FOSTERING SUSTAINABLE DEVELOPMENT IN EDUCATION: ADDRESSING PRACTICES AND PERSPECTIVES FOR THE TWENTY-FIRST CENTURY

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Abstract

The importance of education in fostering practices that contribute to sustainable development is examined in this study. Educating towards Sustainable Development, or ESD, has made significant progress in gaining recognition from worldwide commissions and organizations during the past few decades. In 2004, the United Nations proclaimed that the period from 2005 to2014 would be the Decade of Education for Sustainable Development. To equip people with the information necessary to maintain sustainability in their communities and nations, it is notadequate to rely exclusively on the formal education system, which only has an impact on individuals for a finite amount of time. Fortunately, ESD goes beyond what is taught in traditional schools and requires coordination in between both the formal and informal educational sectors. These sectors include nature centers, non-governmental organisations, educators in public health, and agricultural extension agents. In addition, educating people about the need of sustainability is a task that never ends. In the best case scenario, these several sectors would work together to promote ESD to the broader public by concentrating their efforts on certain groups of people and problems that are relevant to sustainability. On a worldwide basis, there is a growing consensus that education for sustainable development (ESD) is an essential ingredient in good educational practise. It is important to note that ESD has been incorporated into both the Muscat Agreement and the 2030 Agenda for Sustainable Development, both of which are associated with the Global Education for All Meeting. The purpose of this study is to investigate the relationships that exist among human development, ESD, sustainable development, and the Sustainable Development Goals (also known as SDGs). It highlights the significance of ESD in the global education debate and emphasises the relationship between education and the attainment of all of the Sustainable Development Goals (SDGs), with aparticular focus on ESD.

Keywords

Introduction

The idea of education for sustainable development (ESD) changes as new sustainability concernsarise. ESD is embraced in Goal 4's Target 4.7 of the 2030 Agenda for Sustainable Development and is mirrored in other Goals and Targets as well(Leal Filho, Manolas, & Pace, 2009). The 2030Agenda's approach is significant not just for the pivotal role that education will play in achieving the Goals, but also for amplifying its impact by focusing on the new sustainability issues. As a result, there is a great need for a study to better understand how ESD interacts with the 2030 Agenda framework in particular situations (Shulla, Filho, Lardjane, Sommer, & Borgemeister, 2020). The key to achieving sustainability is education. People all across the world are aware that the current economic development tendencies are unsustainable and that raising public awareness, investing in education, and investing in training are crucial steps toward transformingsociety. Beyond that, there is not much consensus. The concept of sustainable development and its viability are topics of debate. Their ideas of what sustainable societies will look like or be are diverse. The same people enquire as to why programs for teaching sustainability have not been created by educators. However, since there is little consensus on sustainability itself, it is not surprising that education for sustainability (EfS) has had trouble progressing. ESD (Educationfor Sustainable Development) indicates a shift in educational culture and points the way for innovative approaches to content and method teaching and learning in this environment. ESD refers to the integration of key sustainable development concerns into education and learning as well as the encouragement of the development of skills that help people live and act in a sustainable manner. ESD is becoming more widely recognized on a global scale as a keycomponent of high-quality education. As it adjusts to the peculiarities of political, sociocultural, and ecological contexts, education for sustainable development (ESD) is a developing term with different interpretations that are applicable to local and national situations (UNESCO 2017) (Zilahy, Huisingh, Melanen, Phillips, & Sheffy, 2009). With the introduction of the 2030 Agenda for Sustainable Development, this idea gained significant acceptance during the United Nations (UN) Decade on Education for Sustainable Development (DESD) (2004–2014) (Cai & Wolff, 2022). UNESCO's definition of ESD states that "Education for Sustainable Development empowers learners to make informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations, while respecting cultural diversity" (UNESCO 2009).By maintaining the well-being of the five pillars of sustainability—the environment, society, economy, peace, and partnership—ESD is built on the concepts and values that underpin sustainable development (UNESCO, 2016) (Agbedahin, 2019). Essential concepts and issues related to sustainable development must be systematicallyor ad hoc mainstreamed into all formats and levels of teaching and learning as part of ESD. Climate change, food security, disaster risk reduction and management, biodiversity, poverty alleviation, sustainable production and consumption, land degradation, water quality, health, extinction of plant and animal species, waste management, and resource efficiency are a few of these

challenges.

ESD'S Historical Context

The founding of ESD was not initiated by the education community, in contrast to the majority of educational movements. International political and economic bodies (such as the United Nations, OECD, and OAS) provided a significant external push for ESD (Van Weenen, 2000). Environmental and health ministries in many nations generate ESD principles and content, whichis subsequently distributed to educators for instruction. Both international educational organizations like UNESCO and educators themselves view this outside conceptual development—which is independent of educators—as a concern.

When world leaders decided that the idea of sustainable development should be actively pursued as a worldwide objective, ESD came into being. Since the UN General Assembly supported sustainable development in 1987, the parallel idea of education promoting sustainable development has been investigated. The idea of sustainable development developed between 1987 and 1992 as committees debated, negotiated, and drafted the 40 chapters of Agenda 21. Promoting Education, Public Awareness, and Training, Chapter 36 of Agenda 21 (UNESCO 1992), summarized the original ideas about ESD (Rwigema, 2023).

It is crucial to understand that ESD is a notion that is always changing and has expanded in the years since the Earth Summit in Rio de Janeiro in 1992 (Tilbury, 2002). The idea of sustainable development was further developed at a number of significant UN conferences. The World Conference on Human Rights in Vienna in 1993, the International Conference on Population andDevelopment in Cairo in 1994, the World Summit for Social Development in Copenhagen in 1995, the Fourth World Conference on Women in Beijing in 1995, and the Second World Conference on Human Settlements in Istanbul in 1996 were among the conferences that addressed fundamental aspects of sustainability. Each significant UN conference contributed to the conceptual foundation of ESD. emphasized the need for economic development, social development, and environmental awareness; demanded that women be strengthened and given more power; It sought universal access to essential social services;

- understood the significance of sustainable livelihood

- emphasized the importance of creating a wide range of supportive settings for social and economic development;
- worked to preserve the environment and the natural resources that are essential to everyone;
- emphasized the significance of human rights;
- Identified the importance of education in achieving sustainable objectives.

1. Initiatives and current sustainable practices in the 21st century

A best practice is what? What sets a best practice in technology education for sustainability apart

from all other practices? Is a best practice linked to the subject matter, teaching techniques, classroom management, organizational design, even organizational change, program efficacy, student learning, teacher efficacy, or the original and imaginative ideas of individuals? Perhaps all of the practices and much more are to blame (Heasly, Lindner, Iliško, & Salīte, 2020). A human-created and guided activity called a "Best practice" in technology education for sustainability aims to make a deliberate improvement in student learning, teaching efficacy, and program effectiveness. It should be emphasized that identifying all of the best practices in technology education for sustainability currently in use may be quite challenging and that those that are discovered may potentially be up for discussion. However, discussion and debate are constructive activities, and the best practices chosen for this paper may serve as the catalyst for constructive debate in this area. In addition to identifying and describing the best practices in technology education for sustainability already in use, this paper's goal is to provide an analysis of why these practices are so effective. The examples that follow were also chosen based on the following standards in figure 1:
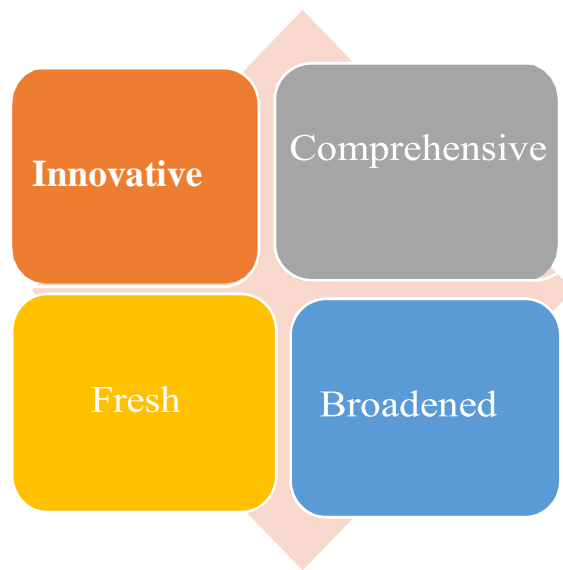

Figure
1

2. Adding technology education to the curriculum in schools

In addition to helping to meet the demand for future technology innovators, enhancing school curricula with explicit opportunities for multiple expression modes that are valid in a variety of classroom contexts will redefine the role of school education itself, as well as potentially the cultural identity of the society. Technological advances require interdisciplinary thinking and a variety of abilities, therefore developing specialists and innovative people requires the right training, starting in the classroom (Kopnina, 2020). Because students in this age range tend to engage in technological activity with passion, curiosity, and lack of inhibition creates the best possibility for development, incorporating technology into the curriculum of schools is also vital.A time of rapid development is brought on by students' unbridled joy, wonder, and enthusiasmfor the world around them. The greater the number of technical activities this age group engages in, the more their trust in their technological skills may get established. The following three examples are drawn from Martin and Martin (2006), who determined the most effective teaching methods in US schools. The examples show how these concerns can be effectively handled in technology education programs and are related to energy and recycling. The linkages between several disciplines are highlighted in these examples.

3. Green and Eco-friendly technology

Students must combine at least three different items to create their "new" piece of furniture whileworking in small groups. Students are not permitted to purchase resources, therefore they must make their solution entirely from salvaged items (Fischer et al., 2022). Thus, using recycled materials like tyre rims, old tarpaulins, foam insulation and damaged goods, students haveproduced a wide range of furniture pieces. One team, for instance, recently created a fold-up bed out of disused wardrobe doors. Students do extensive research on recycling at the start of theunit. They gain knowledge about the value of recycling as well as some of the biggest challengesassociated with it, such as recycling furniture. The "Green Technology" classroom/laboratory is where students gather materials and bring them to design, create, and assess their solutions over the course of several weeks. Through this project, students learn how to ask a lot of pertinent questions about design, and recycling, as well as more technical inquiries regarding the proper use of tools and machinery to combine the materials (Alam, 2022). Due to the open-ended nature of the problem and the requirement that students exercise initiative in finding and locating the items they need to solve the problem, kids learn to become more independent. Since students solve problems in small groups, kids must learn how to work well as a team in order to be successful. Through this exercise, individuals can better comprehend and engage with technology in their daily lives and realize that they can contribute to the recycling problem by using technology and creativity to address problems (Martin and Martin, 2006).

4. Examining different methods of producing energy

To help students understand the social, economic, and environmental effects of these technologies, it is intended to give them the chance to investigate energy production and distribution networks. In an effort to better understand prospective solutions that can satisfy their future energy needs, students engage with energy conversion systems that are

sustainable and environmentally friendly.Students learn about their academic strengths and shortcomings when they apply to the design professions.

5. Focusing on 21st-century skills with knowledge

ESD must combine knowledge and skills, just like any decent education, to be successful. In order to continue studying after leaving school, acquire sustainable employment, and lead sustainable lives, ESD must provide people with useful skills (Bell, 2016). These abilities, while perfectly in line with a solid foundational education, also fall under one or more of the following three categories of sustainable development:

- ➤ the capacity for efficient oral and written communication;

- ➤ the capacity to consider systems, including social and natural systems;

- ➤ the capacity for anticipatory thought, planning, and forecasting;

- ➤ the capacity to evaluate values critically;

- ➤ the capacity to understand worth, quality, and quantity;

- ➤ the capability of moving from awareness via knowledge to action;

- ➤ the capacity for collaboration with others;

- ➤ the ability to engage in a variety of processes, including understanding, seeking, acting,judging, envisioning, connecting, valuing, questioning, and selecting; and
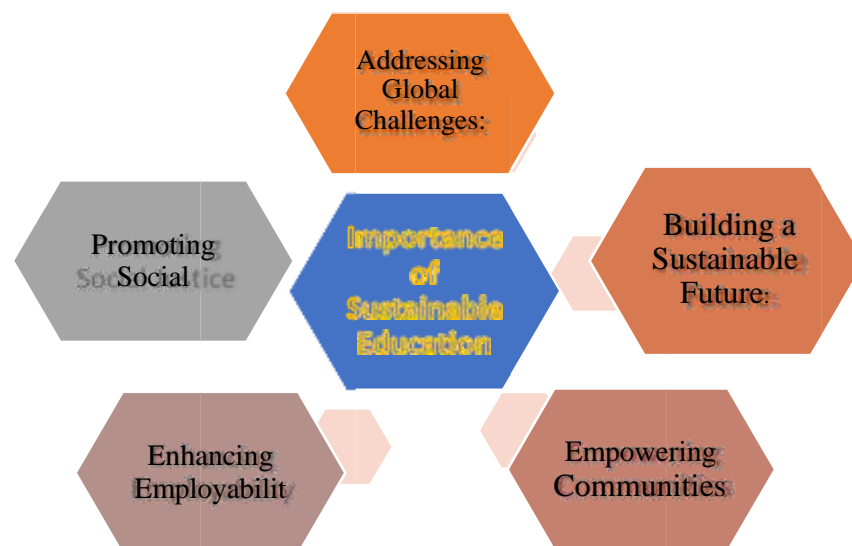- ➤ the ability to respond aesthetically to one's surroundings.

Figure 2

Findings and Recommendations

- ❖ In order to achieve long-term sustainability, it is crucial for 21st-century education to emphasize the need of striking a balance between economic, social, and environmental requirements.

- ❖ Students can learn about the interconnections of global challenges and the value of teamwork, problem-solving and critical-thinking abilities through sustainability education.

- ❖ The application of knowledge and skills in practical contexts must be emphasized in the multidisciplinary and integrated approach to sustainability education that educators must embrace.

- ❖ Sustainability can boost student involvement, motivation, and academic accomplishment by being incorporated into educational policies, curricula, and teaching methods.

- ❖ In order to advance sustainability education and meet sustainable development objectives, there must be a strong relationship between educational institutions, governments, civil society, and the commercial sector.

- ❖ Provide educators with the professional development and training they require to successfully teach sustainability by providing these opportunities.

- ❖ Make a learning environment that is sustainable, exemplifies sustainable practices, and motivates students to use their knowledge and abilities to address sustainability issues in their neighborhoods.

- ❖ Encourage students to take an active role in making changes in their communities by supporting student-led activities and projects that advance sustainability.

- ❖ Utilize digital media and technology to advance sustainability education and encourage teamwork, innovation, and creativity.

- ❖ Encourage analysis and evaluation of sustainability education initiatives in order to gaugetheir effectiveness and pinpoint areas for development.

Conclusion

In conclusion, tackling global concerns, creating a sustainable future, improving employability, empowering communities, and advancing social justice all depend on sustainability education. We can provide the younger generation with the knowledge and skills they need to become responsible citizens who can affect positive social and environmental change by incorporating sustainability into education policies, curricula, and teaching methods. In conclusion, 21st-century sustainability education and practices are essential for addressing global issues, fostering critical thinking and problem-solving abilities, and educating the next generation of leaders for a sustainable future. To effectively promote sustainability education, educators must use a cross-disciplinary strategy, offer chances for experiential learning, take advantage of technology and innovation, and cultivate collaborations. We can ensure a sustainable future for everyone by educating and training the next generation.

References

Agbedahin, A. V. (2019). Sustainable development, Education for Sustainable Development, and the 2030Agenda for Sustainable Development: Emergence, efficacy, eminence, and future. *Sustainable Development, 27*(4), 669-680.

Alam, A. (2022).Mapping a sustainable future through conceptualization of transformative learning framework, education for sustainable development, critical reflection, and responsible citizenship:an exploration of pedagogies for twenty-first century learning. *ECS Transactions, 107*(1), 9827.

Bell, D. V. (2016). Twenty-first century education: Transformative education for sustainability and responsible citizenship. *Journal of Teacher Education for Sustainability, 18*(1), 48-56.

Cai, Y., & Wolff, L.-A. (2022). Education and Sustainable Development Goals (Vol. 15, pp. 643): MDPI.Fischer, D., King, J., Rieckmann, M., Barth,M., Büssing, A., Hemmer, I., & Lindau-Bank, D. (2022).

Teacher education for sustainable development: A review of an emerging research field. *Journal of Teacher Education, 73*(5), 509-524.

Heasly, B., Lindner, J., Iliško, D., & Salīte, I. (2020). From initiatives, to insights, to implementation of the sustainability and securitability agenda for 2030. *Discourse and Communication for Sustainable Education, 11*(1), 1-4.

Kopnina, H. (2020). Education for the future? Critical evaluation of education for sustainable development goals. *The Journal of Environmental Education, 51*(4), 280-291.

Leal Filho, W., Manolas, E., & Pace, P. (2009). Education for sustainable development: current discourses and practices and their relevance to technology education. *International Journal of Technology and Design Education, 19*, 149-165.

Rwigema, P. (2023). G20 and African Union development: Building alliances for sustainable development. *The Strategic Journal of Business & Change Management, 10*(1), 38-79.

Shulla, K., Filho, W. L., Lardjane, S., Sommer, J. H., & Borgemeister, C. (2020). Sustainable development education in the context of the 2030 Agenda for sustainable development. *International Journal of Sustainable Development & World Ecology, 27*(5), 458-468.

Tilbury, D. (2002). *Education and sustainability: Responding to the global challenge*: IUCN.

Van Weenen, H. (2000).Towards a vision of a sustainable university. *International Journal of Sustainability in Higher Education, 1*(1), 20-34.

Zilahy, G., Huisingh, D.,Melanen, M., Phillips, V. D., & Sheffy, J. (2009). Roles of academia in regional sustainability initiatives: outreach for a more sustainable future. *Journal of Cleaner Production, 17*(12), 1053-1056.