning, • Contextualisation of issues, • Personal introspection, visioning and buy-in to identifying change and adapting to it, • Systems thinking and thinking that is focused on values. 	<ul style="list-style-type: none"> • Respect, care and empathy, • Charity, social and economic justice, • Citizenship and stewardship, • Empowerment and motivation, • Commitment, cooperation and compassion, • Self-determination and self-reliance, • Resilience, optimism and tenacity, • Self-restraint, passion and emotional intelligence, • Assertiveness and persuasiveness, • Authenticity and ethical self-awareness, • Competence and curiosity, • Interdependence.

D. Framework of Understanding and World-View (WV)

Framework of Understanding and World-View (WV) addresses the prevailing system for knowledge generation and codification that looks at the types of contextual frameworks and schemas through which individuals shape meaning from diverse knowledge and understand reality. In the context of ESD, WV takes on an inter/trans-disciplinary and integrative nature, and it is associated with paradigm shifts. Our way of interpreting, learning and taking action on environmental, social and sustainability issues therefore is greatly influenced by the lens through which we observe and make meaning of these issues. Worldview is a complex, and sometimes detached, set of beliefs, ideologies, and knowledge structures that guide how we interact with and make meaning of the world around us (Guba, 1990). In ESD, systems thinking, cross-boundary thinking, integration and other similar concepts shape people’s world-view and provide an opportunity to critically reflect and question present ideas and concepts about nature and the environment and our individual contributions to their deterioration or advancement.

Aspects of WV include: 1) generating explanations for whole systems, incorporating experiential understanding and focus on emergent properties of the whole rather than isolated parts, 2) structuring knowledge-inquiry to obtain synthesis and holistic understanding based on integrating different disciplinary perspectives, 3) providing important insights into how whole systems generally embody emergent properties (characteristic of systems) and therefore offer a understanding of why a system is greater than the sum of its parts, 4) perceiving problems in their entirety and how the various parts interrelate across conceptual boundaries, 5) examining ideas and assertions critically and investigating asymmetric power relations as well the modes of power legitimisation, 6) advancing learners’ ability for critical inquiry and self-reflection as they examine the world through the lens of sustainability, 7) identifying differences in relative terms and how object consciousness develops in social contexts, and 8) recognising patterns through observable repetitions of situations that have a familiar feel, be it activity or design (Jones et al., 2010; Springett, 2010).

<ul style="list-style-type: none"> • Holism and integration – focusing on the whole rather than the parts, • Systems perspective or whole systems thinking, • Interdisciplinarity and cross-boundary approaches, • Cultural relativism and social constructivism, • Pattern recognition and system design from patterns to details (i.e. synergy).

The ESD LPF holistically combines under a single framework several related yet distinct elements that can guide progress in teaching and learning methods, activities and outcomes of ESD practice. It thus synthesises a wide range of frameworks and concepts of ESD that can support policy processes as well as guide actual implementation. The application of the LPF to future ESD initiatives will help translate those initiatives to local contexts and scale best practices, ultimately contributing to actual social change.

The ESD LPF additionally provides the means for bridging the two important educational endeavours of achieving quality education and education for

sustainable development into one common path for realising both sustainability and well-being for all. The relevance of quality education will be in its ability to provide learners with the necessary life-skills for individual well-being while also empowering society with the capacities for realising a sustainable future for all. It is for this reason that a future SDG on education must work to interconnect *quality education for sustainable development*. Furthermore, the LPF provides a basis for concrete measurability and evaluation and can help strengthen assessment of both educational programmes such as the Global Action Programme on ESD and educational components of development agendas such as the SDGs.

6 Recommendations: Improving Quality in ESD Learning Performance

Several recent education-related consultations and publications on the post-2015 development agenda (and SDGs) and the Global Action Programme on ESD underline the need for improvements in quality education. The following steps are integral to achieving the objectives of quality education:

- 1) Application of a well-developed curriculum;
- 2) Improvement and expansion of teacher training to yield ESD competent teachers;
- 3) Establishment of safe and effective learning environment; and

- 4) Transformative and cooperative approaches to teaching and learning.

These steps are important because ultimately, successful education is judged by what, how, where and with who people learn. The realisation of ESD-related quality education, particularly in the formal education sector, will therefore require fulfilling these objectives. The recommendations that follow identify the correlation between the ESD LPF and these quality education objectives.

TABLE 5 Linkages of the LPF's elements with the steps for quality education and key actors/users

Steps for achieving quality education	The four elements of effective learning performance			
	Sustainability Competencies (SC)	Progressive Pedagogies (PP)	Cooperative Learning Relationships (LR)	Change of World-View (WV)
Well-developed curriculum	✓			
Improving the quality of teaching		✓		
Establishing effective learning environments			✓	
Inspiring transformative learning				✓
	Curriculum developers, contracted authors	Teachers of ESD at all levels of education; education officers/ administrators	Regional and local school administrators/ managers	Policy makers, practitioners, educators, teachers, local school managers.
Relevant/Target Actors (at each intersect)				

Connecting Target Actors with relevant Education Objectives and LPF Elements

The ESD LPF can facilitate the integration of an ESD perspective into the pursuit of quality education (and also into the SDGs). This requires the involvement of several key actors, including:

- Educational policy makers such as national or regional education/ESD officers,
- Practitioners such as curriculum developers and contracted textbook writers,
- Teachers and educators at all levels of education from elementary to university,
- Local school administrators/managers of education, and
- Researchers, evaluators/indicator developers and practitioners.

It is important to note that all of the elements of the LPF should be implemented in parallel since all are interconnected. However, it is also possible to identify each element supporting one of the four steps in achieving quality education (as shown in Table 5). For example, a well-developed curriculum should include both holistic content (SC) and a progressive process of teaching (PP). Furthermore, inspiring transformative learning requires all four elements to be successful even though this occurs at different levels of intensity in different scenarios. Thus, good cooperation is necessary between all of the main actors to achieve this.

Tables 6-9 provide the details of the connections between the educational objectives and the LPF elements. Recommendations for meeting the objectives required for achieving ESD-linked quality education and identification of the relevant target actors for each objective are also presented.

TABLE 6 Educational objective: Application of a well-developed curriculum	
Target Actors	Curriculum developers and contracted authors.
Relevance of objective for achieving quality education	A well-developed curriculum with rich content, clear learning methodologies and progressive learning objectives/goals is critical for quality education.
Main LP element and its relation to objective	Sustainability Competencies (SC): the presence of knowledge, skills and values components of SC in a curriculum is indicative of its quality.
<p>Recommendations: Curricula (at both national and local levels) should incorporate the LPF. Curriculum developers should therefore ensure that:</p> <ul style="list-style-type: none"> • The curriculum structure and content, in conjunction with ESD strategies, enshrine the key elements of progressive pedagogies (e.g. student-centered, active, experiential, collective inquiry, cooperative and social approaches, etc. see 5.A and B). This should aim at fostering capacities for life-long learning, including skill-based learning using a “life-cycle” approach focusing on the educational needs throughout the stages of the learners’ life. Learners should be prepared for secure employment and livelihoods. • The teaching dimension of the curriculum establishes clear and progressive learning objectives and goals, which should steadily develop a sensitive ethic for sustaining global and local socio-ecological systems. • The curriculum contains learning approaches and materials that promote transformative learning. It should also make appropriate connections among the LPF elements and their respective characteristics. • Local relevance and cultural appropriateness is included in the ESD curriculum content. • Clear directions on assessment approaches and the contents for assessment, especially the use of formative and summative assessments at the classroom level, are provided. • The curriculum utilises new methods of knowledge and skill exchange such as multi-media and information and communication technology (ICT), experiential-based and community-based learning and also skill sharing. • Regarding educational content, the flexibility and dynamism of ESD should be highlighted to support constant evolution of content in response to the addition of more themes/topics relevant for sustainability with the passage of time/situation. Keeping abreast with the sustainability discourse is therefore crucial. • Good coverage of knowledge-based competencies relevant to SD and ESD (see 5.C). Value-based education covering both value acquisition and the ESD world view should be particularly emphasised. <p>Contracted textbook authors should be familiar with the LPF and use it to frame textbook contents.</p>	

TABLE 7 Educational objective: Improvement and expansion of teacher training	
Target Actors	Teachers, Educators and Practitioners of ESD at all levels of education.
Relevance of objective for achieving quality education	Teacher competency building through training on pedagogies and learning methodologies (including holistic or interdisciplinary teaching perspectives) is a critical component of quality education.
Main LP element and its relation to objective	Progressive Pedagogies (PP): equipping teachers on the formulation of appropriate content and use of progressive teaching and learning approaches will contribute to improvement in teaching.
<p>Recommendations: Teachers of ESD at all levels of education, and education officials/administrators/practitioners should hold the necessary expertise for teaching and achieving ESD learning performance, including educational/learning pedagogies and methods, contents of ESD knowledge, skills, and values.</p> <ul style="list-style-type: none"> • Future teachers should receive pre-service teacher training on progressive pedagogies and learning methodologies in addition to the basic standard of training for literacy and numeracy. This should include holistic, interdisciplinary perspectives and multi-perspective approaches to teaching (e.g. use of multi-subjects or values in different contexts) to help students analyse situations from their own and others' perspectives. • Members of university faculties, departments or colleges of education should develop teacher education strategies with significant inputs using the LPF elements and characteristics, including: 1) enhancement of the entity's responsibility to provide in-service teacher training and 2) provision of systematic professional development on quality teaching for transformative learning and teacher-based educational research. • In-service teachers should receive the professional authority for the "localisation" of curriculum, lesson plans and assessment methods in order to be creative and adaptive in their teaching. Teachers should have the autonomy to reset teaching/pedagogical targets in context of the LPF to improve outcomes. • Refocusing assessment processes to allow for collective discourse and reflexivity with students, teachers should increase application of both formative and summative assessments that draw on both cognitive and performance-based assessment to better adapt teaching to students' needs. 	

TABLE 8 Educational objective: Establishment of safe and effective learning environments	
Target Actors	School Administrators/Managers (both regional and local).
Relevance of objective for achieving quality education	Establishment of safe and effective learning environments provides dynamic opportunities for engaged, experience-based learning in a safe environment which serves as an example of sustainable practices and quality education.
Main LP element and its relation to objective	Cooperative Learning Relationships (LR) like those listed under LR help develop mutual trust and social bonds to enhance students' emotional safety in addition to the provision of a safe physical environment by the local authority.
<p>Recommendations: School administrators can utilise the LPF to:</p> <ul style="list-style-type: none"> • Apply the LR and WV aspects using an integrative, whole-school approach to education and developing schools as model learning environments for sustainable practices. This can be applied to school operations and facilities, in addition to collaborative networking among schools and mutual use of resources. • Use the LPF to evaluate the effectiveness of the learning processes and educational contents of such initiatives (e.g. ESD-related activity or a school project) to provide useful information for improvement. • Provide safe and appropriate learning environments including peer interaction that facilitate linkages with surrounding ecological systems and hence providing dynamic opportunities for engaged, experience-based learning. • Transform schools into hubs for community learning, local participation, contextualising learning opportunities to meet local needs, and foster strong social ties, trust-building, and a sense of citizenship. 	

TABLE 9 Educational objective: Transformative approaches to teaching and learning

Target Actors	Education policy makers and authorities (e.g. National/ Regional Education Officials), curriculum developers, students, teachers/educators, school administrators, ESD indicator developers/practitioners.
Relevance of objective for achieving quality education	Teaching and learning that engages students in collaborative learning projects that apply critical analysis and problem solving aimed at addressing real-life problems support development of “transformative” skills.
Main LP element and its relation to objective	Change of World-View (WV): helps actors to see the flaws inherent in the current system of education. By critical self-reflection and use of other affective outcomes, particularly values, the motivation, desire and capacity for transformative teaching and learning are reinforced.
<p>Recommendations: Although quality educational output/outcomes are best achieved at local school/classroom level, national level support is needed to provide sufficient financial and human resources, and to mandate that it is adopted by all actors. Both policy makers and government officials should be committed to the ESD WV.</p> <ul style="list-style-type: none"> • Policy makers and government officials should incorporate ESD-related policies into the framework of national education policies (including curriculum contents), and require effective inter-agency collaboration. • Relevant institutions, especially ministries of education and environment need to provide a strong vision and leadership to guide ESD implementation. • Teachers and others in charge of ESD implementation need to have sufficient knowledge and expertise to work in a holistic, integrated, interdisciplinary and systemic manner. Training may be provided in a variety of ways through universities, educational administrators, etc., but needs to be financed by government authorities. • Teachers should use teaching approaches based on transformative, student-centred learning to improve the experience of the student. From the LPF, these should include: 1) knowledge construction through student participation in syllabus design and through collaborative and participatory learning activities/projects, 2) developing critical analysis and problem solving skills like cooperative inquiry, action research and field visits to envisage alternatives and seek solutions to real-life problems, and 3) using Performance Based Assessment with an ESD perspective to demonstrate skill-based learning, and 4) aiming to shift from delivering education towards facilitating learning. • Teachers should use LR to build healthy relationships and trust among students, between students and teachers, and between students and the community at large. This will help create a secure emotional and physical environment for improved student performance. • ESD indicator developers and practitioners should use the LPF for qualitative indication and evaluation. 	

7 Conclusion

The future direction of education is on the agenda of several important global initiatives such as DESD, EFA, MDGs, the Global Action Programme on ESD, and the SDGs. This Policy Brief argues that the overwhelming priority of these initiatives should now be on *quality education*, and that there is a need to move beyond the past focus on access and attainment. A *quality education* system should consist of both quantitative and qualitative inputs that provide support at the policy level while also emphasising outcome/output characteristics at the practice level. However, for *quality education* to gain relevance it must integrate an ESD perspective to provide learners with the necessary capacities for addressing the current and emerging challenges the world faces.

This Policy Brief recommends an ESD learning performance framework as means to catalyse the incorporation of ESD into the mainstream of education as well as serve as a useful evaluation tool for enhancing ESD-based quality education across the whole education system. With further application and testing, the LPF could also support the translation and adaption of ESD into a new global educational framework, and contribute significantly to the framing of education goals for the SDGs. Finally, the LPF could strengthen and deepen the monitoring and evaluation process through inclusion of qualitative outcome indicators in addition to helping to provide a clear working definition of ESD.

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