Teachers Teaching with Technology™

T³ EUROPE

Christine Buerki

Education for a Sustainable Development

Examples and comments on how the 17 SDG can be applied in combination with STEM

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1. A short introduction

In 2015, the UN General Assembly launched the 2030 Agenda for Sustainable Development.

It has the intention and hope, that thanks to this initiative, a more sustainable behavior of all human kind can be achieved, so that mankind will be able to meet the climate goals, which the same organization has decided in several Climate Change Conferences. The last one took place in Madrid (2019), the first one was 1995 in Berlin.

Maybe the Paris conference is one of the more famous - as many reporting on measured emissions are referring to this Conference. The negotiations during this conference resulted in the adoption of the Paris Agreement, compiling climate change reductions measures from 2020 to be able to keep the temperature rise below 2 degrees Celsius.

The year 2020 is passed, and one can do one's own balancing of the effectiveness of such amendments. The fact is, that (not taking into account all the „artificial" effects of the Corona-Pandemic) we are still using up way too much of available resources - and we are too many people on earth with too many desires / demands.

If you are thinking about how to implement the one or the other SD goal together with your STEM material, the most successful - and finally easiest way would be to focus on the exploitation of natural resources and energy demands.

There exist elemental particles, atoms, out of which everything is made: organisms, such as plants and animals - (including of course humans) and non-living objects such as cellphones, tablets, computers, vacuum cleaner, cars, wheelchairs …. and so on: just have a look around you!

To be able to produce all the objects we are adding to our personal life and environment, all these natural elements the objects are composed of, have first to be dug out of the soil. Therefore, each object has its specific backpack of raw material. Every manufacturing process needs natural resources like water, soil, air, which have to be added to get a holistic picture of how big the ecological impact of a certain product is.

In 1994, Friedrich Schmidt-Bleek published his book „Wieviel Umwelt braucht der Mensch? (MIPS – Das Maß für ökologisches Wirtschaften", Basel: Birkhäuser Verlag), in which he was introducing the public to a new measuring system he invented at the Wuppertal Institute; the so called MIPS. MIPS stands for Material Input Per Service Unit and serves as an indicator for how much „nature" sticks in a product. The calculation is not always very easy; many factors have to be considered and the process of the production and the transport needed, has to be very clear and well-documented to get a reliable result.

In the insights to the SDG 12 you will be able to go deeper into this idea and you'll learn something about the calculation of this measure.

In any case, this issue IS THE crucial one for every effort we take! It is obvious that, the more we produce, the more we build and construct, the more natural resources we consume then the bigger the impact on the environment will be. So, the aim of the diverse SDG's will be difficult to fully achieve.

I think it is a must to think about the set goals of the individual SDG's and how realistic and applicable they are.

- To whom they do address?
- What pre-requisites have to be fulfilled for a country, to meet such goals?
- Can they bring some relief do the climate change we witness in our world?
- What financial sources are needed to meet the SDG's?
- Who is profiting from whom?
- Are they, the SDGs, maybe even contradictory?

I constructed many questions which you will find included in the Complementary Material and Pedagogical Hints for UN SDG's; you can use or edit them however you like. For many of the questions there are no specific answers. From my understanding, this is a very important experience for students, as I think we have fewer answers than questions for the understanding of our planet - and- maybe of ourselves, too....

Questions can and should motivate students to dive deep and dig for possible answers. And I believe and am convinced that the most important thing today is, that students rediscover the importance of asking. Little children always have this intense „Why- Why -Why- Asking-Age". Well, after 2-3 years of regular school, many of them don't ask anything anymore at all. This is mainly the fault of we adults. Many children at school are deprived of their imagination, their questions and dreams. Only a minority of adults encourage children to think independently - out of (our) borders - laterally – systemically and encourage them to have their own dreams and visions! Do it differently! Get your students to have visions and regain the ability to ask questions!

No specific age of learners is addressed in the complementary material. I imagine that you, as an expert on your students, can very well select and adapt my ideas to the level you think it will be adequate for their needs.

For the generation now in school, or just entering school, we don't even know if the profession they will do later exists today. So it is crucial for their skills that they regain the instinct of asking and recover their imagination. It is not an easy task, as all these tech-toys are overwhelmingly attractive, 24/7 abundant and the addiction to them is steadily increasing. How this impacts health you can explore for example in the material of SDG 03.

Use the responsibility we have as teachers or coaches and let your students find their deeper interests and priorities. They need a focal point - I don't believe, that they can be happy watching somebody fooling about or eating breakfast on a social media channel.

I hope the complementary material will be of value to you. I have put in all my passion and interests to be of service to you. If you have further questions or suggestions then please reach out to me.

With my kindest regards and respect,
All the best to you!

Christine Bürki

Expert on Sustainability
Biologist lic.phil.nat, Teacher, Mediator,

christinebuerki@mailbox.org