RG TRANSFORMING EDUCATION OUTPUTS

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1. Overview

As we reach the midpoint between the inception of the Agenda 2030 and the Sustainable Development Goals (SDGs) and their final deadline in 2030, significant delays in the deployment of the Agenda have become apparent. The Summit of the Future presents an excellent and fundamental opportunity to assess these limitations to date and design a new pathway towards sustainability, the eradication of poverty, and the harnessing of digital technologies for human progress.

The challenges ahead in preserving the global commons, such as the biosphere and its diversity, critical ecosystems like rainforests, oceans, the atmosphere, and a stable climate, necessitate long-term investment. These investments must be well-designed, well-implemented, and properly financed through both public and private means. Major investment priorities include quality education, universal health coverage, zero-carbon energy systems, sustainable agriculture, urban infrastructure, and digital connectivity, among others.

The UN Secretary-General has addressed these challenges in "Our Common Agenda" and the accompanying Policy Briefs, aiming to prepare a Pact for the Future to be signed during the Summit of the Future in New York this September.

The International Conference “Paving the Way to the Pact of the Future” aims to generate impact-driven contributions to accelerate the implementation of the SDGs by:

- **Fostering discussions and proposals** on necessary transformations in education and lifelong learning for deeper engagement with the SDGs.
- **Building potential solutions with young people** for their effective and meaningful engagement in decision-making and policy elaboration processes, with a view towards the future of humanity and the planet.
- **Reflecting on the need to measure national development** by considering people's well-being and the healing of the planet, which should be closely aligned with the SDGs.
- **Promoting equal access and training in advanced technologies** to support sustainable development, ensuring equality in leveraging digital technologies to reduce inequalities and accelerate development processes.

This conference seeks to lay the groundwork for a robust and actionable future pact, ensuring that all stakeholders are actively engaged and equipped to meet the ambitious goals set forth by the 2030 Agenda.

2. Transforming Education

2.1. Introduction and need of Action

In light of the profound technological advancements, existential climate challenges, and increasing polarization, contemporary education systems are being scrutinized more than ever. According to "Our Common Agenda Policy Brief 10: Transforming Education" (April 2023), education systems are predominantly designed to prepare children and young people for adult life, rather than equipping learners of all ages with the skills to adapt and thrive in an ever-changing world. These systems often rely on rote learning, focusing on imparting predetermined knowledge instead of fostering the ability to navigate and excel in an uncertain future. Additionally, some education systems perpetuate harmful stereotypes and practices that contribute to inequality, division, and environmental degradation.

Given these challenges, there is an urgent need for a new multilateralism and a global governance framework that emphasizes the development of future leaders with a global perspective. This calls for a modern reinterpretation of the ancient Greek concept of PAIDEIA, which encompassed the essential knowledge and skills every citizen should possess. In the 21st century, this means equipping individuals to promote and uphold the values of sustainable development globally, aligning with Target 4.7 of the Sustainable Development Goals.

2.2. Challenges identified

In the 70 of century XX, Paulo Freire already believed that education should not merely transmit knowledge but should foster critical thinking, self-awareness, and the capacity for transformative action. United Nations and several researches also highlight the need for a transformative learning but few steps and actions have been given so far. Framed by all these concerns and in line with the Situated Learning Theory by Etienne Wenger and Jean Lave, the Reflection Group on Transformational Education (GR_TE) underscores the imperative for higher and lifelong learning to center on the relationship between learning and the social context in which it unfolds. This dynamic interaction between the global and local spheres forms the foundation for future educational endeavors.

Integration of Sustainability into Education

Global Citizenship Education is advocated to integrate sustainability awareness seamlessly into curricula. This entails incorporating sustainable development and the respective SDG across disciplines and ensuring equitable access to such education for all students. Strategies may include off campus activities, providing scholarships, and fostering community engagement in sustainability initiatives so students could embed the respect for nature and for others. Empowering students to advocate for equitable and sustainable policies, both locally and globally, is vital for promoting civic engagement and participation in advocacy campaigns.

Eco-Literacy in a Global Context

Considering contemporary globalization trends, eco-literacy must be contextualized within this geostrategic framework. Deepening dialogue and concrete actions between the Global South and North are essential in advancing sustainability goals and fostering mutual understanding and collaboration.

Citizen Science for Hands-On Learning

Citizen Science emerges as a powerful tool for hands-on learning experiences, engaging students in data collection, analysis, and interpretation. Collaboration with local, including indigenous and traditional communities, scientists, and organizations enhances teamwork and community involvement. Interdisciplinary learning opportunities abound in citizen science projects, enabling students to integrate knowledge across diverse disciplines. Leveraging technology in these endeavors

not only facilitates data collection and analysis but also cultivates digital literacy skills, preparing students for future challenges.

Equity Through Education

Equity through education is underscored as a fundamental principle for driving future educational initiatives. By ensuring equitable access to quality education for individuals from all backgrounds and circumstances, we lay the groundwork for a more just and inclusive society. This focus on individual growth and societal progress fosters a more sustainable and equitable future.

Youth Activism in Education

Youth activism is highlighted as integral to effecting comprehensive transformation within the educational landscape, particularly concerning climate change education. However, meaningful engagement of youth in education remains a persistent challenge that warrants attention and concerted efforts.

Technological Innovation for Sustainability

Technological innovation emerges as a pivotal force in advancing sustainability goals. A consistent focus on purpose-driven technological advancements, particularly in the realm of AI and the development of an Internet of Nature, holds transformative potential for addressing pressing global challenges.

Education and Innovation Reform

A paradigm shift in educational approaches and innovation models is advocated, necessitating a collaborative approach involving higher educational institutions, companies, and individuals. This interchangeable model emphasizes creativity, research, and productive innovation as catalysts for transformative change, crucial for addressing the urgent imperative of preserving nature and the planet.

The imperative for transformative education is underscored, emphasizing the integration of sustainability, citizen science, equity, youth activism, and technological innovation into educational frameworks. These pillars form the cornerstone of a holistic approach to education reform, essential for fostering a more sustainable, equitable, and resilient future.

2.3. Proposals of Action

Transformational Methodological Approach to University Studies

The imperative for a transformational overhaul of the methodological approach to university studies underscores the urgent need for an educational revolution commencing from the earliest levels of education. The Reflection Group on Transformational Education (GR_TE) identifies several critical dimensions in this pursuit:

Dimension 1 – Reimagining Knowledge Transmission and Acquisition Models

Formal university education plays a pivotal role in knowledge acquisition, serving as the bedrock for intellectual growth and advancement. However, the current educational paradigm primarily emphasizes specialization, channeling students towards becoming proficient specialists or practitioners. Rooted in the Cartesian model of a predictable, cause-and-effect world, traditional education often overlooks the complexities and uncertainties inherent in contemporary society.

In an era marked by rapid change and uncertainty, the traditional approach to learning is increasingly inadequate. The ability to adapt and innovate in the face of uncertainty is paramount. Rather than relying solely on past practices, which may no longer suffice, universities must foster an environment that nurtures creativity and encourages the exploration of novel solutions to present-day challenges.

The objective of university education extends beyond producing proficient specialists; it must endeavor to cultivate well-rounded individuals equipped to navigate and thrive in a complex, ever-evolving world. Beyond academic prowess, students should develop a deep sense of empathy, creativity and critical reflection and environmental stewardship, and a commitment to effecting positive change. Embracing the notion of "Global Citizenship," universities must empower students to embrace diversity, foster inclusivity, and contribute meaningfully to the collective endeavor of building a more sustainable and equitable world for all.

Dimension 2 - What Needs to Be Transformed?

There is an urgent need for a new governance framework for knowledge and learning in higher education. Despite significant advancements, the prevailing business model and culture within universities remain insular and resistant to change. To foster innovation, we must adopt an open ecosystem where creativity can flourish and lead to practical applications.

The disconnect between academic research and the entrepreneurial world has hindered progress and innovation. Higher education must evolve beyond its traditional model, which often functions as a "cathedral" of established certainties, to embrace uncertainty and real-world complexities. This transformation involves integrating thought, research, and practical application, fostering dynamic interactions between universities, businesses, communities and entrepreneurs.

Universities should no longer be isolated centers of learning but active participants in a broader ecosystem of innovation. This involves creating synergies between teaching, research, and entrepreneurship, allowing academic thought to intersect with real-world challenges. By doing so, universities can generate practical, impactful solutions that drive both economic and social value.

Engaging with the community is essential for higher education to remain relevant and impactful. A "hands-on" approach, where students interact directly with real-world problems, enriches their learning experience and fosters genuine inspiration. This practical engagement ensures that academic learning is reality grounded, encouraging students to apply their knowledge to make tangible differences in their communities.

Dimension 3 - Teaching Models

A key challenge for modern education is bridging the gap between formal, Cartesian teaching-rooted in certainties and confirmed knowledge-and teaching that addresses uncertainty, unpredictability, and complexity. To remain productive and relevant, educational models must adapt to these realities.

Holistic Approach to SDGs: Sustainable Development Goals (SDGs) must not be treated as isolated topics. For meaningful, lasting impact, sustainability, diversity, and climate change should be interwoven into every discipline-from biology and law to history and mathematics, and from physics to engineering. This approach ensures that these critical issues are embedded across all subjects, areas of knowledge, and teaching methods.

From Specialization to Transdisciplinarity: Moving beyond traditional, closed models of specialized knowledge, education must embrace open, transdisciplinary approaches. This shift, though demanding, is essential for addressing the complex, interconnected challenges of the modern world.

Communities of Practice: Theoretical knowledge must be grounded in real-world experimentation and hands-on practice within the communities we serve. The university should open their walls and

act as a bridge, connecting theoretical understanding with practical application to foster a more equitable, economically robust, and socially active society.

Expanding Practical Education: While some universities have started integrating hands-on learning models, this approach needs to be expanded in depth and breadth. Practical education should be a fundamental component of the curriculum, providing, on one hand, students with real-world experience and preparing them to tackle complex, unpredictable challenges and, on the other hand, prepare teachers with mindsets and values to enable them to apply those teaching models. Higher Education Institutions need to prepare teachers mindsets to embed, envisioning and act for sustainability (following European sustainability competence framework) and expand their mental and emotional thoughts, considering beyond the relationship with other humans, but also with nature.

Dimension 4 – Role in Fostering Students' Creativity and Talent; Innovative Approaches to Deal with Complex Real-Life Challenges and Future Uncertainty

Transforming individual creativity into collective innovation requires the creation of simple, natural social learning and knowledge-sharing spaces. This dimension focuses on the following key areas from the perspective of students seeking knowledge:

Developing Critical Thinking by Reviving the Art of Questioning: Amidst the focus on specialization, business models, and productivity, the importance of questioning has diminished. However, questioning is crucial for creativity and innovation. Without asking questions, we cannot find new answers and solutions. A good question and a curious mind are essential for problem-solving, as illustrated by historical figures from Newton to Steve Jobs. We need to reclaim the concept of the Agora—a reflective space between master and student that fosters critical thinking and allows ideas to emerge.

Encouraging Universities to Foster Thinkers and Promoting Citizen Science Projects: Universities should continue to produce thinkers who apply their ideas practically. Citizen science projects, supported by a tripartite model involving universities, governments, and communities, can provide such practical applications. These projects promote critical thinking and real-world problem-solving.

Developing and Accompanying Case Studies to Inspire Behavioral and mindset Change: Case studies not only inspire but also motivate others to change behaviors, culture, and interaction forms. Sustainable behaviors cannot be mandated; they must be understood and integrated into daily life. Pilot projects within communities play a crucial role in this integration, providing clear, simple messages that resonate with individuals.

Developing the New "Learners for Life" by Cultivating a Craftsperson's Spirit: Students should be encouraged to think and evolve individually, akin to artisans of knowledge. They should be capable of working in teams to create new ideas and develop concepts. Promoting lifelong learning and engagement in collective efforts is essential.

Utilizing Digital and AI Technologies & Experimental Hands-On Models: The use of digital technology and Artificial Intelligence (AI) is impactful and transformative. The focus should not be on whether we need technology, but on how it can be effectively utilized. Emphasizing the utilitarian aspect of technology, it should be leveraged to enhance learning and innovation while recognizing its broader impacts. Digital and AI can be also useful for gaming and collaborative activities, already proved to be very effective in the learning process

The Role of Teachers and Higher Education in a Technologically Vibrant Era amidst Global Sustainability Challenges: In this era of technological advancement and global sustainability challenges, the role of educators is dynamic. They must embrace technology as a catalyst for sustainable education, foster innovation and creativity, adapt to new sustainable learning models,

support students' well-being, and promote ethical considerations and citizenship. This comprehensive approach ensures that education remains relevant and impactful, addressing the urgent need for global sustainability.

Dimension 5 - What do young people expect from education? What is the role of non-formal[2] education connected with formal education curricula?

Youth involvement has become essential to ensure a comprehensive transformation within the current educational system, particularly regarding climate change education. According to **UNESCO's Youth Demand for Quality Climate Change Education** report in 2022, many youth express dissatisfaction with passive learning methods such as "creating posters about climate change". 60% of respondents primarily learn about climate change in the classroom and desire experiential, project and challenge based learning opportunities outside traditional settings. Additionally, 77% advocate for diverse perspectives to be included in climate change education.

To advance on this matter, the following recommendations are proposed:

Intergenerational Dialogues: Facilitate high-level conversations among young activists, decision-makers, scientists, and industry leaders to ensure diverse perspectives. These dialogues should encourage informal discussions, bridging genera1onal gaps and fostering collaboration. This aligns with the goal of greening communities.

Mentorship Opportunities: Implement mentorship programs to provide valuable knowledge and skills while offering guidance from experienced mentors within the climate movement. Through mentorship, youth can navigate their educational and career paths effectively, fostering a sense of community engagement.

Youth as Decision-Makers: Elevate youth voices in decision-making processes related to curriculum development. Actively involving youth in shaping educational agendas ensures relevance and resonance with their interests and needs. This approach aligns with the Greening curriculum pillar by incorporating diverse perspectives into educational frameworks.

Social Media Engagement: Leverage social media platforms to disseminate reliable information and engage youth effectively. Green content creators can play a crucial role in promoting climate education and inspiring action among young audiences. By fostering collaborative opportunities between content creators, universities, and research institutes, climate education can be leveraged in an attractive and innovative way to engage younger generations and provide them with reliable and verified information.

2.4. Expected Impact

The implementation of the proposed actions is anticipated to significantly transform higher education and lifelong learning. This section outlines the expected impacts on various aspects and components discussed in the three meetings, providing a comprehensive understanding of the potential outcomes.

[2] Non-formal education refers to planned, structured programmes and processes of personal and social education for young people designed to improve a range of skills and competences, outside the formal educational curriculum. Read more here.

CHALLENGES	ENABLERS	BENEFITS	SOLUTIONS
Traditional Knowledge Models	Shift to Open, Interdisciplinary Models	Enhanced critical thinking and problem-solving skills	Integration of SDGs across all disciplines
Specialized vs. Holistic Education	Emphasis on Transdisciplinarity	Development of adaptable and versatile graduates	Reform of curricula to include hands-on, real-world applications
Disconnected Research and Entrepreneurship	University-Industry Collaboration	Increased innovation and entrepreneurial activity	Establishment of university-business-community ecosystems
Passive Learning Methods	Experiential, Project-Based Learning	Higher student engagement and retention	Implementation of mentorship programs and citizen science projects
Limited Student Involvement in Decision-Making	Active Youth Participation	Education that aligns with student interests and societal needs	Elevation of youth voices in curriculum development
Lack of Sustainable Practices	Incorporation of Sustainability in Education	Promotion of global citizenship and environmental stewardship	Integration of sustainability themes across all courses
Technological Gaps in Education	Embracing Digital and AI Technologies	Improved digital literacy and preparedness for future demands	Utilization of digital tools for hands-on and experiential learning
Cultural and Generational Gaps	Intergenerational Dialogues	Greater collaboration and understanding across age groups	Facilitation of high-level conversations and informal discussions
Limited teachers' mindsets towards sustainability action	Teachers oriented Collaborative empowerment actions	More reality oriented Learning approaches	Preparation of teachers to embed, envisioning and act for sustainability

Detailed Impacts

a) Transformational Methodological Approaches:

- *Adaptability and Innovation:* By moving away from purely specialized knowledge models to more open and transdisciplinary approaches, students will be better prepared to address complex, real-world problems. This adaptability is crucial in an unpredictable world.
- *Global Citizenship:* Embedding sustainability and environmental awareness across all disciplines will foster a sense of global citizenship, ensuring that graduates are not only specialists but also stewards and respectful of the planet.

b) **Governance of Knowledge and Learning:**
   - *Innovation and Creativity:* Creating an open ecosystem where universities, businesses, and communities collaborate will drive innovation. This will help bridge the gap between research and practical application, leading to more entrepreneurial activities and real-world problem-solving.
   - *Community Engagement:* Increased involvement with the community will provide students with hands-on experience, enhancing their learning and making education more relevant and impactful.

c) **Teaching Models:**
   - *Integrated Learning:* By incorporating SDGs and sustainability into all areas of study, education will become more holistic. This will not only produce well-rounded graduates but also promote sustainable practices in various fields.(actually the UN defends this integration since some decades)
   - *Theory and Practice:* Establishing a strong link between theoretical knowledge and practical application will ensure that learning is grounded in real-world experiences. This approach will help students better understand and retain knowledge.

d) **Fostering Creativity and Talent:**
   - *Critical Thinking and Innovation:* Encouraging critical thinking and the development of new ideas will lead to greater innovation. Universities will become spaces where creativity is nurtured and applied to solve societal challenges.
   - *Digital and AI Technologies:* Embracing technology in education will improve digital literacy and prepare students for future technological advancements. This will also make learning more engaging and effective.

e) **Youth Expectations and Non-Formal Education:**
   - *Active Engagement:* Actively involving youth in decision-making and curriculum development will ensure that education is relevant and meets their needs. This will lead to higher engagement and satisfaction among students.
   - *Mentorship and Real-World Experience:* Implementing mentorship programs and project- and challenge based learning opportunities will provide students with valuable skills and experiences. This will help them navigate their educational and career paths more effectively.