Survey Supplement

Sustainable Development in Economic Sciences 2020

Definitions and descriptions of sustainability subject areas, transfer-oriented learning methods and sustainability-relevant shaping competences

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1. Subject Areas on Sustainability

Source: (WWF Schweiz, 2018)

The following subject areas are particularly relevant for sustainable development in economic sciences:

Subject Areas in Business Administration

Nr.	Subject Area	Description
1.	Natural Resources, Global Environmental Problems and Goals	• Global problems and challenges • Natural resources: concept, ecosystem services, special features of natural resource management • Biodiversity: goals, instruments and fields of action • Climate change: goals, instruments and fields of action
2.	Sustainable Development and Sustainability Concepts	• Definition, dimensions and objectives of sustainable development • Different concepts of sustainability and their basic prerequisites (strong vs. weak sustainability) • Key challenges of sustainable development • Sustainable Development Goals (SDGs)
3.	Proactive Corporate Social Responsibility (Alternative Business Models, Social Entrepreneurship)	• Reference to the core business: sustainable business models and social entrepreneurship • Thinking about social issues and concerns from an outside-in perspective • The role and importance of companies in society as (political) citizens («citoyen»)
4.	Reactive Corporate Social Responsibility (CSR)	• No or partial reference to the core business: donation ethics, risk and reputation management • Thinking from the company (inside-out perspective) • The role and importance of companies in society as economic citizens («bourgeois»)
5.	Sustainability Management & Sustainability Strategy	• Relevance and approaches of sustainability management from the perspective of various stakeholders and managers • Concepts and systems of sustainability management • Evaluation and reporting on sustainability measures • Definition of sustainability strategies and best practices • Gaining support for the implementation of sustainability projects
6.	Sustainable Value Chain Management	• Integrating sustainability and ethical issues in the supply chain management • Integrating sustainability and its challenges into the value chain • Management of sustainability risks and opportunities along the value chain • Corporate responsibility in value chains • Circular Economy
7.	Companies and Human Rights	• Legal and institutional framework: The duty of companies to respect human rights • The right to reparation in case of human rights violations suffered by economic actors • Current and evolving debates on corporate responsibility for the respect of human rights along the value chain
8.	Marketing, Communication and Sustainability	• Ethical implications in marketing • Interrelationships between marketing and sustainable consumption • How can negative effects of all marketing processes of the company on its natural and social environment be minimized • Concept of sustainability marketing and its benefits for sustainable development • Communication as the key to changing behaviour
9.	Sustainable Financial Mgmt (Raising Capital & Investments)	• Sustainability in raising capital on and off the stock exchange • Principles of Responsible Investment and possible strategies • Potential contribution of Responsible Investment to a sustainable economy • New methods and instruments of financial management to integrate social and environmental aspects into decision-making • Disinvestment strategies

10.	Sustainable Human Resources Management	- The role of human resources management in the development and implementation of sustainability strategies - Social and environmental effects of personnel decisions (including employee health, diversity management and employee volunteering) - Modern/participative approaches to personnel management and task distribution - Equal treatment, development and well-being of employees - Green HRM
11.	Innovation Mgmt, Digitalisation and Sustainable Development	- Importance and opportunities of innovation in solving global sustainability challenges - Key concepts and theories for sustainability-oriented innovations - Digital innovations: Opportunities and risks for sustainable development Evaluation of innovations
12.	Sustainable Consumption	- Lifestyles that have sustainability as their goal (including a sufficient lifestyle) - Sustainability in selected areas of everyday activities: housing, nutrition, mobility, leisure, health - Ecological footprint and the consequences of consumption - Promoting and inhibiting factors of sustainable lifestyles

Subject Areas in Economics

Nr.	Subject Area	Description
1.	Natural Resources, Global Environmental Problems and Goals	• Global problems and challenges • Natural resources: concept, systematics, ecosystem services, special features of natural resource management • Biodiversity: goals, instruments and fields of action • Climate change: goals, instruments and fields of action
2.	Sustainable Development and Sustainability Concepts	• Definition, dimensions and objectives of sustainable development • Different concepts of sustainability and their basic prerequisites (strong vs. weak sustainability) • Key challenges of sustainable development • Sustainable Development Goals (SDGs)
3.	Pluralism in Economics (Schools of thought)	• Various and critical understanding of science (ontology, epistemology, methodology, methods) • Heterodox Economics: Different schools of thought such as institutional economics, ecological economics and the Austrian School • Diversity of problems statements (e.g. scarcity, change and insecurity)
4.	Sustainable Economy	• Central guiding principles for sustainable management (e.g. green economy, sharing economy, public welfare economy, prosperity without growth, prosperity in time, fair globalisation) • Postal growth and prosperity and its measurability • GDP and alternative measurement of economic performance and social progress • Opportunities and risks of a sustainable economy
5.	Transformation into a Sustainable Economy	• Approaches, instruments and measures for the further development of the economy into a sustainable economy and their effectiveness • Strategy paths of a sustainable economy: efficiency, consistency, sufficiency • Policy instruments for a sustainable economy: Directly (hard) vs. indirectly (soft) acting instruments
6.	Globalisation & Sustainability	• Understanding of the consequences of globalisation for sustainable development • Connection of globalisation with development problems in the Global South • Impact of globalisation on the environment • Opportunities of globalisation for sustainable development (including globalisation to eliminate inequalities between countries)
7.	Development Economics	• Basic problems of development economics • Causes of underdevelopment • Development policy approaches and instruments • Growth and development theories • The role of development aid in economic development
8.	Equity of Opportunity and Distribution	• Gender equality • Causes and risks of unequal distribution of income and wealth • Strategies for distributive justice • Commitment by decision-makers to a fair distribution of life chances and income
9.	Sustainable Financial Economy	• Theoretical framework of sustainability and its relevance in the financial sector • Innovative and sustainable concepts from the areas of investment and financing and their influence on the sustainability of the financial system • Obstacles to greater sustainability of the financial sector • Measures for a responsible use of financial products and greater stability of the financial markets • Lessons from the financial crisis: banks as triggers of crises; derivatives and systemic risks • Ethical behaviour and role models in banking
10.	Economy of the environment, resources and climate	• Relationship between the human ecology and the natural ecological system (biosphere) • Environmental Economics: Assessment of what is put into environment: Environmental damage: Climate Economics) • Resource Economics: Assessment of what is taken out of nature

Subject Areas in Banking & Finance

Nr.	Subject Area	Description
1.	Natural Resources, Global Environmental Problems and Goals	• Global problems and challenges • Natural resources: concept, systematics, ecosystem services, special features of natural resource management • Biodiversity: goals, instruments and fields of action • Climate change: goals, instruments and fields of action
2.	Understanding and concepts of sustainability	• Definition, dimensions and goals of sustainable development • Different concepts of sustainability and their basic prerequisites (strong vs. weak sustainability) • Key challenges of sustainable development • Sustainable Development Goals (SDGs)
3.	Sustainable financial economy	• Theoretical framework of sustainability and its relevance in the financial sector • Innovative and sustainable concepts from the areas of investment and financing and their influence on the sustainability of the financial system • Obstacles to greater sustainability of the financial sector • Measures for a responsible use of financial products and greater stability of the financial markets • Lessons from the financial crisis: banks as triggers of crises; derivatives and systemic risks • Ethical behaviour and role models in banking
4.	Sustainable and Responsible Investment (SRI)	• Main concepts, history, current trend, market shares and today's product landscape and main players • Sustainable investment strategies • Socio-economic characteristics, opportunities and risks of sustainable investments • Best practices to integrate environmental, social and governance criteria into the value chain of the investment process • Assessment tools and key performance indicators for SRI risk analysis and performance measurement • Sustainability reporting and assessment, which are necessary for informed SRI investment decisions
5.	Sustainability in banks and insurance companies	• Sustainability in the banking and insurance industry, overview of theory, concepts and challenges, sustainable credit and underwriting standards • Environmental and social risks in lending • Sustainability as an opportunity: current practices and gaps • Sustainability strategy: the next generation of banks • The role of banks and insurance companies in moving towards a low-carbon and resilient economy
6.	Corporate Social Responsibility (CSR)	• Reference to the core business: sustainable business models and social entrepreneurship vs. donation ethics, risk and reputation management • Perspective: Thinking from the social issues and concerns (outside-in) vs. thinking from the company (inside-out) • The role and importance of companies in society as (political) citizens («citoyen») vs. economic citizens («bourgeois»)
7.	Evaluation of the sustainability performance of companies	• The importance of evaluating the sustainability performance of companies in the context of SRI • Tools for measuring sustainability performance in companies • Assessment of how a consistent sustainability performance can be ensured • Review of sustainability reporting and assurance
8.	Microfinance	• Microfinance overview, products and product development • Evaluation of the financial and social performance of microfinance service providers • Risk management in microfinance institutions • Microinsurance: health and agricultural insurance
9.	Climate Change Finance	• Contributing factors to climate-related risks • Ways of how climate risks can translate into financial risks • Possibilities of mitigation and adaptation with different market mechanisms (e.g. taxation, carbon pricing)

2. Didactics: Learning Methods that Promote Shaping Competences

Sources: Several

Learning methods that promote shaping competences not only promote the relevant shaping competences but enable students to transfer what they have learned into practice. Typical learning methods that promote shaping competences are briefly described below:

2.1 Case Study
developed by Harvard Law School

In a case study, a "case" is presented to the students, which describes a problematic situation (real or fictional). The learner has the task of working out a solution or making a decision. Case studies are often used to enrich the lessons. The solution is usually left open and the students are expected to work out a plausible result themselves. There are also case studies that provide the solution and encourage the students to discuss it and look for alternatives. A case study is therefore a description of a situation and its influencing factors that has been prepared for teaching purposes and that aims at both the active examination of the content as well as the concrete action of the student. Such a case study is therefore not synonymous with an "example".
A distinction can be made between these case types:
- Problem finding case
- Decision case
- Assessment case
- Information case
- Investigation case

The case types differ in the following learning effects:
- Information: The data relevant for the case solution can be complete, incomplete, or not available at all.
- Problem: The problem or problems underlying the case study can be explicitly named. In contrast, the student may also be required to identify the problems independently and weigh their relevance.
- Solution: The learner has to search for alternative solutions and may be asked to choose one. However, the solution can also be anticipated and made the subject of discussion.

2.2 Simulations and Role-playing Games
Role-playing Games, Business Games, Serious Games, Game-Based Learning, Contests

Simulation and learning games are a group of methods that create a realistic environment in which behaviour can be tested. Often these games/activities are also used to start a (teaching) series. They are suitable to generate concern/empathy or to put a group in a certain situation that they otherwise can only experience cognitively and not emotionally.
Four functions are distinguished in simulations and learning games:
- Diagnostic function: How does a person behave in a certain function?
- Feedback function: A player receives feedback on behaviour or its effect.
- Training function: New behaviour patterns are tested and optimised.
- Perspective function: Players slip into other roles in order to be able to assess (social) situations from other perspectives (e.g. role reversal).

Serious games are digital games that do not primarily serve entertainment purposes but may contain such elements. Serious games and educational games aim to provide information and education.

2.3 Problem Based Learning
After John Dewey

Problem-based Learning (PBL), also known as Problem-oriented Learning (POL), is a form of learning in which learners are expected to find a solution to a given problem largely independently.
Typically, the method is planned with seven phases ("seven-jump process"):
1. Clarification of unknown terms
2. Topic identification or problem definition
3. Brainstorming on hypothesis generation
4. Systematic ordering and evaluation of the hypotheses
5. Formulation of learning objectives
6. Research ("learning time")
7. Synthesis

2.4 Project Based Learning
After William Heard Kilpatrick

Project Based Learning, also called project teaching or project work, is a form of teaching and learning in which the project idea is central. It is an idea of renewal that strives for more proximity to life, problem awareness and interdisciplinary thinking as well as independence and willingness to cooperate. The project is usually goes through the following phases:
- Initiation - the meaning of project teaching is explained and ideas for projects are found.
- Start - the selected project is set in motion.
- Planning - it is negotiated who does what, when, where, with whom.
- Implementation - the project is given practical form.
- Presentation - the project results are presented.
- Evaluation - the project results are reflected.
- Continuation - follow-up projects are initiated.

2.5 Action Learning
Action-oriented learning, based on a real project, according to Reginald W. Revans

Action Learning is a method of experiential learning ("Learning by Doing") of individuals or groups in companies or other organisations.
In Action Learning, a team works on a project that is concrete and relevant for an organisation and at the same time reflects the learning process. Action Learning is based on the conviction that employees of an organisation learn best by facing a real challenge. By using Action Learning, both stakeholder benefit: On the one hand, a need of the organisation is satisfied and on the other hand, individuals and groups are further developed. The method typically includes the following elements:
- The decision to act is based on a client who is directly interested in the solution of a task. The team or its participants conclude a concrete project agreement with the client. This contains all the important points of the result to be achieved, the way and means as well as the use of resources and responsibilities.
- The commitment to learning on the part of the participants is a prerequisite for the program. Participants must have the will to learn new things: they are asked to become more effective in their own behaviour as a leader and in the team, to understand their environment better and to discover personal possibilities for exerting influence.
- The Set (this is how a group of action learners is called) is central to the learning success in order to encourage active participation in the solution of the task through group dynamics. In the Set, each member takes responsibility not only for their own learning success but also for the learning success of the group. The Set usually consists of four to six, maximum eight participants. Ideally, they should have different professional and management backgrounds.
- The facilitator supports the Set in reflecting and evaluating the experiences made in the project. He or she helps to resolve conflicts, promotes a climate of trust and focuses the discussion.
- A process of questioning and reflection promotes exchange and collective learning of the group. Frequently used methods for this are the Reflecting Team and problem-solving interviews.

2.6 Experiential Learning
Experiential Learning Model/Cycle, after David Kolb

In the experiential learning cycle, learners go through a learning cycle with four steps:
- Concrete experience: This forms the starting point of a learning process. This experience has a real character, i.e. it has an observable consequence for the learner.
- Observation and reflection: On the basis of this experience the learner observes and then reflects on it. The experience is brought back to mind and, for example, possible causes for the experience are mentally played through.
- Formation of abstract terms: The reflection process leads to the formation of abstract terms, i.e. the concrete experience influences the knowledge structure of the learner. This step leads to a generalisation, which abstracts from the concrete experience and recognises the underlying principles. Only through this step do the insights gained from experience become knowledge that can be transferred to other situations.
- Active experimentation: In the fourth and last step the learner becomes an actor again: By actively experimenting with the newly acquired knowledge he tries himself in real situations. As a result of this last step in the learning cycle, concrete experiences become possible for the learner again, a second cycle begins. Since the learning cycle is repeated over and over again, the learning process leads to a upward spiral movement. Kolb emphasises that the learning cycle can in principle begin at any of the four points, i.e. also when teaching abstract concepts (e.g. theories), which are tested in practice through active experimentation and thus become concretely tangible for the learner.

2.7 Service Learning

Learning through commitment, after Robert Sigmon and others

Service Learning (Learning through Commitment) is a teaching method that combines social commitment with professional learning in the classroom. Service learning combines cognitive learning (learning) with the assumption of responsibility in the school environment (service).

The aim of service learning is to anchor the social commitment of learners in everyday life and combine it with teaching. The experiences that learners make in "commitment to others" are taken up, reflected upon and linked to classroom content. In this way, young people learn that it is worthwhile to be involved in the community. They train social and democratic skills and are able to use their practical knowledge and experience at school. In this way, teaching becomes practical and action oriented. Service learning is thus based on the principle that social commitment can be combined with professional learning. In this way, "service" and "learning" benefit from each other: on the one hand, social commitment is enriched by the theoretical and conceptual knowledge of the learners acquired in the classroom. On the other hand, professional learning gains relevance to action and depth of understanding through real-life experience. The most important principles are:

- Learners are committed to the common good.
- Learners do something for others or for society.
- However, learners do not engage in learning in isolation or additionally, but as part of the classroom and closely connected to professional learning.
- Learner engagement is planned, reflected and linked to curriculum content.

3. Sustainability-related Shaping Competences

Source: de Haan (2008)

The ability to act in the modern context of work requires not only professional skills but also interdisciplinary skills. In the field of Education for Sustainable Development (ESD), these interdisciplinary skills are above all the following shaping competences according to Gerhard de Haan:

1. Building up knowledge in a cosmopolitan way, incorporating new perspectives
2. Thinking and acting with foresight
3. Acquiring knowledge in an interdisciplinary way
4. Being able to identify and evaluate risks, dangers and uncertainties
5. Being able to plan and act together with others
6. Being able to participate in decision-making processes
7. Being able to motivate yourself and others to become active
8. Being able to take account of conflicting aims when contemplating strategies for action
9. Being able to reflect on your own guiding principles as well as on those of others
10. Being able to plan and act autonomously
11. Being able to show empathy for and solidarity with disadvantaged people
12. Being able to use preconceptions of justice as the basis for decision-making and acting

1. Building up knowledge in a cosmopolitan way, incorporating new perspectives

Students...

- identify the approaches and concepts for sustainable development of decision-makers in public policy and civil society
- outline different perspectives and forms of knowledge (e.g. scientific, traditional, everyday knowledge) on global and local (non) sustainable developments by adopting perspectives
- evaluate different (non-sustainable) design needs and patterns of action on the basis of the information won by adopting perspectives
- describe and assess diversity and dissimilarity (diversity) in the cultural and ecological field

2. Thinking and acting with foresight

Students...

- know methods of futurology (e.g. scenario technology, business games, future workshops) - adapted to their reality of life - to analyse problems of non-sustainable developments and to anticipate possible sustainable developments
- evaluate and use the results of futurology for designing sustainable development processes with regard to ecological systems, social justice, economic developments and political action

3. Acquiring knowledge in an interdisciplinary way

Students...

- describe and explain the structure, function and development of the biosphere
- describe and explain networks of relationships to outline non-sustainable global developments (e.g. with the help of the syndrome concept)
- outline overarching concepts of sustainability (e.g. strong and weak sustainability) and can analyse their consequences for future developments
- outline concepts of sustainability in the fields of technology, economy, trade, mobility, land use, building and living, consumption, leisure time based on individual examples
- describe and explain audit criteria for sustainable development (e.g. sets of indicators and auditing procedures)
- describe and assess aspects of globalisation and the perspectives of countries in their different stages of development
- describe and assess the differences between renewable and non-renewable resources and their use (e.g. renewable resources, fossil fuels)
- describe and assess concepts and visions of social justice

- outline fundamental human rights and international legal conventions and are able to assess their individual and global significance
- analyse and assess interdependencies between ecology, economy, politics, conflicts, poverty and violence in their historical causes and current consequences

4. Being able to identify and evaluate risks, dangers and uncertainties

Students...

- are able to perform stochastic operations - adapted to their reality of life - with regard to statements relevant to sustainability and justice
- can make appropriate statements with the help of heuristics and use the resulting findings in formulating options for action
- can analyse and assess the risks and dangers of unsustainable behaviour

5. Being able to plan and act together with others

Students...

- identify and analyse in groups different points of view on sustainability with regard to their background and can resolve controversies democratically in this context
- describe prejudices, concepts of the enemy and forms of discrimination and present ways of jointly standing up against them
- name social, economic and political reasons for human rights violations, work together to develop possibilities for the protection of human rights and are able to present forms of commitment to human rights in a way that is appropriate to the target group and the situation
- plan forms of solidary action with regards to the provision for the future and in awareness of global interrelationships, and implement these using individual examples

6. Being able to participate in decision-making processes

Students...

- are in a position to estimate the temporal consequences of today's actions and can plan and justify investments in their own future provision
- are able to estimate the temporal consequences of today's actions and are able to make currently justified decisions for action, the beneficiaries of which are other people or generations living in the future
- describe possible solutions for multi-criteria decision-making problems where different problem definitions exist and/or sustainable development goals are in competition with each other
- can identify and describe social decision dilemmas in the context of everyday life
- can jointly discuss problem situations in which improvements can be made in one field of action while accepting the deterioration in another field of action, and justify proposed solutions
- develop concepts for sustainable action, taking trade-offs into account, on the basis of jointly implemented transparent consideration processes

7. Being able to motivate yourself and others to become active

Students...

- describe solidarity and provision for the future for people and nature as a common and social task
- illustrate how cooperative problem-solving can be realised in the development of action strategies for sustainable development
- identify and demonstrate procedures for reaching agreement on the goals and processes of sustainable development in the event of normative and political differences (e.g. in the form of business games, mediation)
- can constructively manage differences of opinion and conflicts on issues of (non) sustainable development

8. Being able to take account of conflicting aims when contemplating strategies for action

Students...

- describe their own and collective learning success in the context of sustainability and outline how these can be used for further learning
- describe individual and collective motivations for participation in democratic decision-making processes and sustainable action
- describe and assess forms of collective commitment to solidarity activities (e.g. against poverty, discrimination, environmental risks)
- can describe and evaluate their personal handling of dilemmas, uncertainties and open situations
- describe their motivations for participating in democratic decision-making processes and sustainable action
- use self-motivation methods for commitment to sustainable forms of economy and life

9. Being able to reflect on your own guiding principles as well as on those of others

Students...

- describe lifestyles that ensure and promote sustainable consumption, environmentally and socially compatible mobility and leisure activities, and health
- know and discuss criteria for the production and purchase of products under ecological, economic and social aspects
- determine and assess the background, forms and effects of their own lifestyle as well as the lifestyles of other people and societies in regards to the living and working situation of other people and on the biosphere

10. Being able to plan and act autonomously

Students...

- can assess and describe the effects and side effects of their actions on others
- can give and discuss examples of the advantages of considering the rights of others
- can distinguish and identify types of justifications for entitlement rights (from performance, from need, from total utility) and justify their view on their validity
- can identify intergenerational conflicts of justice and offer responsible proposals for their solution
- can indicate limits of moral conflict management and formulate and discuss examples of the conflict management function of institutions

11. Being able to show empathy for and solidarity with disadvantaged people

Students...

- know and discuss their personal rights, needs and interests, describe their limits in regards to the goal of sustainable development processes as well as the rights of other people, and name possibilities to stand up for the rights of future generations
- demonstrate their own experience of independent planning and independent action by carrying out a sustainability project
- draw up their own life plans from the point of view of sustainability and describe personal projects how these can be developed

12. Being able to use preconceptions of justice as the basis for decision-making and acting

Students...

- describe and assess forms of individual, social, economic and political assumption of responsibility for (non) sustainable development processes
- represent ways in which empathy and solidarity with disadvantaged people and communities can be practiced locally and globally
- describe ways of expressing empathy for nature in an address-specific way and evaluate the different approaches with regard to their own possibilities for action

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Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.