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**Education for Sustainable Development:  
Teaching Environmental Sustainability to Adolescents**

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## Abstract

Nowadays, the issue of sustainability has become more acute than ever and is being widely debated. Therefore, learning about sustainable development is crucial, and this topic should be brought up at school and thoroughly discussed with students. In my dissertation, I have decided to concentrate on one of the Three E's of sustainability, environmental sustainability, and how it can be taught to adolescents at school. Teaching environmental sustainability helps students understand the importance of protecting the environment and natural resources for future generations as well as develop the skills and knowledge necessary to make decisions about their own lives and the impact they have on their communities. Moreover, sustainability practices can lead to increased efficiency and cost savings in various areas and help students comprehend and address social and environmental justice issues. Overall, education for sustainable development contributes to raising responsible global citizens who are aware of what is happening in the world, can make informed decisions, and understand the long-term consequences. In this paper, I am going to discuss the topics of green and circular economies, sustainable consumption, lifestyles, skills for a green economy, and green jobs. Furthermore, the subject of adolescents' mental health, specifically eco-anxiety, will be emphasized, and I will suggest how this difficult topic can be explained in a clear but caring way to help students develop sustainable habits and not become anxious and hopeless about their future.

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## 1. Introduction

In 1987, the United Nations Brundtland Commission defined sustainability as meeting the needs of the present without compromising the ability of future generations to meet their own needs. In other words, sustainability refers to the ability to maintain and support a process continuously over time, and sustainable development is a type of development that supports this concept. This implies that we need to look after our planet, our resources, and our people to ensure that we can live sustainably and can hand down our planet to our children and grandchildren to live in true sustainability. Today, there are almost 140 developing countries in the world looking for ways to meet their development needs, but with the increasing threat of climate change, concrete efforts must be made to guarantee that development today does not negatively affect future generations.

There is one issue with sustainability that consists of the fact that it is a vast and multifaceted concept, and available definitions of sustainable development may not satisfy people's need for details. However, one of the ways to understand it much easier is to consider the 3 E's, or pillars, of sustainability: Economy, Ecology, and Equity (Goodland, 1995). To achieve sustainable development, the three E's of sustainability need to be in balance with each other, which means that sustainability is achieved when your actions are helping to develop the economy, promoting social equity, and protecting the integrity of the environment for future generations. The 3 E's of sustainable development offer a useful framework to operationalize our efforts and make clearer our understanding of what practical actions we should undertake. On account of this framework, 17 Sustainable Development Goals (United Nations, 2015) were created that represent a set of important development issues that have to be addressed all over the world by 2030.

The first E refers to Economy, or Economic sustainability. Sustainable economic development means that a business must be profitable to be sustainable, as this will allow the company to create jobs as well as useful products and services to satisfy customers' needs. However, as was mentioned above, economic development should be balanced with the other E's, so a corporation should pursue profit with regard to equity and environmental protection. This principle differentiates sustainable economic development from a traditional one, where profit is the main or even only driver (Nulli Rinalducci, 2023).

The second E refers to Ecology, or Environmental sustainability. Sustainable environmental development means adopting certain practices to conserve the environment, such as being environmentally mindful of our actions and managing the demand for natural resources and their usage. Environmental protection and integrity are crucial for long-term sustainable development (Nulli Rinalducci, 2023).

The third E refers to Equity, or Social sustainability. Sustainable social development is perhaps the least known aspect, and it aims at satisfying basic human needs and rights, enhancing living conditions, and providing equal opportunities for everybody in the economy and society. The main goal of social sustainability is not just to provide for social well-being but to create conditions that will allow for equal opportunities for everybody. There are various considerations about social sustainability, and all of them are significant because it is not possible to achieve sustainable development without inclusive social communities (Nulli Rinalducci, 2023).

The 3 E's of sustainability represent a practical framework that can be used to properly balance every aspect of sustainable development to reach the level where economic growth goes alongside social equity and environmental protection.

Learning about sustainable development is necessary, and this topic should be brought up at school and thoroughly discussed with students starting from an early age. Teaching sustainability helps students understand the importance of protecting the environment and natural resources for future generations. It can also help them develop the skills and knowledge necessary to make informed decisions about their lives and their impact on their communities. Moreover, sustainability practices can lead to increased efficiency and cost savings in areas such as energy, water, and waste management and help students understand and address social and environmental justice issues. Overall, education for sustainable development may help to raise responsible global citizens who are aware of the events that are happening around the world, can make informed decisions, and understand the long-term consequences (De Alwis, n.d.).

In my dissertation, I have decided to choose one of the E's and concentrate on environmental sustainability and how it can be taught to adolescents at school. In the following chapters, I

am going to discuss the topics of green and circular economies, sustainable consumption, lifestyles, skills for a green economy, and green jobs. Furthermore, the subject of adolescents' mental health, specifically eco-anxiety, will be emphasized, and I will suggest how this difficult topic can be explained in a clear but caring way to help students develop sustainable habits and not become anxious and hopeless about their future.

## 2. The future of the green economy is in the youth of today

### 2.1. Green economy and its importance to young people

One of the concepts that is directly connected to environmental sustainability and can be seen as a pathway to sustainable development is a green economy. A green economy refers to an economy that is low-carbon, resource-efficient, and socially inclusive (UNEP, n.d.).

Sustainable development provides the framework for achieving a more sustainable future, while the green economy provides the practical tools and strategies for achieving it. The values and principles of both concepts are aligned, and understanding their interconnectedness is crucial for creating a more sustainable future. The green economy is also connected to a circular economy that is built on three principles: eliminating waste and pollution, circulating products and materials, and regenerating nature (Ellen MacArthur Foundation, n.d.).

Nowadays, several studies (Thoumrungrroje, 2014; Frick et al., 2020; Pellegrini et al., 2022) and reports (Deloitte Global Impact Report, 2022) show that people are exposed to media messages and images promoting increased consumption, which in turn leads to increased use of resources, no matter a stalling world economy. According to the Global Footprint Network (2022), the rate at which we are using the Earth's resources requires 1.75 planets to maintain our current lifestyles; it now takes the Earth one year and seven and a half months to regenerate the resources we use in a year. If we do not change our lifestyle and consumption trends, by the 2030s we will need the equivalent of two planets to support us, which is unsustainable (WWF Living Planet Report, 2008). A green economy aims to turn around this traditional model, and if educated adequately, young people can become an enormous force that will help to maintain sustainability and help the planet thrive.

In the following subchapters, I am going to discuss sustainable consumption, lifestyles, and skills that adolescents can learn and introduce in their lives step by step. These changes are not drastic but rather small and feasible, and they are easy enough to become a part of the routine of an ordinary person. Furthermore, the last subchapter will be dedicated to how industries are changing towards sustainability and green jobs that have been appearing in various economic sectors.

## 2.2. Sustainable consumption and sustainable lifestyles

Sustainable consumption is the concept of consuming resources and products in a sustainable, responsible way so that they can meet our needs now and in the future without creating a negative environmental impact (Davies, 2022). Sustainable consumption is linked to the production, distribution, use, and disposal of products and services and is achieved through more responsible behavior from everyone (YouthXchange: Training Kit on Responsible Consumption, 2002). Providing young people with tools for change is essential in pushing them to act quicker, change their lifestyle, and empower them to make a difference, starting with their daily lives. According to the YouthXchange: Training Kit on Responsible Consumption (2002), created in collaboration with UNESCO and UNEP, only some of the areas in which sustainable consumption plays a great role are food, waste, energy, shopping habits, mobility, and animal cruelty.

Living in a sustainable way refers to making choices and taking actions that minimize the use of natural resources, the generation of emissions, waste, and pollution. In order to create a sustainable lifestyle, we should rethink our ways of living, our habits, and the organization of our everyday lives. Research has shown that increasing income and consumption do not make people happier and more satisfied (Caldas, 2010), but that well-being is closely related to the feeling of being part of and useful to a community that is in balance with our natural environment (Bragg & Atkins, 2016). Making a change does not always mean presenting big solutions, but rather making small steps that contribute to a green environment. According to the UNEP report (2011), which is based on the results of the Global Survey on Sustainable Lifestyles, adolescents need a holistic, compelling, and pragmatic vision of what a sustainable society is and how it can be translated at the local and individual levels. In other words, they need to comprehend why living sustainably is important personally to them and what concrete actions they need to take to make a transition to a green lifestyle.

Therefore, in this section, I am going to briefly discuss each of the six above-mentioned areas of consumption and then suggest certain lifestyle changes in each field that could probably fit into the daily routine of everyone.

### **1) Food.**

The first area that has problematic consumption is food. The challenge of convincing people to change their eating habits toward more environmentally sustainable food consumption (ESFC) patterns is becoming increasingly pressing. Food preferences, choices, and eating habits are notoriously hard to change as they are a central aspect of people's lifestyles and their socio-cultural environment. According to various research studies (Vermeir and Verbeke, 2006; van Dam and van Trijp, 2013; Aschemann-Witzel and Zielke, 2017), many people already hold positive attitudes toward sustainable food, but the notable gap between attitudes and the actual purchase and consumption of more sustainable food products remains to be bridged. The authors of the above-mentioned Kit on Responsible Consumption (2002) suggest some of the stepping stones for a healthier and more sustainable lifestyle.

- Avoid genetically modified food, intensively farmed meat, and non-seasonal food imported from faraway countries.
- When possible, give preference to zero-kilometer food that has been produced ecologically and organically in a radius of 100 km.
- Read labels that can provide you with information about the food and ask vendors for clarifications if they are not clear.
- Learn about "E numbers" that artificially color and flavor food and try to avoid them because they are not only dangerous for your health but also contribute to air, soil, and water pollution.
- Vegetarian and vegan diets are known to be both healthy and environmentally sustainable.

### **2) 5 Rs of waste management.**

In 2013, Bea Johnson proposed in her book "Zero Waste Home" the 5 Rs of waste management—refuse, reduce, reuse, repurpose, and recycle—which represent small and simple actions on the way to a zero-waste life that can be incorporated into a daily routine. We should always remember that everything we buy has already had an impact on the environment even before it ended up in our hands, and it will continue to have an impact after



its purpose is fulfilled. Therefore, incorporating the 5 Rs into your routine may contribute to sustainability and also make your life lighter in a certain way. For instance, if you bring home less plastic, you will have less plastic to sort and recycle. Below, I am going to list the steps using the information provided in the article “5 Rs to make your life more sustainable” on the Be the Story website (<https://www.be-the-story.com/en/>), created by Jerónimo Martins, in which the authors reflected on the topic and created rhymes to help memorize the Rs better.

- Refusing starts outside: every day we have a choice of what to buy or take for free; therefore, think wisely and do not take something you do not need.
- Reducing starts in your mind: think about every item you already possess, and if you realize it is useless for you, donate it. Remember another simple rule that says, “Buy nice or buy twice,” and try to reduce your environmental impact by buying fewer things of higher quality that will last longer.
- Reusing saves money: give preference to reusable alternatives such as reusable cups, eco bottles, and food containers which in the long run will save you more money than you would have spent on single-use items and spare the environment.
- Repurposing puts your imagination to work: a lot of objects can have a second life, so it is always a good idea to use your imagination and try upcycling.
- Recycling is giving a new life: inform yourself about the recycling policies in your area and pay attention to doing it correctly. If you have a garden or grow plants at home, you may think about composting organic waste to make organic fertilizer.

### 3) **Energy consumption.**

Our traditional energy sources are coal, oil, and natural gas, and their overuse has led to high levels of pollution (Environmental and Energy Study Institute [EESI], 2021). Burning fossil fuels releases carbon dioxide into the atmosphere which creates climate externalities such as global warming, extreme weather, acid rain, sea level rise, ocean acidification, pollution, and oil spills and may cause health issues such as asthma, cancer, and heart disease (EESI, 2021). One solution to this problem is to reduce our dependence on the earth’s exhaustible natural resources and resort to alternative, renewable energy sources, whereas another solution that is much easier to implement in everyday life is to consume less. Below is listed some advice suggested by YouthXchange: Training Kit on Responsible Consumption (2002) and Native, a Public Benefit Corporation (n.d.) that may help reach this goal.

- Unplug your electronics because a lot of appliances consume energy even when they are not used. Adjust your thermostat in the winter and your air conditioner in the summer to reduce the amount of released CO<sub>2</sub>.
- Do not use more hot water than you need and take showers instead.
- Do not wash your clothes too often, choose a colder temperature, and after washing, dry them on a rack instead of in a machine.
- Eat lower on the food chain because significant resources are needed to produce animal products compared to plant-based food.
- Turn off the light when leaving a room and use LED lights that are more energy efficient.

#### 4) **Shopping habits.**

Even though it may seem at first that going green means spending more, in many cases, you can save money, enrich your life, and feel better because you are doing something useful for the environment (Venhoeven et al., 2020). There are various small steps you can take, and here are some of them proposed by YouthXchange: Training Kit on Responsible Consumption (2002) and Native, a Public Benefit Corporation (n.d.).

- Instead of buying new things all the time, buy recycled and second-hand ones.
- Give preference to biodegradable cleaning products that are better for the environment and healthier for humans, too.
- Avoid buying products that have been excessively packaged or packaged in materials that cannot be recycled. While buying fruits and vegetables, do not take plastic bags but buy them loose or pack them in reusable tissue bags. Whenever you go shopping, always take your bags with you.
- Give preference to goods produced by slow manufacturing that makes a conscious effort to produce durable, high-quality products and decreases the energy and waste generated during production while also reducing future consumer waste from low-quality products.
- Inform yourself about the clothes and food brands that use ethical procedures and fair-trade practices; if the brand is not transparent enough about their production, then they probably have something to hide. Pay attention to marketing eco-buzzwords (jargon words that may be too difficult for an ordinary person to understand) and try not to buy from companies that are accused of greenwashing.

#### 5) **Mobility.**

Unfortunately, the progress that has been made through the centuries in the field of motor vehicles has come at a price. Cars are considered one of the main sources of carbon emissions and contribute the most to polluting cities and increasing the global temperature, which in turn leads to climate change (European Parliament, 2019). Undoubtedly, cars are essential for modern living, but more responsible use can bring improvements, making cities cleaner and safer to live in and saving the environment. YouthXchange: Training Kit on Responsible Consumption (2002) and Native, a Public Benefit Corporation (n.d.) offer several approaches that we can follow to reduce emissions.

- Choose alternatives to cars, such as public transport. Buses, trams, and trains are generally greener options because they carry more people, pollute less, and use less energy per passenger. Another alternative is to use a bike, rollers, or kick scooter which are becoming more and more popular in cities, are the most energy-efficient, and will also help you stay fit.
- In cases where you still want to use a car, try car-sharing or car-pooling. Carsharing is a system where a group of individuals can rent and drive a car or fleet of cars. It is an alternative to traditional car ownership and is particularly useful for those who do not need a car daily. Car-pooling, also known as ride-sharing, involves sharing a ride with others who are going in the same direction. Car-pooling can be organized through a variety of methods, such as ride-sharing apps like BlaBlaCar, online forums, or through your workplace. Car-pooling is particularly useful for those who have a long commute or a cross-country trip, as it can reduce transport costs and provide a more social and enjoyable travel experience. Like car sharing, carpooling also reduces traffic congestion and the impact on the environment by reducing the number of cars on the road.
- If you decide to buy a car, consider a greener one, check its energy efficiency, pollution performance, and life expectancy, and maintain it well. Drive carefully, avoiding sudden acceleration and braking, which lead to higher fuel consumption and more pollution, and switch the motor off when stopping for longer than 30 seconds.

#### 6) **Animal cruelty.**

Another topic that should be considered while discussing environmental sustainability is the treatment of animals and the consequences of human activity on ecosystems. According to Wikipedia contributors (2023), people use animals for many purposes, such as food, clothing, pets, entertainment, transportation, agriculture, science, sports, and hunting. The treatment of animals and the question of biodiversity and preserving nature's balance are related issues

(UN, 2015). For years now, society has been extremely concerned about the way animals are treated and what can be done to reduce animal cruelty, give animals a right to a dignified existence, and maintain equilibrium. Below are some of the actions suggested by YouthXchange: Training Kit on Responsible Consumption (2002) that can be taken into consideration.

- Educate yourself by reading articles, watching documentaries, and listening to podcasts about animal treatment in different areas of human life and reflect on what you learn.
- Refuse food, clothes, and hygiene products such as shampoos, shower gels, creams, and makeup, and household chemicals that have not been produced humanely. To understand if the product is cruelty-free, search for special logos that are normally put on the package and indicate that the product was not tested on animals and is vegan. Several official cruelty-free logos normally look like a leaping bunny and say “cruelty-free,” “not tested on animals,” or “PETA approved.” However, unfortunately, some unethical companies put fake logos that are similar to the original ones but do not mean that the product is vegan, which makes it important to distinguish between them and make the right decision.
- Another aspect that is important to fighting animal cruelty is to stop or at least reduce the consumption of animals and animal-derived products. One side of this issue is that it is extremely unethical that animals are being raised in captivity, outside of their typical environment, without the possibility to form connections with other animals, and for the sole purpose of satisfying human needs. Aside from this fact, as was already mentioned above while discussing energy consumption, the field of raising animals for food purposes has a huge negative impact on the environment due to the extreme usage of energy, water, and soil.
- If after educating yourself about this topic, you still decide to keep the same eating habits, you can try to choose meat and eggs that have been obtained by free-range farming, which is a type of farming that lets animals walk freely within an area and is slightly less harmful for them. However, the environmental impact of free-range farming is being debated because it may be even less sustainable since animals consume more natural resources while being free.
- Reducing the consumption of meat, fish, dairy products, honey, and other products that are animal-derived and changing a diet to a vegetarian or vegan one could greatly help both animals and the environment to prosper.

### 2.3. Job sectors affected and emerging green jobs

Green jobs refer to decent jobs that help reduce negative environmental impact ultimately leading to environmentally, economically, and socially sustainable enterprises and economies (ILO, 2013). Although green jobs focus on the environmental aspects, they should balance the three dimensions of sustainability: the economic one, by creating jobs that are realistic and profitable; the social one, by promoting decent jobs and benefiting local communities; and the environmental one.

According to the Save the Children organization (2022), seven main principles define green jobs:

- 1) They are decent jobs.
- 2) They include self-employment and wage employment.
- 3) They are accessible to vulnerable people who are most impacted by inequalities and discrimination.
- 4) They contribute to the realization of people's rights.
- 5) They promote gender equality.
- 6) They help preserve or restore the environment and the climate.
- 7) They help communities adapt to the effects of climate change.

As was mentioned above while explaining the significance of learning green skills, the job market is changing greatly with more environmentally sustainable jobs appearing every year. The authors of *YouthXchange: Green Skills and Lifestyles Guidebook* (2016), published under the supervision of UNESCO and UNEP, believe that while it is probably impossible to know the definitive list of all green jobs that will appear, there are potential trends in the job market. For example, some additional jobs, such as technologists working with renewable energy will be created as new markets grow around technologies and services to reduce greenhouse gas emissions. Moreover, there will be changing demand due to new regulations and purchasing patterns; hence, some jobs will emerge, for instance, because of the shift from fossil fuels to renewable sources, whereas certain jobs may be eliminated without a direct replacement, for instance, if packaging materials are discouraged or banned and their production is decreased. Many existing jobs (especially plumbers, electricians, and metal workers) will be transformed and redefined as skill sets, work methods, and profiles become greener. Therefore, all sectors need a sustainable outlook because new sustainable processes are being adopted.

Below, I am going to list some of the major sectors that have been changing towards sustainability, already existing jobs that are going to require reskilling, and some of the green jobs that may consequently emerge. The following summary is mainly based on two resources: “Skills for Green Jobs: A Global View: Synthesis Report Based on 21 Country Studies” (2011), published by ILO, and “YouthXchange: Green Skills and Lifestyles Guidebook” (2016), published by UNESCO and UNEP.

1) **Agriculture and forestry.** Farming is the field that employs the majority of working people all over the world (ILO, 2011). The change in farming skills is driven by changing environmental conditions which force farmers to adjust their techniques to the new circumstances. With a growing world population, the agriculture sector needs to explore ways of improving its activities, minimizing water, chemical fertilizer, pesticide consumption, growth hormones for livestock, and feeding additives (YouthXchange: Green Skills and Lifestyles Guidebook, 2016). Moreover, there is a need to cultivate new crops that will thrive in the new climate as well as reduce the use of machinery powered by fossil fuels, and move to alternatives. This requires training in managing soil fertility, more efficient and sustainable water use, crop and livestock management, a review of mechanization, supporting sustainable and organic farming, fishing, and forestry methods, and being innovative in developing enterprises that promote them.

Some of the jobs that could be useful in this field are soil scientists, plant and animal breeders, pathologists, agricultural technicians, specialists in irrigation, precision agriculture, and agricultural meteorology, organic farmers, eco-advisers in agriculture, foresters, or tree farmers (ILO, 2011).

2) **Waste and water management, recycling, and materials management.** These sectors are considered key for green jobs because they become more important as natural resources become scarcer (ILO, 2011). The main focus of sustainable change in this area is to create and support systems or technologies that help us recycle, reduce, and reuse waste while ensuring that workers are safe from exposure to harmful working conditions. In developed countries, the traditional activities in this field, such as the treatment of wastewater or the collection and elimination of waste, will be slowly reduced, but their place will be taken by emerging activities such as detecting leaks, improving the quality of sanitation, and educating consumers, which will require a higher level of training.

Some of the jobs that could be useful in this field are waste prevention manager, operator in the recycling industry, plant manager, specialists in green chemistry such as chemical engineers, industrial chemists, lab technicians, biochemical engineers, chemical plant and system operators, sanitation-related occupations, masons, artisans, mechanical fitters, and trainers and motivators who raise awareness and stimulate demand (ILO, 2011).

3) **Tourism.** Eco-tourism is developing in many countries as more and more consumers demand services that do not harm the environment (ILO, 2011). There are opportunities for encouraging greener transport, creating a realistic offset of carbon, ensuring that caterers and hoteliers follow green principles and that municipalities encourage the adoption of schemes, such as the Blue Flag system, which indicates that beaches are managed to benefit people and the environment (YouthXchange: Green Skills and Lifestyles Guidebook, 2016). Tourism services should promote responsible travel to natural areas, conserve the environment, sustain the well-being of local people, and involve interpretation and education.

Some of the jobs that could be useful in this field are already existing jobs, such as tourist guide, hotel manager, resort operator, souvenir shop assistant, and clerk in the tourist office, which will most probably remain. However, their profile will have to change as people in these professions need to be knowledgeable about environmental concerns and able to incorporate issues of biodiversity, forest rehabilitation, and climate change adaptation into their daily businesses. These skills are mostly acquired through continuing or on-the-job training (ILO, 2011).

4) **Renewable energy.** This sector has a high potential for employment and the most dynamic labor market for newly emerging green jobs which are connected to the production of renewable energy equipment, the production and delivery of renewable energy rather than fossil fuels, and the development and installation of energy-efficient equipment so that less energy is used overall and delivering services within the energy efficiency sector (ILO, 2011; YouthXchange: Green Skills and Lifestyles Guidebook, 2016).

Some of the jobs that could be useful in this field are renewable energy engineers, consultants, auditors, quality controllers, installation and maintenance technicians, solar energy production technicians, wind energy operations managers, wind energy engineers and wind turbine service technicians, climate designers, policymakers, and lawyers specializing in renewable energy legislation (ILO, 2011).

5) **Transport and logistics.** Logistical services are the heart of globalized economies, and due to the increase in fuel prices and environmental concerns, the development of alternative means of energy and transport is going fast (ILO, 2011). Workers who possess new engineering and technical skills are needed in order to develop new and more energy-efficient engines, rail and public transportation, design and produce more fuel-efficient motor vehicles, planes, car sharing schemes, and delivery services using less polluting means of transportation. The transport and logistics sector is unlikely to create many new occupational profiles but will be affected by significant skill changes in existing occupations. Some of the jobs that could be useful in this field are engineers, developers, craftspeople such as welders who need to incorporate principles of eco-design into their work, car mechanics, car leasing clerks and managers, bus drivers, train conductors, public transport managers, specialists in the aerospace industry who will be occupied with reducing the aviation industry's carbon emissions, and other specialists in manufacturing, repairing, project selection, carbon accounting, and marketing (ILO, 2011).

6) **Building.** In recent years, the issue of energy-saving has been widely studied, and given that energy used in buildings for heating or cooling constitutes a huge share of overall energy consumption, one of the ways to reduce it is through improved insulation, heating and cooling systems, building materials, and the use of renewable resources (ILO, 2011). The demand for greener building technologies for insulation, windows, doors, materials, and monitoring systems is rising as more clients choose eco-sustainable and energy-efficient solutions and governments change legislation that sets new standards to reduce energy consumption in buildings. The perspective of working in the building sector mostly consists of being green developers who favor the use of environmentally friendly building materials and prioritize the energy and water efficiency of buildings, thus transforming them into ecological facilities.

Some of the jobs that could be useful in this field are architects and landscape architects, building materials specialists, building service technicians, civil engineers, construction workers and managers, cost estimators, electricians, electrical engineers, energy auditors and consultants, heating engineers, insulation workers, painters, plasterers, roofers, plumbers, sales representatives, solar installation specialists, and wind energy technicians (ILO, 2011).

7) **Manufacturing.** This sector has huge potential for greening as well. Production processes can become more sustainable if green technology and improved materials are applied, inputs



of energy and outputs of waste are reduced, and products are used for as long as possible (ILO, 2011). Furthermore, it is essential to change the way products are made so that they are easier to maintain and recycle, redesign industrial processes so that the by-products from one process can be used to make something else, recycle or remanufacture products instead of making them from raw materials, and switch to combined heat and power, where the heat generated in the production of electricity is captured and used for heating (YouthXchange: Green Skills and Lifestyles Guidebook, 2016). Clothing and accessories should be made from natural or organically produced fabrics, which reduce pollution, or recycled materials, which support upcycling and reduce raw material demand. Also, it will be useful to buy second-hand clothing and produce washable and reusable hygiene products that embrace the green economy.

Some of the jobs that could be useful in this field are executive managers, researchers, developers, engineers, industrial technicians, machine operators, refrigeration mechanics, pollution control officers, and eco-designers. The majority of jobs that already exist on the market will remain; however, as in other areas, they will require learning new green skills that will help them adjust to new demands. Existing job competencies will have to be revised in a wide variety of occupations, including auto mechanics, supply technicians, and jobs related to working with materials like leather, plastic, and lead that will help to minimize pollution (ILO, 2011).

**8) Food and catering.** As a response to the climate crisis, some restaurants have been adopting more green changes, such as only using more sustainable products and local ingredients and trying to reduce food miles and carbon emissions they generate (YouthXchange: Green Skills and Lifestyles Guidebook, 2016). Moreover, restaurants can join the green economy by controlling numerous labeling schemes that certify sustainably managed fisheries and farms. Some restaurants are reducing the number of meat dishes offered because producing meat uses up more land, water, and energy for harvesting and transport than producing vegetables. Some are also working towards food waste prevention and reduction, looking at the way they prepare food, serving adapted-size portions, and letting customers take away what is left.

Some of the jobs that could be useful in this field are sustainable chef, sustainable food and beverage manager, and restaurant manager (EHL Hospitality Business School, n.d.).

9) **Administration, management, and politics.** Green economies require managers at all levels to have skills for responding to climate and environmental changes and developing regulations accordingly since these new regulations will become drivers of change for business managers (ILO, 2011). Government administrators must be able to respond to natural disasters by learning risk management and other skills. Blending politics with the environment may contribute to including environmentally friendly principles in political campaigns and policies that will initiate and maintain change in other sectors (YouthXchange: Green Skills and Lifestyles Guidebook, 2016).

Some of the jobs that could be useful in this field are forest area managers, protected natural reserves managers, public environmental inspectors, and experts in environmental politics (ILO, 2011).

10) **Business and financial services.** Changes in skill requirements are happening in this area, too. Emerging occupations help make environmental improvements to businesses, provide advice on how to improve the efficiency of energy, water, and other resources, minimize waste, and improve commercial trading of materials, logistics, and expertise (ILO, 2011). As innovators are constantly looking for secure funding to enable them to share great sustainable ideas, working in the finance sector allows them to promote green economies. Finance companies are increasingly providing analysis and information about clean energy and carbon markets, which help investors make informed decisions about the development of sustainable businesses and innovations in clean technology (YouthXchange: Green Skills and Lifestyles Guidebook, 2016).

Some of the jobs that could be useful in this field are environmental consultants, environmental auditors, carbon consultants, managers, loan officers, investment bankers, venture capitalists, commercial lawyers, and technical and financial bank office clerks (ILO, 2011).

11) **Retail.** As consumer demand changes, this sector will have to equip its workforce with new skills that will allow workers to make sure that supply chains for goods align with sustainable criteria, control certain aspects of production and distribution processes, and identify improvements (ILO, 2011). Due to the fact that national food industries are being affected by the demand for local products, new marketing skills will be required in supply chains to help small producers sell their products and maintain contact with consumers.

Some of the jobs that could be useful in this field are sustainability managers and marketers (ILO, 2011).

**12) Education and training services.** This sector has perhaps the most critical importance in the green transition as it is responsible for disseminating basic knowledge about environmental changes and sustainability (ILO, 2011). Teaching environmental awareness, sustainable development, biodiversity, green economy, and other skills can aid learners in making responsible choices in their daily lives. Educators who integrate these issues into school activities can empower learners, especially youth, to adopt more sustainable lifestyles and spread the message (YouthXchange: Green Skills and Lifestyles Guidebook, 2016). Furthermore, it will help to prepare a skilled workforce able to adopt and maintain green technologies, introduce innovations, and implement new policies in greening industries. The authors of “Textbooks for Sustainable Development: A Guide to Embedding” (2017), published under the supervision of UNESCO and the Mahatma Gandhi Institute of Education for Peace and Sustainable Development, note that the change is required in study materials as well; therefore, it would be beneficial that the developers of student books, documentaries, and cartoons integrate the topics of environment and sustainability in these and other educational materials.

Some of the jobs that could be useful in this field are teachers, trainers, instructors, school managers, public administrators, and developers of study materials and educational policies (ILO, 2011).

## 2.4. Skills for a green economy

The subject of green jobs is directly related to the concept of green skills which is quite wide, and there is probably no specific definition that would describe all its dimensions completely. However, one of the definitions, proposed by the organization Save the Children (2022), states that green skills refer to the knowledge, abilities, attitudes, and behaviors that help to access and perform green jobs and make sustainable consumption and lifestyle choices every day, contributing to sustainable environmental development.

Although green skills are relevant for people of all ages, they are of greater importance for younger people, who can contribute to the ecological transition over a longer period (UN, 2023). With the world facing challenges like climate change, resource depletion, and

biodiversity loss, possessing green skills is becoming increasingly vital. The traditional job landscape is evolving, and industries are adopting environmentally conscious practices to meet global sustainability goals. This shift creates new employment opportunities and demands a workforce that understands the complexities of sustainable practices and can drive innovation in line with environmental considerations.

One of the main challenges that young people face in accessing green jobs is the lack of clarity on career paths and training resources, as well as the lack of mentoring or support systems to develop a green career (UNFCCC, 2023). According to the ILO (2022), 100 million jobs can be created through the transition to sustainable energy sources and a circular economy scenario. However, some existing jobs are expected to become obsolete, and the advantages of the transition are unlikely to be distributed unless adolescents are provided with the necessary training and support systems (UN, 2023).

The benefit of green skills is that they empower individuals to prosper in the emerging green economy and contribute to building a more resilient, equitable, and sustainable global community. They also extend beyond traditional environmental disciplines and encompass renewable energy, sustainable agriculture, waste management, conservation, and urban planning. They draw on knowledge, values, and attitudes to facilitate environmentally sustainable decision-making at work and in life.

There are various classifications of skills for a green economy that vary depending on the focus of the definition, country, and green job tendencies. Below, I am going to list three of them which were created by influential organizations such as the International Labour Organization (ILO) (2011), Save the Children organization (2022), and the Department for Environment, Food and Rural Affairs (DEFRA) of the UK government (2008).

The first classification represents a set of core skills necessary for green jobs that were identified by the ILO in their “Skills for Green Jobs: A Global View: Synthesis Report Based on 21 Country Studies” (2011) and which includes eleven main skills such as:

- 1) Adaptability and transferability skills to enable workers to learn and apply the new technologies and processes required to green their jobs;
- 2) Communication and negotiation skills to discuss conflicting interests in complex contexts;

- 3) Consulting skills to advise consumers about green solutions and to spread the use of green technologies;
- 4) Coordination, management, and business skills to facilitate holistic and interdisciplinary approaches incorporating economic, social, and ecological objectives;
- 5) Entrepreneurial skills to seize the opportunities of low-carbon technologies;
- 6) Environmental awareness and willingness to learn about sustainable development;
- 7) Innovation skills to identify opportunities and create new strategies to respond to green challenges;
- 8) Marketing skills to promote greener products and services;
- 9) Networking, IT, and language skills to perform in global markets;
- 10) Strategic and leadership skills to enable policymakers and business executives to set the right incentives and create conditions conducive to cleaner production, cleaner transportation, etc.;
- 11) Systems and risk analysis skills to assess, interpret, and understand both the need for change and the measures required.

By taking apart the definition provided above, we can see that there are two categories of green skills: 1) those that adolescents need to access and perform green jobs, and 2) those that help adolescents make sustainable consumption and lifestyle choices daily. In fact, another classification, proposed by the organization Save the Children (2022), points out that all green skills consist of skills for the “world of work” and “world of life”.

The first category, green skills for the “world of work”, is represented by the following set of skills:

- 1) Transferable life skills: communication skills, higher-order thinking skills, positive self-concept, self-control, and social skills;
- 2) Engineering and technical skills: hard skills encompassing competencies related to the design, construction, and assessment of technology usually mastered by engineers and technicians with regard to environmental sustainability;
- 3) Technical and Vocational Education and Training (TVET): includes competencies needed for the installation, repair, management, operation, and maintenance of technologies and/or practices with reduced environmental impact;
- 4) Coordination, management, and business skills: to facilitate holistic and interdisciplinary approaches incorporating economic, social, and ecological objectives;

- 5) Green entrepreneurial skills: to seize the opportunities within the green economy, by developing sustainable business models and plans that tackle environmental challenges;
- 6) Innovation skills to identify opportunities and create new strategies to respond to environmental challenges;
- 7) Awareness and knowledge of environmental issues, impacts, and risks that affect or could affect communities, to be able to identify solutions to environmental and climate change challenges (including climate change adaptation solutions);
- 8) Knowledge of environmental rights;
- 9) Systems and risk analysis skills: to assess environmental and climate change risks, interpret them, and identify the measures required to reduce or mitigate risks;
- 10) Marketing skills: to promote greener products and services;
- 11) Advocacy and campaigning skills: to influence the creation of green jobs, sustainable consumption, and sustainable lifestyles;
- 12) Adaptability and transferability skills: to enable workers to learn and apply the new technologies and processes required to green their jobs.

The second category, green skills for “the world of life”, is represented by the following set of skills:

- 1) Transferable life skills: including communication skills, higher-order thinking skills, positive self-concept, self-control, and social skills;
- 2) Knowledge of environmental issues: including basic environmental concepts, environmental problems affecting adolescents and their communities, and sustainable development;
- 3) Sustainable environmental practices: applicable in adolescents' daily lives, that contribute to environmental sustainability (e.g., recycling, walking or using public transport instead of a private car, using solar energy to power the house or for water heating, etc.);
- 4) Conscious consumerism: conscious consumers and their purchasing power can increase the demand for green products or services, or products or services that have been created with a reduced or positive environmental impact, supporting the creation of green jobs and a shift to the green economy.

Transferable life skills should be delivered to all adolescents, whereas a selection or combination of other green skills should be promoted in job programs depending on the objective of the program and the job market. This set of skills should help young people

access jobs in organizations that are providing green products or services or reducing the environmental impact of their production processes as well as in daily life.

Moreover, there is another classification that is worth mentioning, as it represents, perhaps, the most elaborated checklist of green skills and was proposed by the UK (DEFRA, 2008). It consists of ten categories of skills that include design, waste, energy, water, building, transport, materials, financial, management, and policy and planning areas, which are then divided into subgroups with the examples of skills provided. The complete “Green Skills Checklist” can be found in the Appendix.

As we can see, these three classifications are similar, but not the same, and complement each other as the areas discussed in them sometimes differ. For example, we can notice that ILO’s classification (2011) consists of more general, main skills required for emerging green jobs, but it does not include any skills related to design, waste, energy, water, building, transport, and materials areas and only mentions some skills related to financial, management, and policy and planning areas of DEFRA’s classification (2008). Moreover, although ILO’s classification (2011) and Save the Children’s classification (2022) have in common skills such as adaptability and transferability, coordination, management, systems and risk analysis, marketing, innovation, and entrepreneurialism, the latter classification is more extensive and includes other skills related to engineering, TVET, advocacy and campaigning, knowledge of environmental rights and issues, sustainable environmental practices, and conscious consumerism. Furthermore, if we compare Save the Children’s classification (2022) and DEFRA’s classification (2008), we will notice that they have some skills in common (technical, TVET, coordination, management, and business), but differ in the sense that the former additionally represents other categories of skills related to “self” (e.g., transferable life skills, awareness and knowledge of environmental issues, conscious consumerism, sustainable environmental practices), whereas the latter focuses on more sector-specific skills (e.g., design, waste, energy, water, building, transport, materials skills).

In conclusion, it can be noted that, no matter the fact that all three classifications are significant and influential in the field of sustainable development, it does not mean they are exhaustive. For instance, in the previous chapter, green job sectors such as tourism, food and catering, and education and training were described. However, even though there are some general skills in the above-mentioned classifications that could be implemented in these

areas, there are no specific skills related to these categories. Thus, there seems to be a gap that requires monitoring job development as well as constant reformulation of taxonomies. Since the concept of the green economy is relatively young, green jobs and skills keep changing and new ones emerge continuously; therefore, the classifications that will follow will have to be updated accordingly.

By educating adolescents about green skills, we can empower them to analyze complex sustainability issues, propose innovative solutions, and communicate their ideas to various audiences. These holistic skills enable young individuals to drive change on both personal and societal levels. In addition to teaching about areas of consumption, green jobs, and green skills, it might be useful to provide students with a list of questions, proposed by The YouthXchange Green Skills and Lifestyles Guidebook (2016), which could help them reflect independently on their behavior and habits and guide them towards a new, more sustainable lifestyle.

- 1) How can you conserve water in your area? Monitor your water consumption every day and explore ways of reducing and reusing your water at home, school, or the workplace. Share your tips with your family, friends, and community.
- 2) How can you contribute towards reducing the ecological footprint?
- 3) Can you find fair trade, organic food, and more sustainable products locally? What can you do to raise awareness about them among your peers and the public? Research your local companies, see what products are locally and fairly traded, and support them.
- 4) What services and suppliers do you use? How do your purchases affect the environment?
- 5) Does your local community have any green waste management policies? What can you do to support these policies?
- 6) Can you move to a personal green economy, one where you have minimal impact on the planet and your consumption is more sustainable? How can you support local food, sustainable products, and ethical trading?
- 7) What electricity, gas, and water bills do you have? How could they be reduced?
- 8) What modes of transportation do you use? How can you alter your transport methods to include more sustainable options?
- 9) If you are already employed, how can you make your job greener?



10) After learning about green skills, which job or volunteering opportunities could, in your opinion, help you develop them?

### 3. Teaching sustainability without causing eco-anxiety

While having discussions on climate change, the dialogue is usually focused on physical effects, and mental health consequences, such as climate anxiety, are often overlooked. However, research (Marks et al., 2021) shows that young people are anxious about climate change, and it should not be trivialized but rather taken seriously because this anxiety can be truly debilitating.

Climate anxiety, or eco-anxiety, is distress about climate change and its impacts on the landscape and human existence (Harvard Health Publishing, 2022). The American Psychological Association (2017) describes it as “a chronic fear of environmental doom,” which can stem from direct experience of extreme weather events and environmental change (e.g., floods, forest fires, hurricanes, drought) or exposure to climate change information through news media and other sources. That can manifest as intrusive thoughts or feelings of distress about future disasters or the long-term future of human existence and the world, including one’s descendants. Some scholars (Whitmarsh et al., 2022; Hajek & König, 2023) believe that individuals who already have generalized anxiety are more likely to suffer from heightened anxiety about climate change. Even though eco-anxiety is not yet considered a mental illness, many experts characterize it through a variety of symptoms, which, according to the Mental Health Commission of Canada (2023), include:

- 1) Obsessive thoughts about the climate
- 2) Fatalistic thinking (“Since it’s too late to save the planet, why bother trying?”)
- 3) Existential dread, or feeling despair and uncertainty when thinking about life
- 4) Guilt related to your carbon footprint
- 5) Anger or frustration toward older generations or government officials who have not done enough to curtail climate change
- 6) Feelings of depression, anxiety, or panic
- 7) Grief and sadness over the loss of natural environments. This is sometimes called solastalgia (Albrecht, 2007), a sort of homesickness that arises when a person’s home environment is damaged or otherwise altered by environmental change.
- 8) Trouble sleeping or concentrating

- 9) Changes in appetite.
- 10) Heart racing and shortness of breath.

Young people represent one of the fragile groups that are expected to suffer more of the consequences of climate change and tend to be more fearful of their future as a result (Hickman, 2021). No matter the fact that it should be a priority to educate students about climate change, teach them sustainable lifestyles, and help them engage with global problems, dramatically discussing environmental issues may scare students rather than inspire and empower them to action. Therefore, teaching about this burning and sensitive topic should be done carefully, and further, I am going to discuss how teachers can build gentle yet effective communication with their students and help them cope with eco-anxiety. The following recommendations are based on the information provided by sources such as Enviral (2019), the Council of International Schools [CIS] (2022), Education Week (2023), the Mental Health Commission of Canada (2023), and other authors.

- 1) **Start with yourself and go inward.** Before having a conversation with students, it might be useful to first identify how we feel about the climate change issue and what eco-emotions we experience. You can reflect on your emotions by asking yourself the following question: How do I feel about the impact of climate change? How do I feel about my students living in uncertain times? What sensations in my body do I experience when I think about climate change? In what ways could I support myself as I process this? (speaking with a colleague, friend, or family member, taking a walk in nature, and taking climate action). Identifying how we feel may allow us to truly empathize with students when they share their feelings, listen to them without judgment or fear of what this conversation might bring up because we have already discovered those feelings in advance, and give them a chance to have an open and honest conversation (CIS, 2022). Being transparent with kids about your feelings will help them learn that anxiety is normal and manageable and that feeling less anxious does not mean caring less or being less committed to action. If you realize that you are getting overwhelmed during the conversation or that you are dealing with especially intense anxiety, it is best to take some space for yourself and continue when you are feeling calmer.

- 2) **Choose the right time and place.** Try to organize the discussion when your students feel calm, prepared, and have enough time, and when you can be sure you can dedicate all your attention without being distracted by other duties. Moreover, it is advantageous to choose an environment where all participants feel comfortable and safe to talk and where there are not too many distractions. Taking the conversation outside could help engage students in the topic area and discuss the relevance of climate change to nature. Try to ensure there is space for them to think and speak, there is time for everyone to process the dialogue afterward, and you will be available both physically and mentally for follow-up conversations and questions (CIS, 2022).
  
- 3) **Tell the truth.** When hearing students concerned over a serious problem, it can be tempting to tell them an edited version of the truth to reduce their distress and protect them from difficult and scary news. However, they are already exposed to these stories due to social media, and giving them an age-appropriate, truthful explanation of what is happening can provide them with agency when deciding what information to pay attention to. It is important to gain students' trust by being transparent, as this can increase the chances of students asking questions to their knowledgeable teachers rather than seeking out information online that could be fake or disturbing. Being honest also means to admit when you do not know the answer to the question your students may ask, acknowledge the question, and perhaps return with an answer after doing some research. Always keep in mind that you, as an educator, do not want to tell half-truths, but you also should not overload students with heavy information. Therefore, try to ensure the balance is weighted accordingly: for every difficult piece of information, continue with solution-based facts or stories that could inspire young people and provide them with hope and connection (CIS, 2022).
  
- 4) **Make sure your wording is appropriate.** Think carefully about which terms associated with sustainability and the climate crisis invoke the most reaction and encourage positive action. To avoid alienation of the audience, do not use jargon language that is too difficult to comprehend, and if used, explain it thoroughly to make sure that students understand its meaning (Enviral, 2017). Otherwise, there is a risk of boring students, thereby reducing the effectiveness of communication.

5) **Do not exaggerate the facts and teach students fact-checking.** In a 2021 survey of young people (Hickman et al.), 75 percent of respondents reported feeling that the “future is frightening,” and very few reported feeling optimistic. Although it may seem that instilling worry will motivate people to act, it is irresponsible and counterproductive, as it may lead directly to developing climate anxiety and forcing people to have the wrong idea that it is too late to make a change. Explain to students that while it is useful to be informed, submerging yourself in a stream of negative climate news does not lead to any benefit, but vice versa demotivates and creates feelings of anxiety and hopelessness. Instead of oversaturating, teachers should emphasize that, while climate change is real and some impacts, such as ice sheet melting and sea level rise, are already irreversible, actionable solutions do exist to keep climate goals within reach, and therefore our fate is far from settled (Mann, 2022).

Moreover, it might be extremely beneficial to teach students to fact-check the news they encounter on the web or hear from other people as well as control their use of social media. Although it offers a variety of useful information, on the other hand, social media can be a source of fake news or news overload which may both result in anxiety, behavioral problems (Bozzola et al., 2022), depression, and low self-esteem (Koehler & Parrell, 2020). Therefore, it is crucial to be able to limit the time you spend online and filter the news pages or accounts you follow, as it can aid in staying mentally healthy and on track with action.

6) **Ask students questions.** Everyone has a different personality and behavior patterns, which suggests that while talking about climate change, some students may immediately show their curiosity by asking questions, whereas others may be more reserved and will not share their worries. Hence, it is essential to ask them questions, too, which will give a teacher a chance to find out what they already know, where the knowledge is lacking, and consequently plan how to build a conversation with regard to their needs and debunk any wrong beliefs they may potentially have (CIS, 2022). You may start the conversation by asking students what they have heard about climate change, where they found this information, if they know what is being done to fight climate change, and what they think they can do to lead a more sustainable life. Ensure that everyone feels safe and respected to share their opinions, take their thoughts seriously, and correct them gently, where appropriate.

- 7) **Listen to and validate students' emotions.** Climate change can be a difficult and uncomfortable topic, so teachers need to make space for students to talk about their feelings. Without having an opportunity to discuss their questions and concerns in a safe space, there is a risk that students will feel isolated and will develop eco-anxiety (CIS, 2022). Hence, it is significant to listen, be compassionate, acknowledge and validate students' emotions about this issue, even if they differ from the feelings of the teacher, and be curious about trying to understand what climate anxiety feels like. Learning how students feel about the climate crisis allows teachers to help them develop the resilience that they will need to deal with feelings about big world changes. Furthermore, teachers may use those emotions as a way of coping, for example, by sparking a passion for a certain issue a student is worried about and could get involved with. It could be beneficial to discuss which activities can help students when they feel climate emotions, such as talking to someone they trust, meditating, going for a walk, reconnecting with nature, or reading. If, at a certain point, it becomes clear that a student is suffering from eco-anxiety and its symptoms start having an impact on their life, reach out for additional support, such as from a mental health professional (Mental Health Commission of Canada, 2023).
- 8) **Tell them that even the smallest actions can help.** Explain to students that it is not necessary to become a climate activist or join strikes to help the environment because change starts within each person and there are various ways to make your daily routine more sustainable and thus inspire other people around you to follow your example (Mental Health Commission of Canada, 2023). Make them understand that they should focus on what is under their control, including actions they can perform to reduce their negative environmental impact and sustainable things that they could do directly on the school grounds, such as taking charge of a recycling or compost program or petitioning school officials to introduce green initiatives at school. Being sustainable is often seen as a sacrifice to other ways of living; try to shift this narrative to make sustainability desirable by discussing with students its advantages and positive consequences for the environment and their current and future well-being (Enviral, 2019).

- 9) **Encourage students to develop a direct relationship with nature.** Research from environmental educators has found that direct contact with nature is a key component in developing care for the environment (Broom, 2017). Moreover, spending time in a natural setting can help students feel happier, lessen the effects of both physical and mental stress, and improve their cognitive capacity and attention span (Meredith et al., 2020). Therefore, it could be beneficial to take students on hikes, visit parks, and encourage them to spend more time outside.
- 10) **Highlight both local and international solutions.** Emphasize solutions that communities and countries are currently implementing. For example, you can present Project Drawdown which is a nonprofit organization of scientists, researchers, and fellows who have a mission to help the world reach a drawdown and stop climate change quickly and safely (Project Drawdown, 2014-2023). This is also a great opportunity to teach students about international cooperation and treaties to make them understand that there are a lot of people who are worried about the climate emergency and that change is happening at all levels (Education Week, 2023).
- 11) **Tell students that they are not alone and encourage them to take collective action.** It may be hard to deal with this issue on your own, but millions of people are making changes all over the world. Moreover, Yale researchers have found that collective action against climate change can reduce eco-anxiety (Schwartz et al., 2022). Encourage kids to focus on what they can do with others, such as joining or organizing green teams and environmental clubs and connecting with a community to create solutions to their climate anxieties and always be surrounded by like-minded people with whom they can share and explore their emotions. When students are connected to others, they are less likely to feel isolated in their distress and more likely to feel motivated to take action (Mental Health Commission of Canada, 2023). Moreover, feeling part of something big and useful that is happening to save our planet can help build self-esteem. To provide examples of adolescents making change, teachers can highlight U.S. House resolutions that were written by young students who came together to take action or the 16 Montana youths who are suing their state over climate change.

12) **Stay optimistic.** Remind students that, no matter that climate change is real and we witness its consequences every day in real life and on social media, on the other hand, there are wonderful positive steps that people have been taking over the last few years to fight climate change (Enviral, 2019). There are thousands of activists, volunteers, those who join strikes, companies introducing sustainable methods into the production of food, clothes, vehicles, and other goods, as well as countries uniting to sign climate emergency declarations, and governments introducing new measures to tackle the climate crisis. Tell stories of a cleaner and greener world and how we can get there by providing students with actionable solutions. Remember it yourself and spread this famous Henry Ford quote among your students: “Impossible only means we have not found the solution yet.”

Following these tips while having a conversation about the climate crisis with adolescents could reframe the issue as a problem to be solved rather than an inevitable prophecy. Consequently, it may help students learn more about the environment and sustainable actions and stay mentally healthy. It is essential to help them make sense of what is happening in the world and the emotions they feel about it, as it allows them to build resilience and learn to navigate their personal and collective paths as they grow. Moreover, these discussions may help students recognize their place in the climate movement and how they can contribute to making change. Teachers have the power to explain to their students that it is possible to keep anxiety under control and that it can encourage them to mobilize and take very meaningful, even if small, steps toward sustainable life that may save our planet (Whitmarsh et al., 2022; Ballew et al., 2023).

#### 4. Conclusion

In conclusion, I would like to highlight the significance of equipping young individuals with the necessary knowledge and skills to embrace and promote green lifestyles. By promoting sustainable behaviors such as recycling, energy conservation, and responsible consumption, we can foster a generation that actively participates in mitigating climate change and preserving our natural resources. By having environmental education integrated into their curriculum, adolescents can develop a strong foundation for embracing green jobs and acquiring green skills, which are essential for a sustainable future and encompass not only an understanding of environmental issues but also the ability to apply sustainable solutions in

various aspects of life. Moreover, it is crucial to prepare adolescents for green jobs, which are becoming increasingly relevant in today's rapidly changing world. By instilling a sense of environmental responsibility and providing them with the tools to address sustainability challenges, we can empower adolescents to pursue careers that contribute to a greener economy.

Scientific evidence supports the usefulness of environmental education in changing behavior and saving our planet. For instance, the meta-analysis conducted by Wetering et al. (2022) demonstrated that environmental education offers an effective approach to improving the environmental knowledge, attitudes, intentions, and behavior of young people. Other studies have shown that when adolescents are educated about environmental sustainability, they are more likely to adopt eco-friendly practices and make informed choices that positively impact the environment (Ian et al., 2019; Olsson et al., 2022). Education for sustainable development not only benefits the present but also lays the foundation for a sustainable future, and teaching environmental sustainability to adolescents is vital for promoting green lifestyles, preparing them for green jobs, cultivating green skills, and ultimately contributing to the preservation of our planet. By investing in their education and empowering them to become environmentally conscious individuals, educators can pave the way for a sustainable and resilient future for generations to come.



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## 6. Appendix. Green Skills Checklist

**Table 5.4. Green skills checklist (United Kingdom)**

Tier 1	Tier 2	Tier 3
<b>1. Design skills</b>	Eco-design	Design for disassembly, design for recyclability, design for the environment, design for effective energy use, legislation and regulatory compliance
	Green manufacturing	Legislation and regulatory compliance, integration of process waste
	Materials specification	
	Life-cycle assessment/costing	
<b>2. Waste skills</b>	Waste quantification and monitoring	Waste production calculations, mass balance, waste audit
	Waste process studies	Material/substance flow analysis, resource utilization mapping, life-cycle assessment
	Waste management systems	Objective setting, legislative and regulatory compliance, collection systems, segregation, waste cycle management, 3R implementation (reduce, reuse, recycle), hazardous waste management, landfill requirements, communications/implementation campaigns
	Waste minimization	Industrial symbiosis, integration of process waste
<b>3. Energy skills</b>	Waste technologies	Recycling, waste-to-energy
	Energy minimization	Energy reduction programmes, heat recovery and re-use, energy-efficient technologies, energy-efficient practices, communications/implementation campaigns, enhanced capital allowance technologies and schemes
	Energy management systems	Objective setting, legislative and regulatory compliance, energy base loads and variable loads, energy audit, energy review, communications/implementation campaigns
	Energy quantification and monitoring	Monitoring targeting and reporting, use of half-hourly data, use of sub-meters, computer-based data logging and energy management systems, energy data manipulation software systems
	Energy costs and trading	Energy markets and pricing, carbon trading schemes, climate change levy agreements, energy price trends, enhanced capital allowances, peak oil and impact on energy supplies and prices
	Renewable energy (RE) technologies	Solar, wind, biomass, combined heat and power, photovoltaic, ground source heat pump, air source heat pump, hydro, hydrogen, fuel cell, integration into energy supply
<b>4. Water skills</b>	Non-renewable technologies	Nuclear, incineration with energy recovery, clean fossil fuel technologies, carbon sequestration, waste-to-energy
	Water use minimization and water re-use	Grey water, water harvesting, wastewater recovery, recycling, cascading, waste/water recovery, effluent treatment, sludge/slurry dewatering, leak detection
	Water management systems	Objective setting, legislative and regulatory compliance, water audit, water consumption review, communications/implementation campaigns
<b>5. Buildings skills</b>	Water quantification and monitoring	Sub-metering, data collection, water use calculations
	Building energy management	Monitoring targeting and reporting, use of half-hourly data, use of sub-meters, computer-based data logging and energy management systems, energy data manipulation software systems, building energy assessment
	Integration of renewable energy	Photovoltaic, solar, wind turbines, combined heat and power, fuel cell
	Energy-efficient construction	Insulation (cavity wall, loft, paperwork), regulatory compliance, passive heating, building regulations
	Facilities management	Building energy management systems, management and maintenance of water, waste management
	Calculating building energy efficiency and carbon ratings	U value calculations, building energy assessment, carbon rating

**Table 5.4. Green skills checklist (United Kingdom)**

*(Continued)*

Tier 1	Tier 2	Tier 3
<b>6. Transport skills</b>	Transport impact minimization technologies	Hybrid vehicles, biodiesel, electric vehicles, fuel-efficient vehicles
	Transport impact minimization processes	Alternative transport strategies, communication/implementation campaigns, car-sharing schemes, public transport planning, public transport implementation, cycle network planning, cycle network implementation, transport modelling
	Transport management in business	Transport modelling, route planning and management, distribution and collection system
<b>7. Materials skills</b>	Sourcing	Sources of low-energy materials, sources of low-mileage materials, recyclates (secondary materials), energy-efficient raw material extraction, industrial symbiosis, transport mileage
	Procurement and selection	Use and properties of low-energy materials and of recyclates, industrial symbiosis, low-carbon and resource-efficient procurement, cost impact of climate change on material procurement
	Material use and impact quantification	Material usage calculations, life-cycle assessment and costing
	Management systems	Material use planning, material flow process design and implementation, energy-efficient process design and implementation
	Impact and use minimization	Life-cycle assessment and costing, energy-efficient process implementation, material flows analysis
<b>8. Financial skills</b>	Investment models	Energy technologies investment models, carbon derivatives investment models, calculation of payback/return on investment
	New/alternative financial models	Carbon trading, EU Emissions Trading Scheme, UK Emissions Trading Scheme, enhanced capital allowances
	Quantification of climate change impacts	Impact assessment of climate change on business finances, impact of climate change on materials availability and cost, carbon neutrality and associated cost/opportunities (costs of doing nothing), risk/opportunity assessment models for adaptation and mitigation, insurance risks/opportunities of a low-carbon economy
	Principles of low-carbon and resource-efficient economies	Polluter pays principle, externalities
	Tools of low-carbon and resource-efficient economies	Climate Change Levy agreements, enhanced capital allowances, cost – benefit analysis, low-carbon and resource-efficient procurement
<b>9. Management skills</b>	Impact assessment	Energy use calculations, water use calculations, waste production calculations, carbon footprinting calculations, emissions measurement
	Business planning	RE planning, low-carbon planning, integration of RE and low carbon into business planning cycles, climate change risks, climate change adaptation and mitigation responses (as part of business risk management), understanding low-carbon and resource efficiency skills requirements and long-term planning
	Awareness raising	Communication/implementation campaigns
	Opportunities management	Identification of low-carbon and resource efficiency opportunities, cost–benefit analysis
	Risk management	Identification of low-carbon and resource scarcity risks, cost–benefit analysis
<b>10. Policy and planning skills</b>	Day to day management	Low-carbon and resource-efficient procurement, integration of low-carbon and resource efficiency skills, due diligence, management systems, low-carbon and resource efficiency skills requirements for recruitment
	Built environment master planning and implementation	Low-carbon spatial planning, zero waste planning, resource-efficient planning, low-carbon and resource-efficient urban design, building regulations, public transport planning and implementation, cycle network planning and implementation
	Strategy development	Impact assessment and modelling, principles of low-carbon and resource efficiency
	Strategy implementation	Understanding of skills needs for HR managers, low-carbon and resource-efficient material sourcing and procurement, awareness raising/communications skills

Source: Pro Enviro: *Skills for a low-carbon and resource efficient economy (LCREE)*, Report for DEFRA (2008). Reproduced with permission.