News and articles
Interviews
Agenda
Links

About GUNI
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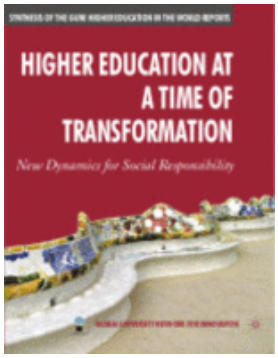
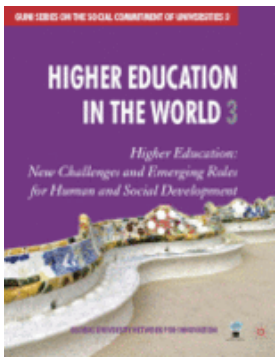
GUNI Network
GUNI Report "Higher Education in the World"
GUNI Open Content Repository
International Barcelona Conference
Universities and Social Commitment Observatory
Research projects





News

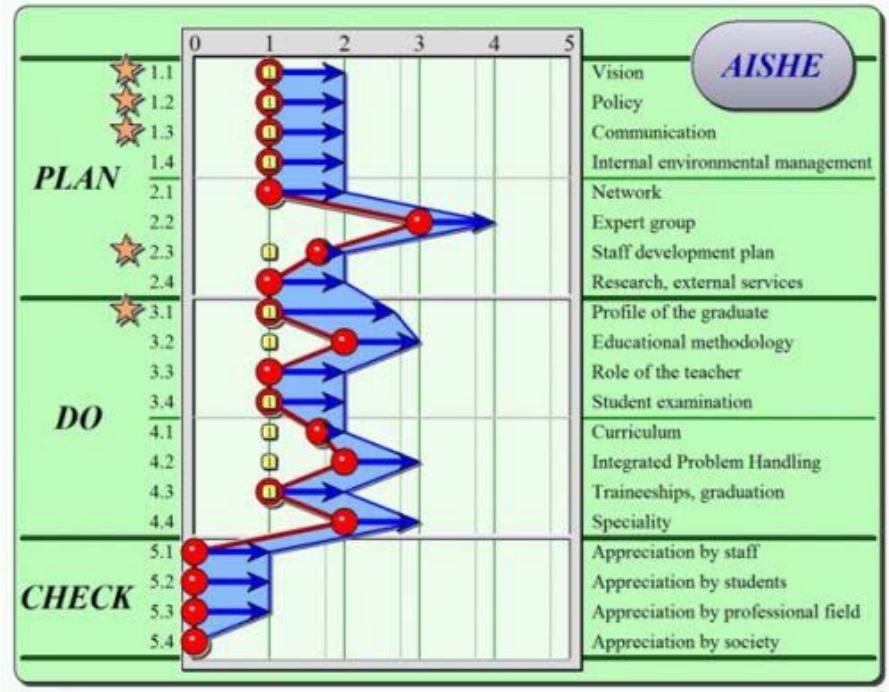
:: ARTICLES

A Roadmap to SISD: System Integration of Sustainable Development in Higher Education

In this article Niko Roorda of the Avans University develops a series of instruments for education development aimed at the integration of sustainable development into the competence profiles and curricula of university programs.

AISHE: Assessment Instrument for Sustainability in Higher Education

AISHE is a tool for the assessment and policy development of ESD (*Education for Sustainable Development*). Its first version was developed in 2000-2001 by a working group chaired by Roorda, on behalf of DHO (the **Dutch Foundation for Sustainability in Higher Education**). The instrument is based on an existing model for quality management, the EFQM model (developed by the **European Foundation for Quality Management**; see: Nuland et al, 1999) and on the so-called Five-Stage Model built upon the EFQM model by INK (see: INK, 2000). The AISHE book (Roorda, 2001) and all necessary equipment to perform an assessment, including the computer application '*AISHE Reporter*', can be downloaded from the 'Files' section of **www.LinkedIn.com/in/nikoroorda** (go to the Full Profile!).

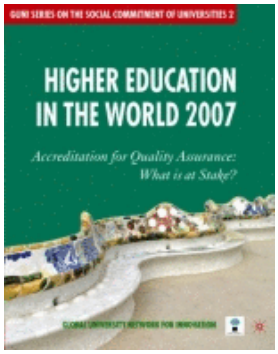


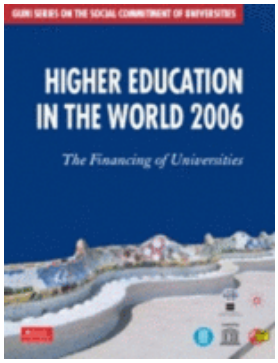
Validation

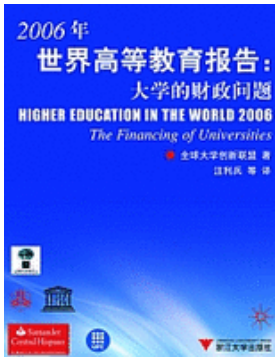
AISHE was validated thoroughly, both theoretically, making use of an 'extended peer community' (Funtowicz & Ravetz, 1993) consisting of scientists, educators and representatives of society, and practically, through a series of practical tests in the Netherlands and Sweden. Detailed information about the development and validation process can be found in the PhD thesis (Roorda, 2010: chapter 7).

The assessment procedure

During an AISHE assessment, ca. 15 persons – students, lecturers, members of the non-teaching staff, and members of the management – meet to discuss a list of 20 criteria (see figure 1). As a result, a report is made (during the assessment, using *AISHE Reporter*) describing for each criterion, based on







consensus among the participants:

- a description of the *present situation*, both in words and expressed as a number (the development stage, between 0 and 5);
- a description of a *desired situation*, to be realized at a date that was decided on beforehand, usually within a period of e.g. one or two years, also both in words and as a number;
- a description of how these desired targets are to be realized;
- a graphical overview of the present and the desired situation (as shown in figure 1).

The Certificate of Education for Sustainable Development

Based on the results of an AISHE assessment, a university department (i.e. a faculty, a study program, etc.) can be awarded with the 'Certificate of Education for Sustainable Development'. This is a star system, varying from one till four stars (see figure 1). The level of three stars is described as equal to '*SISD*', an abbreviation of '*System Integration of Sustainable Development*', a state in which sustainability has become an intrinsic aspect of the very identity of a (part of a) university. Case studies in Roorda (2010) illustrate the impact of SISD on a university and its education. Such case studies also show that AISHE is a suitable tool for policy development and implementation, starting from a situation in which a university sets its first steps of integration of sustainability in its education, towards the realization of SISD, making use of repeated quality cycles ('Deming cycles'), each applying an AISHE assessment.

In order to guarantee the quality of the Certificate, AISHE assessments aiming at certification can only be chaired by qualified AISHE assessors, possessing the Assessor Certificate. The first step towards this Certificate is a three-day training course.

Dissemination, recognition and reviews

AISHE has been applied hundreds of times, in a range of countries: Netherlands, Belgium, Spain, Sweden, Germany, Austria, Ukraine, Bangladesh and Brazil. Case studies can be found in Roorda (2004), Roorda and Pérez Salgado (2007), Roorda & Martens (2008), and in the PhD thesis (Roorda, 2010).

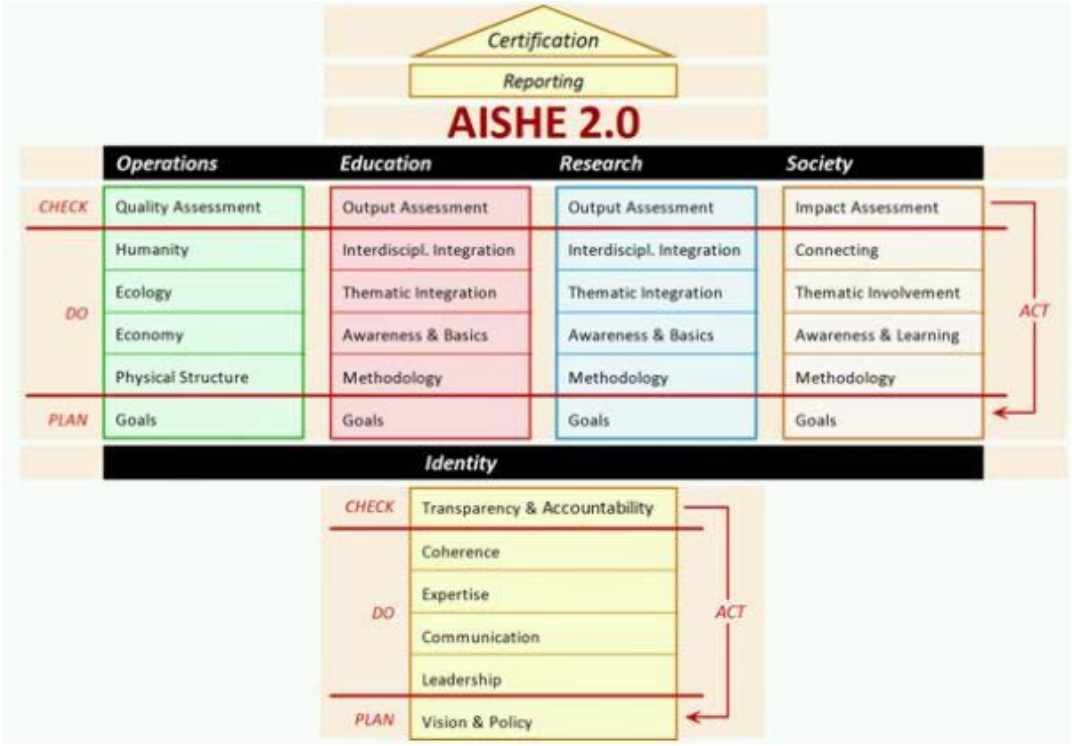
The Certificate of Education for Sustainable Development has been awarded ca. 50 times.
AISHE and the Certificate were formally recognized in 2007 by the Dutch and Flemish Accreditation Organization of Higher Education (NVAO). Reviews of AISHE were published by e.g. Shriberg (2002), Lozano-Ros (2003), Cole (2003), Van Dam-Mieras et al (2007), Jansen (2008) and Clarke & Couri (2009).

AISHE was described or mentioned in publications dedicated to ESD in e.g. Belarus (Van Oyen, 2008), Asia (Maguire, 2009), Africa (MESA, 2006), Canada (Cole, 2003), Belarus (Martsinkevich, 2008), Portugal (Fernandes Damião Madeira, 2008), Brazil (Santos da Silva, 2005) and Australia (Lang et al, 2006).

AISHE 2.0

The first version of AISHE focuses on education and on the underlying mission and philosophy of a university (department). Not much attention is given to the other main roles of a university in relation to sustainable development: its research, operations and community outreach.

As more and more desires reached Roorda to enlarge the scope of AISHE, in 2008 an international project started to redevelop AISHE. At the end of 2010, the development of AISHE 2.0 as a draft instrument has been finished, the new tool having a modular structure (see figure 2). The validation process however is not yet completed, and this process might yet lead to alterations of the instrument. For the validation process, cooperation will be desired with recognized international organizations and networks, e.g. UNU, GUNI, ISLE and EMSU.



Consultancy

After working for ten years as a lecturer, study program developer and education manager, all dedicated to SD, Roorda acted for another ten years as a consultant, assisting more than thirty universities with the development of ESD (education for SD), and coaching others to do the same. The consultancy consisted of e.g. assistance to university boards with their ESD strategy and mission design, assistance to education managers with the ESD implementation, workshops and courses for lecturers, and of course AISHE assessments and certifications. In some cases, SISD was actually realized, as case studies in the PhD thesis illustrate.

During the consultancy, the need became apparent for other ESD tools, together creating a structured approach to the ESD development process, all the way from modest first steps to SISD. At present, the consultancy is available for universities everywhere in the world.

ESD checklist

In the PhD thesis (Roorda, 2010), an overview of ESD characteristics is offered, based on literature sources and own experiences. This overview results in a table (table 6, p. 34) that can be used as a checklist for ESD development, implementation and evaluation.

An introductory textbook

During the consultancy, many university lecturers complained that the concept of SD was difficult to grasp, and even more difficult to teach, as a suitable introductory description was missing. So, in 2005, a textbook 'Basisboek duurzame ontwikkeling' was published (Roorda, 2005), followed by the 2nd edition (Roorda, 2011). Both are in the Dutch language, but an English edition (Roorda, 2012) will be published by Earthscan in January 2012. Actually it is much more than a textbook, as the websites of both the English and the Dutch book offer more than 200 exercises, 50 video clips, a number of serious games and a range of other accessories, as well as extras for lecturers (protected from students's eyes by a password). Together they form a complete SD introduction course, not only applied by lecturers for their students, but also for training programs for those lecturers themselves, as a part of the consultancy.

RESFIA+D: Competences for sustainable development

In its final chapter, the textbook introduces a set of professional competences for SD, called 'RESFIA+D'. The set of competences is shown in the table below. The RESFIA+D model is elaborated as an ESD development tool, guiding education managers and lectures to develop or improve the competence profiles of their study programs by adopting competences that are essential to enable graduates to contribute professionally to SD.

RESFIA+D : Professional competences for sustainable development The section numbers refer to the sections of the Roorda (2011) and Roorda (2012) in which the professional competences are explained and illustrated.			
Competence R: Responsibility A sustainable professional takes responsibility for the own work. *I.e.: the sustainable professional can ...*	*See:*	**Competence E: Emotional intelligence** A sustainable professional projects him/herself on the values and emotions or others. *I.e.: the sustainable professional can ...*	*See:*
1. Make a stakeholder analysis based on consequence reach and consequence period	*§5.5*	1. Recognize and respect values or him/herself and or other people and cultures	*§4.3*
2. Take personal responsibility	*§8.2*	2. Distinguish between facts, presumptions and opinions	*§8.5*
3. Render personal account to society (transparency)	*§8.2*	3. Cooperate in an inter- and transdisciplinary way	*§1.3* *§4.8*
Competence S: System orientation A sustainable professional thinks and works from a systems vision. *I.e.: the sustainable professional can ...*		**Competence T: Future orientation** A sustainable professional thinks and works from a future oriented perspective. *I.e.: the sustainable professional can ...*	
1. Think in systems, zoom in and out, i.e. alternately think analytically and holistically	*§3.5*	1. Think in varying timescales; distinguish between short and long term approach	*§5.5*
2. Recognize weaving faults en power sources within systems, apply power sources	*H.2-4*	2. Recognize and utilize non-linear processes	*§7.3*
3. Think integrative and chain oriented	*§8.3*	3. Think innovative, creative, out or the box	*§8.4*
Competence I: personal involvement A sustainable professional dedicates him/herself personally for sustainable development. *I.e.: the sustainable professional can ...*		**Competence A: Action skills** A sustainable professional acts decisively and competently. *I.e.: the sustainable professional can ...*	
1. Consistently involve sustainable development in the own work as a professional (sustainable attitude)	*§4.7*	1. Weigh unweighable aspects and make decisions	*§8.5*
2. Work with passion on dreams and ideals	*§4.2*	2. Deal with uncertainties	*§6.3*
3. Apply the own conscience as the standard	*§8.2*	3. Act when the time is ripe, not against the flow: 'do without doing'	*§4.2*
Plus: **Disciplinary competences** for sustainable development (varying per education program or professional group)			

The SD Curriculum Scan

Another tool is the SD Curriculum Scan, which is used to get an overview of all SD elements and aspects that are present (explicitly or hidden) in a study program (see figure 3). The result is a 'map', enabling to discover 'white spots' related to the discipline of the program.

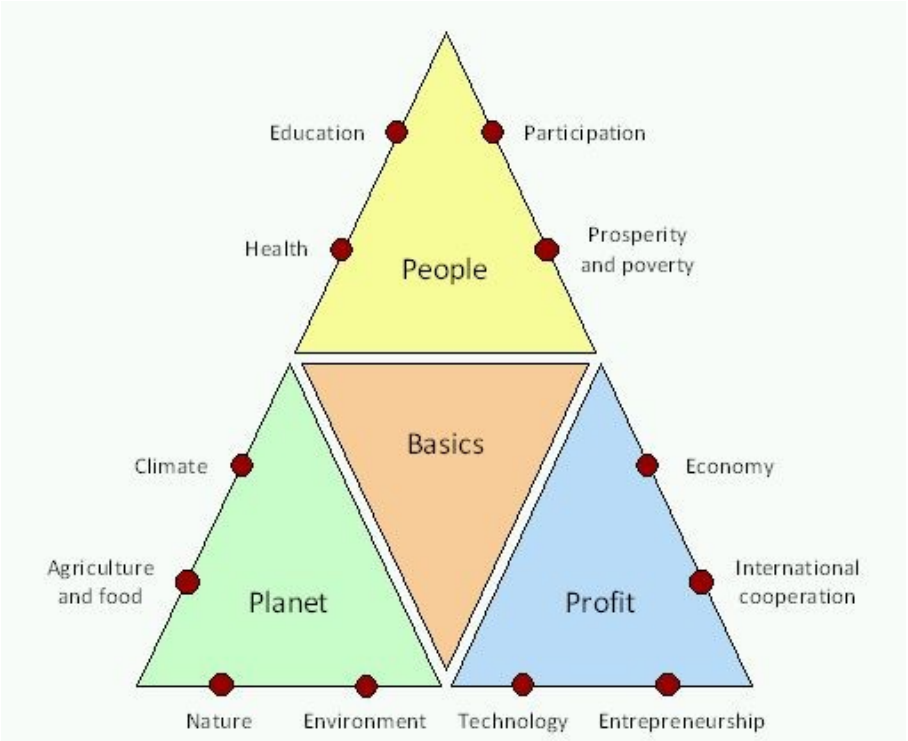


Figure 3: The main topics of the SD Curriculum Scan

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Author Bio

Niko Roorda received his PhD in the social sciences, based on his action research on the integration of sustainable development in higher education. He earned his MSc in physics and philosophy of science at Utrecht University. At present he works as a senior consultant for DHO, the Dutch Foundation for the Advancement of Sustainable Development in Higher Education . For DHO he developed the AISHE system. His primary task for DHO consists of consultancy and coaching of sustainability releated educational development projects in universities, and the training and certification of AISHE assessors.

Thursday, February 24, 2011