ESD as an integral part of the Vocational Curriculum

Curriculum development in Vocational Schools towards Education for Sustainable Development – Recommendations for policy makers

1. **ESD as part of curriculum development must be student-centered.**

2. **Teacher empowerment is the engine of any curriculum development initiative.**

3. **Curriculum development must be understood as providing skills for sustainable development as part of general education in vocational education and training.**

4. **School management must support ESD as part of the school program.**

5. **Cooperation between educational and non-school educational institutions is the basis for ESD.**

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The policy recommendations that emerge from the MetESD project are to be addressed to policy makers at the following 5 levels:
1) European, 2) national, 3) regional, 4) organizational, 5) school level.

These recommendations for policymakers highlight the key points for action, namely curriculum development in technical vocational education and training (TVET).

1. **ESD as part of curriculum development must be student-centered.**
2. **Empowering teachers and educators must be central to any curriculum development initiative.**
3. **Curriculum development must be understood as providing skills for sustainable development as part of general education in vocational education and training.**
4. **Governing and managing vocational schools towards ESD.**
5. **Cooperation between educational and non-school educational institutions is the basis for ESD.**

They outline the features that will enable the curriculum development and practice of teaching and learning towards education for sustainable development (ESD). Sustainable development can be defined as development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

The educational recommendations are derived from work on the curriculum development of the participating schools, the experiences of the participants and the systematic evaluation of the project.

Education for Sustainable Development in vocational school curricula builds on the experiences of the environment and everyday life of pupils and connects them with the challenges of future professional activities.

Explanations:

ESD is general education and not an independent subject or separate field of action. Therefore, Sustainable Development as a subject in any training course, subject or subject topic is a to be integrated perspective, presented in five dimensions (see Graph 1).
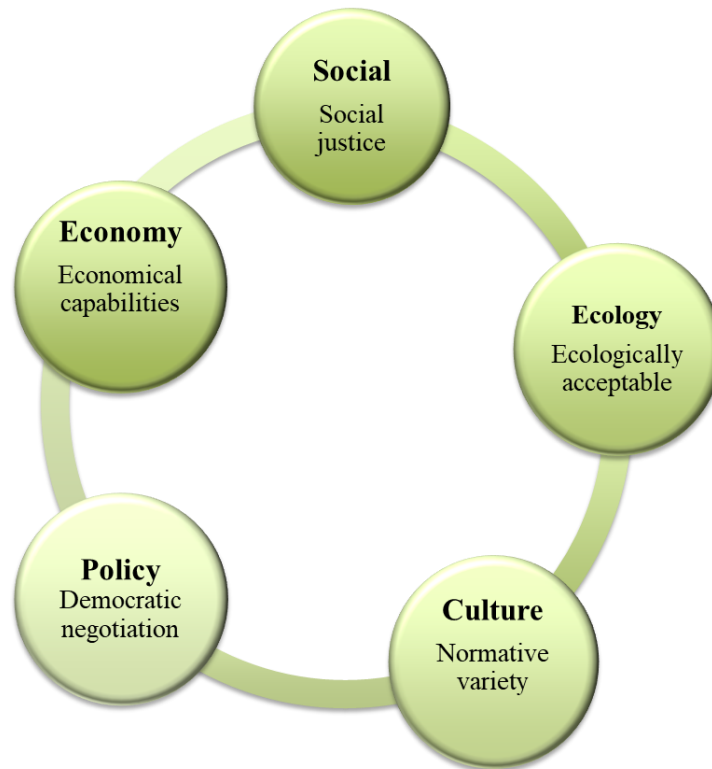
Graph 1: 5 dimensions of sustainable development

The experience from the MetESD project shows that this curricular framework is helpful for the involved actors in deciding which competences must be taught in relation to the 5 dimensions. Based on the work on the curriculum development of the participating schools and the systematic evaluation of the project, we have derived the following 5 core recommendations.

1ˢᵗ recommendation:
ESD as part of curriculum development must be student-centered

ESD in TVET is characterized as a continuous, guided process of economic, environmental, social and cultural change aimed at promoting and adapting competencies, which respect the ecological limits, the traditional knowledge, and carrying capacity of the natural environment on one hand and empower the students finding out their own sustainable life- and working-style, looking for innovative solutions and developing an attitude for sustainable development on the other hand.

- Students appreciate and respect how **diverse values, beliefs and traditions** have contributed to the communities and culture in which they live and work.
- Students value what it means to be an **entrepreneur on its own**, with motivations and responsibilities to serve and produce in local and wider contexts
- Students understand the origins and **impacts of social, economic, cultural and environmental aspects** of the world around them
- Students have the awareness, knowledge, skills, values and **motivation to live and work sustainably**

2ⁿᵈ recommendation:
Empowering teachers and educators must be central to any curriculum development initiative.

Teachers are important agents for change. The successful implementation of topics and issues concerning sustainable development into the curricula of TVET is dependent upon teachers being motivated and skilled to deal with ESD.

- It needs **further training** in ESD for those, who are in charge of school management and leadership as well as in daily work of teaching.
- It needs **resources** to work on it. Curriculum development is extra-work and inhouse-training and capacity building at the same time.
- It needs **networking**. ESD as a fundamental part of vocational training depends on knowledge about what is required by the regional, national and international labor market.

Empowerment of teachers and educators is also central to a curriculum development. Teachers in Latvia/Germany/Austria need further training in ESD, resources to work and capacity building at the same time. Networking with other teachers in you country and outside will allow reimagining more efficient curricular changes. Teachers need to develop competencies for sustainable development, that involves issue, self and design competencies. At present, education often contributes to unsustainable living. This can happen through a lack of opportunity to question teacher's ways of teaching, unsustainable systems and structures. It also happens through reproducing unsustainable models and practices. The recasting of development, therefore, calls for the reorientation of education towards sustainable development and developing ESD competencies.

3rd recommendation:
Curriculum development must be understood as providing skills for sustainable development as part of general education in vocational education and training.
The first and most important step is a review of curriculum documents how far the teaching and learning of skills for sustainable work-life are already mentioned and seen as important for the vocational training. While Textbooks and other educational materials should be reviewed to determine whether they reflect on ESD topics and helpful for implementing ESD. Materials may need to be developed to implement ESD topics into the curriculum and further into the all-day-teaching.

Dimensions Competence	Knowledge	skills	attitude
Issue competence	About vocational fields related to ESD	Working with methods and instruments	Global learning Green economy saving environment
Social competence	Communication, teamwork	Solving conflicts Steering dialogues	Open-mindness Empathy Solidarity
Self competence	Personality, emotion behavior	Designing own life- and carreer curriculum	Courage and heart authenticity
Design competence	About process designing structure building	Designing processes and products	Dealing with variety and difference entrepreneurship

Table 1: ESD Competence-Model

4th recommendation:
Governing and managing vocational schools towards ESD.

No school starts from point zero. Each vocational school has to identify and to develop connections and synergies among their projects, sustainability initiatives in order to focus on resources and good practice which is already there.
This means continuing and sustaining existing projects through initiatives such as global learning, education for all, outdoor learning, action-based teaching and lifelong learning.

A whole-institution approach should be adopted for the curriculum development.
- It needs the involvement of the whole school staff. If not from the beginning on, but step by step
- It needs the involvement of the school management.
- It needs a participating culture and structure of decision-making.

- It needs guiding principles for ESD. This set of guidelines could focus on the 17 Sustainable Development Goals (SDG´s).
- School management should ensure transparency and accountability. This will ensure legitimacy of changes in the curriculum.
- School management should use evaluation as an important learning tool that ensures that ESD topics are compatible to the issues of vocational training
- Schools need to build partnerships and mobilize stakeholders.

Graph 2: The 17 Sustainable Development Goals (United Nations Department of Public Information 2018)

In general, good education policy should support regular communication on the objectives of ESD in TVET and provide a mechanism for cross-school exchange of experiences in curriculum development.

Governing and managing vocational schools towards ESD means developing a whole school approach that requires involvement of all stakeholders – leadership, teachers, learners, and administration – to jointly develop a vision and plan to implement ESD and incorporating ESD topics that are compatible to the issues of vocational training.

The challenges the head teachers face, are: developing new power relationships, new curriculum responsibilities and management and cultures which involve moral, ethical and professional aspects.

The recommendations that are designed for policy makers derive directly from work on the curriculum development of the participating schools and the systematic evaluation of the project.

5th recommendation: Cooperation between educational and non-school educational institutions is the basis for ESD.

State documents determine short and long term aims for each country, still NGO sector is more flexible in reaction to societal changes. In many countries, like UK, Germany, Austria and Latvia NGOs actively engage in dissemination of new ideas and implementing the principles of sustainability in practice. Therefore, this would be essential to design an educational program that expands outside formal frames by considering ideas, materials that are designed by the NGO sector, this way fostering a cooperation between state and the NGO sector.

By implementing this project, we would like to suggest to policy makers and educators and every person to start thinking about the idea of sustainability its aims and sustainable lifestyle that is not an issue of only one program. A critical analysis of educational programs can enrich young people, citizens and every person's responsible behavior.

International Policy debate:

Review on the implementation of sustainable development goals, Latvia, 2018
www.pkc.gov.lv/en/Latvia-SDG-Review

"Latvijas Ziņojumu Apvienoto Nāciju Organizācijai par ilgtspējīgas attīstības mērķu ieviešanu" (Report from Latvia on Implementing ANO sustainable Develpment Goals In Forum that took place in June 16.-18, 2018).

Report summarizes information how Latvian citizens, government, municipality and enterpreneurs and NGO's make their efforts to implment ANO 17 sustainability Goals untill 2030. gadam, as well as show a progress and shallenges on the natioanl level as well as point to tools to to reach those aims.

The report on integrated teh sustianbaility developemt aims puts a responsibility on a society to act in reaching those aims.

OECD Reviews of Vocational Education and Training (2015)
KEY MESSAGES AND COUNTRY SUMMARIES
http://www.oecd.org/education/skills-beyond-school/OECD_VET_Key_Messages_and_Country_Summaries_2015.pdf

Description:
In a sequence of more than 40 country studies, the OECD has been reviewing vocational education and training (VET) systems around the world since 2007. Through country visits, analyses and published reports the OECD has examined initial, largely upper secondary VET, though its Learning for Jobs study, and post-secondary VET systems though it Skills beyond School study.

'Education for Sustainability' - The National Strategy on Education for Sustainable Development in Ireland, 2014-2020
https://www.education.ie/en/Publications/Education-Reports/National-Strategy-on-Education-for-Sustainable-Development-in-Ireland-2014-2020.pdf

Description
This National Strategy on Education for Sustainable Development (ESD) has been developed by the Department of Education and Skills (DES), in consultation with key stakeholders. It provides a framework to support the contribution that the education sector is making and will continue to make towards a more sustainable future at a number of levels: individual, community, local, national and international.
This strategy is primarily influenced by the national strategy on sustainable development, *Our Sustainable Future - A Framework for Sustainable Development in Ireland* (hereafter referred to as *Our Sustainable Future*), which was published by the

Department of the Environment, Community and Local Government in 2012. It is also framed within the current context of limited financial resources. The result is an ESD strategy that seeks to challenge individuals, organisations and society as a whole, but particularly in educational contexts, through recommendations that are pragmatic rather than aspirational in nature.

Recommendations for Implementing Education for Sustainable Development in Sweden

Description:
 In November the 2014 UNESCO World Conference on Education for Sustainable Development (WCESD) in Aichi-Nagoya, Japan, will mark the end of the UN Decade of ESD (2005-2014) and see the launch of the Global Action Programme on ESD. These recommendations wish to support the Swedish delegation to the WCESD. They are intended to serve as a basis for enhancing and accelerating ESD in Sweden.

The first event in the process was "ESD - Call for Action", a seminar held on 3 June 2014 at Uppsala University. It brought together 120 representatives of Swedish ESD-related practitioners, researchers and policy makers elaborating responses to the draft recommendations. These recommendations were debated and reinforced at a second event "Making ESD Action Possible" on 27 August 2014. It assembled 110 Swedish ESD-related politicians, policy makers, researchers and practitioners.

21st century skills: Realizing our potential: Individuals, employers, nation

United Kingdom Department for Education and Skills; dti; HM Treasury; Department for Works and Pensions (2003) [online]

http://www.dfes.gov.uk/skillsstrategy/subPage.cfm?action=whitePaper.default

Excerpt from website:
The Skills Strategy White Paper was launched in July 2003 and sets out the skills challenge and how it will be met. The Strategy aims to strengthen the UK's position as one of the world's leading economies by ensuring that employers have the skills to support the success of their business, and that employees have the necessary skills to be both employable and personally fulfilled. In order to do this we need to build a new skills alliance where every employer, employee and citizen plays their part.

Education for sustainable development
Qualifications and Curriculum Authority, (2004) [online]
http://www.nc.uk.net/esd/index.htm

Description:
This website offers valuable advice and provides information on education for sustainable development (ESD). The site caters slightly to ESD topics of particular relevance for teachers and teaching institutions. The website content covers a range of ESD subjects including: the topic of SD itself, teaching with reference to foundations, curricula, and specific subjects, school management including relevant policy and practice and professional development.

Volkoff, Veronica; Perry, Jane (2001) **On the road again: Supporting VET development in a globalised context***

Paper presented at the Fourth International Conference Vocational Education and Training Research, University of Wolverhampton, 16-18 July 2001
http://www.leeds.ac.uk/educol/documents/00001780.doc

Description from abstract:
In many developing countries, globalisation and technological change have created urgent demands for new forms of skill development to meet economic and social needs. This has in turn required the establishment and renewal of training institutions and programs, and the professional development of VET practitioners. The authors of this paper have been involved in vocational education and training development projects in South Africa, China and India. Their work has included: comparative research of vocational education and training systems; development and teaching of courses, including by distance; institutional and systemic capacity building; establishment of mentor programs; design of a five year program of VET reform in China. Through facing the challenges of work in these cross-cultural and multi-lingual contexts, the authors have identified needs for the development of specific skills and capacities for international project teams to enable effective assistance for sustainable development. Within a context of changing dimensions of vocational education and training, the importance of integrating research and learning with doing has been highlighted. This paper discusses the demands of such activities and proposes a model that suggests principles, skills and knowledge and integrating capacities for international teams.

Education for Sustainable Development and Global Citizenship (ESDGC) – Wales, UK.

The Welsh Assembly Government was established after devolution in 1999 and ist constitution has sustainable development as a founding principle. The overarching policy document for ESDGC for the Welsh Assembly Government, for local government and individual institutions is "ESDGC: A Strategy for Action", which was published in 2006. It applied to all sectors of education including schools, further education colleges and work-based learning. Guidance for each education sector was published in subsequent years.

https://www.aber.ac.uk/en/media/departmental/healthsafetyenvironment/environmentalhub/esdgc_g192e.pdf

http://learning.gov.wales/docs/learningwales/publications/081204commonunderstschoolsen.pdf

https://beta.gov.wales/sites/default/files/publications/2018-02/education-for-sustainable-development-and-global-citizenship-in-the-further-education-sector-in-wales_0.pdf

https://beta.gov.wales/sites/default/files/publications/2018-02/education-for-sustainable-development-and-global-citizenship-a-self-assessment-toolkit-for-work-based-learning-providers.pdf

Lawrenz, Frances; Keiser, Nanette; Lavoie, Bethann (2003) **Sustaining innovation in technological innovation**

In: *Community College Review*, Vol. 30, No. 4 , Spring 2003, p. 47-63

Raleigh, N.C.: Dept of Adult and Community College Education, North Carolina State University, 2003 ISSN 0091-5521

Description from website:

In today's rapidly changing job market, occupational and technical programs are especially important components of community colleges. To improve education for technicians in advanced technology fields, the National Science Foundation (NSF) developed the Advanced Technological Education (ATE) Program to develop sustainable projects. This article reports on research that used the ATE projects as a data source to answer the research question: Which characteristics related to sustainability are exhibited by a set of technical education programs?

The results of the study are discussed under the headings of collaboration, program improvement and professional development. Among the implications of the findings are: sustainability of innovations in technical education appears to be an attainable goal; the ATE projects were successful at developing and maintaining collaborations; constant change in the technology fields requires constant updating of programs and materials and the concurrent professional development of faculty members; the processes in place in community colleges are not designed to be responsive to this rapid change; leading-edge technology programs are also very high risk because materials necessary for an innovative program may become out-of-date quickly and have little opportunity for alternative use; and cutting-edge programs require instructors with cutting-edge skills. The authors conclude that to help ensure the sustainability of technical education innovations, the following steps should be taken: strengthening the existing structure of internal and external collaborations; designing programs that are not only progressive, but also allow expensive equipment to have future uses; allowing programs of study to have the required depth to fit into the high-need areas as well as have enough basic understanding so that both the students and the program itself can respond to the changing job market; ensuring the professional development of faculty is supported in terms of opportunities and rewards; and determining the data necessary for the programs to market themselves.

Power, Colin: **UNESCO's programme on technical and vocational education for the first decade of the new millennium**
Paper presented at the International Congress on Technical and Vocational Education: 2nd, Republic of Korea, 1999, Unpublished, 1999, 11 p.

http://www.voced.edu.au/cgi-bin/get-iso8.pl?off=24047555

Description from website:
This paper comprises an address made by the Deputy Director-General for Education UNESCO, Colin Power, to the Second International Congress on Technical and Vocational Education held in Seoul, Korea, April 1999. It explores the effect of growing economic globalisation on the provision of technical and vocational education and training (TVET) and outlines the proposed main objectives in UNESCO's future strategy.
These are: strengthening technical and vocational education (TVE) as an integral component of lifelong education; orienting TVET for sustainable development; and providing TVE for all. Also described is the proposed structure for the implementation of UNESCO's International Programme on Technical and Vocational Education.

Vocational training for sustainable development
BIBB - Federal Institute for Vocational Training (2003) [online]
http://www.bibb.de/en/5365.htm

Description from website:
Sustainability is a visionary philosophy which is receiving increasing attention in business and society. This notion can be traced back to Agenda 21, a global agreement between more than 160 countries in Rio in 1992. A balance between economic, environmental, social and global factors and interests is the objective. Vocational training can and must make a specific contribution to the implementation of this philosophy. Wide-ranging measures relating to information and communication, research and development can be secured and supported in a qualified manner e.g. by pilot projects, good-practice compendiums, conferences involving actors.
As one result of the more intensive discussion, not least due to the Congress "Learning and structuring the future – training for sustainable development" of the BLK (Bund-Länder Commission for Educational Planning and Research Promotion), BIBB began in June 2001 to establish a new focal point in its work, "vocational training for sustainable development", by among other things establishing a multi-department working group and assuming the leadership over a multi-institution Federal Vocational Training Working Group for Sustainability.

Professional Education and Training for Sustainable Development in Italy: Summary

Biondi, V.; Doria, L.; Istituto di economia delle Fonti di Energia e dell'Ambiente (IEFE)
Unpublished: European Foundation for the Improvement of Living and Working Conditions, 2000
http://www.eurofound.eu.int/publications/files/EF0070EN.pdf

Description:
This document consists of a list of 16 bullet point entries summarizing the research findings of this group of authors on the topic of 'Professional Education and Training for Sustainable Development in Italy'. Following this is a list of recommendations for future policy making and initiatives.

Professional Education and Training for Sustainable Development in Spain: Summary

Alza, Corral; Bilbao, Isusi, IKEI consultants
Unpublished: European Foundation for the Improvement of Living and Working Conditions, 2000
http://www.eurofound.eu.int/publications/files/EF00123EN.pdf

Excerpt from publication:
Environment is not yet conceived as a strategic issue within most of the Spanish enterprises' general management. Thus, and generally speaking, environment is regarded in Spain more as an additional cost rather than as an opportunity or a social obligation, where adaptation to existing legislation is regarded as the main driving force for adopting environmental-friendly decisions. In fact, it is possible to argue that, at this moment, there is not a true and widely accepted environmental culture amongst the Spanish enterprises.
However, this perception seems to be gradually changing, especially amongst the larger companies, in the sense that the Spanish large industrial enterprises are gradually shifting towards an environmental consciousness, where environment is increasingly included as a strategic value within the general enterprise management.