

# SInnDesign General Strategic Guideline

## 2015

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## 1. Introduction

In the **SlnnDesign National Training and Sectoral Training Strategies** the **specific national VET systems and educational offers in the field of Design for Sustainability (DfS)** has been addressed. For a successful implementation of the developed materials they need to be integrated into the already existing national training systems. Mechanisms for disseminating the outputs and accustomed strategies for integrating the SlnnDesign materials in existing curricula of relevant courses have been developed and suggestions for the procedure of establishing new courses have been made in accordance with relevant national stakeholders in the partner countries Spain, Portugal, Denmark and Austria.

For the development of an overall strategic guideline for a successful implementation of the developed content the documented constraints and key success factors for the integration of new content into established systems has been crucial. At the beginning of the project a list of relevant stakeholders for the implementation and dissemination (VET providers, policy makers, and companies) has been elaborated and connected to the documented procedures of developing new VET courses in each country. This matrix is a very important part of the above described training strategies and serves as basis for developing a general guideline for the integration of Design for Sustainability.

The **General Strategic Guideline** for the integration of design for sustainability in VET presents a more general, methodical approach on how to integrate DfS and Sustainability aspects into new and already existing curricula. The involvement of key players in the national VET systems and incremental integration from an early stage of the project should ensure the praxis-oriented and target-aimed content of the guidance. The outcomes serve as an orientation to the participating VET partners but also as an overall guideline for the further development of curricula for other vocational and educational training institutions, sectors and countries.

In Chapter 4 **different aspects for the implementation of new content which have to be considered** are listed and present an orientation for interested stakeholders to adapt the SlnnDesign training program to their specific purposes and develop strategies for the integration on curricula, training program or course level. The experience of the development steps during project implementation and the situation in the four partner countries serve as basis for the more general recommendations which form this guideline.

Independently from the strategies chosen for the implementation of the developed SlnnDesign materials it has to be pointed out that teachers and trainer play a major role in the VET system.



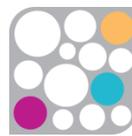
## 2. SinnDesign Training Program

The SinnDesign Training program consists of a manual (theoretical/practical modules), background materials and tools. If all materials are used for training purposes, they form a comprehensive study program and in this case the recommended order is the one shown in Table 1.

The materials may be also used individually to fill in a specific knowledge gap and/or to support the application of a tool. In that case there is not necessarily a specific order to use them.

SinnDesign training program			
No.	Title		Duration
1	<b>Introduction and overview</b>		5 hrs
	Manual & background material	Introduction	
	Manual & background material	Design for sustainability (DfS) overview	
	Manual & tool	Motivating factors	
2	<b>Innovation and Design for Sustainability</b>		2 hrs
	Manual & background material	Innovation and design for sustainability	
	<b>Design for Sustainability processes</b>		4 hrs
	Manual & background material	Design for sustainability processes	
	Manual & tool	Design brief	
3	<b>Stakeholders</b>		6 hrs
	Manual & background material	Stakeholder engagement	
	Manual & tool	Stakeholder analysis	
4 + 5	<b>Analysis of sustainability profile</b>		10 hrs
	Manual & background material	Analysis of sustainability profile	
	Manual & tool	ECODESIGN PILOT	
6 + 7	<b>Principles of Design for Sustainability</b>		10 hrs
	Manual & background material	Design for sustainability principles	
	Manual & tool	Design for sustainability checklist	
	Manual & tool	QFD: Quality function development	
8	<b>Generation and evaluation of DfS ideas</b>		8 hrs
	Manual & background material	Creativity techniques	
	Manual & tool	Matrix for evaluation of DfS ideas	
9	<b>Sustainability Communication</b>		3 hrs
	Manual & background material	Sustainability communication	
10	<b>Design and Sustainability Management</b>		2 hrs
	Manual & background material	Design and sustainability management	

Table 1: SinnDesign training program including manual, background materials and tools



### 3. Vertical versus horizontal integration into curriculum

Two ways of integrating sustainability aspects into curricula can be distinguished: **horizontal and vertical integration**. In horizontal integration, design for sustainability (DfS) aspects are interwoven with different courses of the curriculum, while vertical integration can be understood as the organization of separate courses. The **horizontal integration is regarded as the most successful one for the SinnDesign materials** where the necessary **holistic and interdisciplinary approach** of the concept of sustainable development will be satisfied most. The intertwining of DfS as an overlapping strategy is regarded the most promising approach also for students to integrate sustainable development into their qualification and future working environment.

In order to perform the integration successfully and on a broader basis, the main obstacles have to be assessed. According to Lidgren ([1], [2]) the **main obstacles are**: limited frame of reference of the teachers, the multidisciplinary character of research related to sustainability, the misunderstanding of sustainability inclusion, the workload of teachers and the fact that sustainability is not seen as a core issue. For horizontally incorporating DfS into the existing curricula it is necessary to face the fact that many teachers are not familiar with sustainability issues and the meaning to their specific disciplines.

Therefore it makes only sense up to a certain extent to develop demo curricula for the three addressed sectors. Harmonization is an issue, but the **development of customized solutions compatible with the content of the specific VET courses is considered the more promising approach**. Both the trainers and the pupils are subsequently part of the target group of the developed materials. UNESCO also recognizes teacher training as a key strategy in achieving a sustainable society, therefore train-the-trainer as well as the development of student competences are in focus of our implementation strategy.

#### Horizontal integration into curriculum

Design for sustainability (DfS) aspects are interwoven with different courses of the curriculum

#### Vertical integration into curriculum

Organization of separate courses for Design for Sustainability

#### Important aspects to consider for implementation procedure

1. Who offers VET training for product/product-service development?
  - Initial or Continuous Vocational Education and Training (IVET or CVET)?
  - IVET: dual system vs. school offers
  - CVET: Institutional or company level
  - Identify DfS offer and gaps
  - Educational level of VET system
2. What kind of integration at those levels is possible?
  - What is the more promising strategy: horizontal or vertical integration?
  - Separate courses vs integration training units in already existing courses?
3. How does curricula/course development take place in your country?
  - Procedure and Responsibilities
  - Stakeholders and their role
  - Timeline

[1] Lidgren A. A sustainable course for higher education. MSc thesis 2004

[2] Lidgren A. A systemic approach to incorporate sustainability into university courses and curricula, The International Institute for Industrial Environmental Economics (IIIEE), Lund University, Sweden



## 4. Stepwise approach for the implementation

### 4.1 ***Who offers VET training for product/product service development? To what extend are DfS issues already implemented?***

- Identify embedding of vocational and educational training on product development  
Depending on Initial (IVET) or Continuous Vocational Education and Training (CVET) the target group differs in age, theoretical and practical experience and personal perspective concerning the implementation of Design for Sustainability aspects. While students might be more receptive, open to new content and see DfS as their own qualification, practitioners might have concrete targets to reach and problems to solve and are closer to application of SD materials into their daily work life.
- Identify operational level in IVET and CVET  
Depending on the kind of VET system, companies and industry interests play a major or minor role in the decision making process of curricula or course development. In the dual system established e.g. in Denmark or Austria companies have more direct influence on the training content while in countries like Portugal or Spain VET is mainly offered by schools or VET institutions.
- Identify state of integration of Design for Sustainability in existing VET offers  
The already existing VET offer needs to be screened and the degree of the integration of Design for Sustainability (DfS) should be pointed out in order to identify the optimum starting point. Via interviews with VET institutions, business associations or leading companies of the desired sector the demands and needs on education on DfS should be portrayed.
- Identify information gaps SlnnDesign could bridge  
The SlnnDesign Training Program offers a variety of theoretical and practical modules, more in depth in the background materials and tools for practical implementation. Depending on the identified information gap an accustomed strategy for the selection and implementation process can be elaborated.
- Choose the educational level of the VET system to be addressed  
For the comparability of the VET systems the EQF European Qualification Framework has been used. The initial situation analysis regarding VET offer, involved Stakeholders and procedure for content development and integration will show the suitable educational levels which need to be addressed. The gained learning outcomes concerning knowledge, skills and competences address level 4 and 5 according to a definition from EQF and can be adapted to individual needs.

### 4.2 ***What kind of integration at those levels is possible?***

- Define the more promising strategy: horizontal or vertical integration?  
When integrated horizontally, Design for sustainability aspects are interwoven with different courses of the curriculum and an interdisciplinary focus can be laid on that matter. The integration of sustainable product development in an interdisciplinary manner should be encouraged; this could be done by establishing a teaching principle “sustainable development” for different kinds of initial education and training offers in order to promote horizontal integration.  
Regarding vertical integration of new content, the organization of separate courses for Design for Sustainability takes place. This lacks of interdisciplinary but is much easier to accomplish than horizontal integration. As the SlnnDesign Training Program offers 50



hours of training on Design for Sustainability, a separate course could be established setting individual focus concerning theoretical input or practical implementation.

- Separate courses/training units vs integration training units in already courses?  
For a quick and easy start selected SInnDesign training materials can be used in existing training units or courses. This can be accomplished by teachers or trainers who develop their own training materials or in cooperation with textbook authors who already integrate sustainability issues in various chapters and could be motivated for creating own chapters on design for sustainability. This could be the starting point for the establishing of a separate course or training unit on Design for Sustainability after a testing phase.

#### **4.3 How does curricula/course development take place in your country?**

- Picture procedure and responsibilities  
Decision makers and their role to bring in new content concerning the VET offer need to be identified. In most cases central government has responsibility for curricula development and different ministries are involved depending on the addressed level and sector, like the Ministry of Education and Science, Employment and Social Solidarity, Business and Innovation etc. The responsibility is shared with advisory bodies, like social partners or agencies for curricula development at each level of the Education and Training system.
- Identify stakeholders  
Any change or development in the curriculum has to be initiated or proposed by individual or group of stakeholders, like councils. One distinguishes between internal and external stakeholders: Internal stakeholders are schools, training centers and certified VET providers, teachers/trainers and learners. External stakeholders are social partners, including confederations of both employers' associations and trade unions that participate in the VET advisory bodies. They all can deliver views and recommendations; depending on their allocation stakeholders do have different roles, aims and influence on content development.
- Timeline: long term vs short term  
In order to guarantee that VET is business- and labour market oriented, existing VET programs and curricula are regularly developed, updated and adjusted. The goal of curricula development is to achieve congruency between VET and employment and between qualification demand and supply and can be a rather complex and time consuming process (e.g. takes place every 10 to 15 years) involving a lot of decision makers, stakeholders and procedure and review steps. Long term integration might be the more promising strategy for an overall integration of the Design for Sustainability concept as a teaching principle in framework curricula.  
However, as an initial step it might be more promising to opt for short or medium term strategies because no complex procedure needs to be run through and colleges and schools can lay their desired focus and adapt easily. E.g. include SInnDesign in CVET where systems are more flexible or include SInnDesign in the curricula of VET colleges which can choose the implementation of the learning goals individually to certain extend.