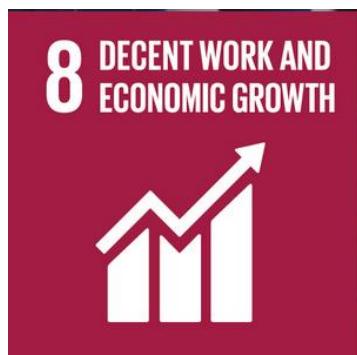




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Education for Sustainable Development

Complementary Material and Hints for the UN SDG no 08



SDG no 08: Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

1. Introduction to the topic

The Western ideology of its economy and the rules and beliefs associated with it, created a division of communities, an unprecedented loss on natural habitats and species and an unprecedented inequality in terms of distribution of resources. Thus, the "modern" Western man is once more called upon to bring about a change in thinking. Therefore, teachers and lecturers are particularly challenged.

It *mustn't* be anymore just about striving for a school diploma; the aim has to be to challenge students and encourage them to link the learning objectives with as many other subjects from different fields as possible, so that they can apply their knowledge systemically at different logical levels (the principle of logical levels, Robert Dilts ([1](#))).

Especially this is true for the SDG 08, where the title itself stands in contradiction to some other SDG's. How can an economy grow- (sustained- or not) infinitely- on a planet with limited surface and resources? With the SDG 14: „Life below water“ and the SDG 15, „Life on land“ two SDG's are directly targeting our survival, but the water and the soils are suffering most from „Economic growth“.

As there are so many contradictions occurring when one implements SDG 08 without violating or leaving aside the other SDG's, the first step should probably be to rethink our understanding of the „modern“ economy. A new meaning, a new idea and even purpose should be found. A new definition of wealth for individuals, communities and countries should be given. One model could be the idea of the GNH, the „Gross National Happiness“ Index, which is implemented in Bhutan. ([2](#)) With this index, one collects data about the happiness of citizens and no longer is the economic growth of a country (GDP) in the first place of importance. Studies revealed that economic cycles correlate with the suicide rate. ([3](#))

Once more this SDG should not be addressed in isolation, but should always be studied and taught in a multidisciplinary way. Therefore STEM-teachers are asked to reach out to their colleagues of different fields to work together:

For this SDG no 08, one can connect with colleagues from subjects like:

<u>Chemistry</u>	<u>Politics</u>	<u>History</u>	<u>Economics</u>
<u>Psychology/ Philosophy</u>	<u>Ecology / Biology</u>	<u>Ethics</u>	<u>Computer Science</u>

(The order of the topics is random and has no implication of a ranking!)

If you click on one of the [hyperlinked words](#), it will lead you to ideas for a multidisciplinary teaching in the text. With such a precious potpourri of fields and competences, you can introduce your students to the very much multifactorial aspects of sustainable cities. They should be aware, that soil resources are limited. And that therefore, always building more can't be an option.

SOURCES:

1. Logical Levels Inventory. Robert Dilts's Logical Level model: <https://www.logecallevels.co.uk/pages/logical-levels-model> , last accessed, 2021/05/14
2. GNH, Gross National Happiness Index, Website Bhutan: <https://www.grossnationalhappiness.com/articles/> last accessed, 2021/04/19
3. Relationship of suicide rates to economic variables in Europe: 2000 - 2011 (Cambridge university press): <https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/relationship-of-suicide-rates-to-economic-variables-in-europe-20002011/BED5FCDDA918CE73A5390249B83F0C57> , last accessed, 2021/04/19

2. How to implement SDG 08 with STEM education?

a. Science

Biology, Chemistry, Physics, Computer Science

- SDG 08 stands for „decent work“. Decent means „conforming“ ,generally accepted „standards“ ,appropriate. Investigate with your students actual job offers on the market of the different fields and let them find out, what for them personally means „decent“. Offer them the possibility to have a discourse on what their vision is for a „decent work“ and what they would like to have as a job for the future. Is the revenue the most important criteria? Invite to join the project your colleagues from the **Psychology** and **Philosophy** department.
- What will future workplaces look like? Let them draw and describe their ideas and visions about.
- Read the book „Brave new world“ (Schöne neue Welt) of Aldous Huxley, written in 1931. What are the „take home messages“?

Chemistry

- „Circular economy“ and „from cradle to grave“ will play / should play a key role in an economy which wants to be more sustainable in the future. In the past 60 years or plus, more than 100,000 new chemical substances have been invented and are by now somewhere and somehow in our environment. Investigate with your students the possibilities for recycling as much of those substances as possible. Get them to know the limits and the hurdles of recycling products.
- Work together with a **Biologist/Ecologist** to investigate the impact of the so called „biodegradable plastic“ on the health of the microorganisms in the soil (3)

Psychology ([more Psychology](#)), **Economics** ([more Economy](#))

- Discover and learn from the model of GNH (4) index of Bhutan and develop ideas, how this could be applicable in our western culture. What are the pros and cons?

b. Technology

- Many people are convinced, that still more and more sophisticated technology can save „our planet“ and men, too. Organize a podium, where you are presenting insights / background-stories about this topic. Dive into the ecological backpack of technic (SDG 12), too and let students give their assumptions and visions about the future role of technology.

c. Engineering

- What are the hurdles on an engineering aspect to have implemented over all applicable systems a „cradle to grave“ economy? Discuss together with a colleague from the **Economy** department.
- Look at different already existing projects of „cradle to grave“ products and try to invent / to launch a project in your school - may be even village/ city.

Methodological hint

Form small groups. Each group is working on a different perspective to this subject. They have to formulate arguments, statements, points of view. In a second round, you can let them go into a dispute/discussion (maybe with audience). (The Jigsaw-Method (5)

- The „Traveling Salesman Problem“ (TSP) is a so far unsolved problem which addresses optimization.
- Look up the following material on the Resource DB of T³ Europe (6)

d. Math

- For many sectors, not men is anymore choosing applicants for a job, but algorithms. Discuss with a **Psychologist** and **Ethicist** this tendency. (7)

SOURCES:

3. Future Direction international: Living soils; the role of microorganisms on healthy soil: <https://www.futuredirections.org.au/publication/living-soils-role-microorganisms-soil-health/> , last accessed 2021/04/19
4. GNH, Bhutan: <http://www.gnhcentrebhutan.org/> , last accessed 2021/04/19
5. TeachHub. The Jigsaw Method: <https://www.teachhub.com/teaching-strategies/2016/10/the-jigsaw-method-teaching-strategy/> , last accessed 2021/05/14
6. Who is drowning in our trash? (T3-Europe Resources): https://resources.t3europe.eu/t3europe-home?resource_id=2697&cHash=12bff06cd60c8eb5a5c11c7ee58ecd09 , last accessed 2021/04/19
7. How to hire with Algorithms (Harvard Business Review): <https://hbr.org/2016/10/how-to-hire-with-algorithms> , last accessed 2021/04/19

3. Connecting this SDG with other SDGs

Methodological hint

Encourage your students, to present the different links and dependencies in a Concept Map. This is a powerful tool, not only to show how things are linked together, but it shows you, if the student can make the links and name the dependencies. ([7](#))

Some ideas:

- SDG 01: Poverty —> In our capital economy system rich people become richer, poor people poorer. —> discover these relations.
- SDG 03: Health —> Is it accessible for everybody?
- SDG 04: Adequate education —> is it still adequate to teach „old“ thinking models, which are threatening our livelihood?
- SDG 06: In many cities, fresh water supply is a big issue
- SDG 05: Why in modern western countries women are still not equally represented as CEO's?
- SDG 07: Clean and affordable energy for a still growing economy: a contrast / divergence?
- SDG 09: More infrastructure due to economic growth: How to find a balance?
- SDG 10: Explore the **History** of capitalism and the rise of inequality.
- SDG 12: Responsible consumption —> how can this be accomplished with the mantra of growth?
- SDG 14: „Sustainable“ growth: exploitation of the wild fish resources. Problems with huge fish farms in open waters —> input of antibiotics and artificial growth factors in fragile natural habitats.
- SDG 15: Land grabbing for raw material supply for a steady growing economy

Trying to reduce the negative impact of humans on our planet with the help of the 17 SDG's, can be a really good idea to make positive impacts. There is a stumbling block to overcome: If enterprises, governments and individuals in their pursuit of following the SDG's are just focusing on one single or maybe two SDG's, there will be a huge rebound effect with other goals. So, the crucial point really is, to have always all SDG's in mind, if a new project or idea is launched.

*How the **SDG 08** is affected, if one is only focusing on one of the following goals:*

- **SDG 01, 02:** Divergence between poor and rich
- **SDG 06:** Water consumption, waste and pollution will increase
- **SDG 07:** Any energy-producing unit has its own MIPS (SDG 12). It's not only about affordable and clean energy. It's about the need of reflection our individual energy-consumption Any energy provision (renewable or not) has its own energy and CO₂ footprint.
- **SDG 09:** The more buildings, the more infrastructure, the bigger the MIPS
- **SDG 12:** Especially in cities people are mostly motivated to consume! Most kind of consumption is not sustainable
- **SDG 14:** Economic growth is using up even and polluting still more fresh-water and salt-water, too
- **SDG 15:** Economic growth is violating our land, pushing away the animals from their habitat and destroying a lot of native plants.

Methodological hint

Let the students do *scribbles* about this subject. Where do they see the negative influence of only focusing on for example SDG 12 ([8](#))

SOURCES:

7. Creately.com, The Ultimate Guide to Concept Maps: From Its Origin to Concept Map Best Practices, <https://creately.com/blog/diagrams/ultimate-concept-map-tutorial/>, last accessed 2021/04/08
8. Art by Ro, Scribbling Drawing Tutorial for Beginners, <https://artbyro.com/scribble-drawing-basics-for-beginners/>, last accessed 2021/04/08