

Re-orientation of TVET towards the future (Notes)

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This contribution is based on Eastern European and Australian contexts. A broad perspective on the role of TVET that is not limited to training for the specific occupation. Capacity building and empowerment of individuals is seen as an important mission of TVET globally. The complexity of TVET sector, a sector which environment is dynamic, diverse and characterised by constant change is being increasingly recognised. If in our analysis we go back to Dewey, we will see that he interpreted the role of vocational education as the development of mind and character (Dewey, 1966, p. 320).

The role of TVET

A recent UNESCO-UNEVOC project for the South East Europe identified the major challenges for the countries in transition, as the reform of their TVET systems have been realised concurrently with the process of overcoming the consequences of conflict and instability. Educational reform met with such problems as disproportions in the supply and demand of qualifications, no tradition of social partnership, low interest in the TVET on behalf of employers, low prestige of the TVET. Traditionally South East Europe has a highly centralized educational system; therefore the role of the Educational Ministries should not be underestimated.

Four issues identified as important through the project, were researched:

- Social partnerships and TVET
- Quality assurance
- Social inclusion, equity and meeting diverse needs
- Reorientation towards the future: occupations in demand/ youth employment.

Reorientation towards the future was identified as an integrating issue.

The analysis provided in a research report on learning in TVET in Australia published in 2006 reinforced the statement that “the VET system needs a capacity-building approach that focuses on quality, creativity, professional judgment and growth rather than simply on compliance” (Staron, Jasinski, & Weatherley, 2006, p. 10).

In the Australian context a pressure is being exerted within the VET sector to:

- Use capacity-building approaches rather than compliance approaches in the training package environment
- Meet the changing nature and needs of the workforce.
- Use new pedagogical approaches to learning and teaching.
- Develop strategies that will break down many of the barriers that learners face, and

- Increase the integration of working and learning” (Staron, Jasinski, & Weatherley, 2006, p.10)

Problems with training packages that are oriented towards training of occupation-related technical and vocational skills only are stated by more and more experts.

Virtual conference on TVET and sustainability: *Two pathways, one destination: TVET for a sustainable future*. (October 24 – November 10, 2007):

- One of the major concerns that participants expressed was related to the need to change the perception of TVET as training in technical skills only.
- “More emphasis should be given to *developing attitudes and knowledge skills rather than technical skills*; - this can be the first priority in TVET” Anita (India)
- This change of the teaching paradigm brings TVET closer to general education, where education includes broader aspects such as values and attitudes.

Future – capacity building – development of the whole person (attitudes)

Future vision

Our vision of the future globally has been described more and more often in terms of sustainable development.

- SD can be conceptualised through
 - value position (ethical principle);
 - nature of proposed responses (how can we address SD issues) and
 - structure of proposed responses (what issues should be addressed).
 (Pavlova, 2008)

Re-orientation of TVET

Value inclusion – attitudes development

Re-orientation of TVET towards development of the whole person that includes cultural learning and broad knowledge brings it closer to the broader educational agenda. Traditionally value education through TVET in the Eastern Europe and Russia has been realised through the general subjects (e.g., ethics, literature, history, foreign language, biology) and specialised subjects relevant to future occupations. In Australia values has not been explicitly included in TVET training. A new challenge for TVET is to develop new frameworks, attitudes and values relevant to SD and to introduce SD concepts and strategies.

Three areas:

- **content change of TVET** (new frameworks, development of attitudes and values relevant to SD; introduction of SD concepts, strategies, problem solving, etc),

- **sustainability of TVET as an institution,**
- **contribution of TVET institutions to sustainable communities, economy and environment** (through capacity building and poverty alleviation).

Specific context			
Social issues Environmental issues Economic issues			
Content of TVET			TVET as an institution
Existing programs	New qualifications		Performance criteria
Industry-specific skills			'Doorways'
SD concepts	SD processes	SD strategies	Other approaches
Contribution of TVET to sustainable communities and economy and environment			

The influence of an ESD agenda on TVET content is happening in two ways: through existing programs and through the establishing of the new ones.

Existing programs and courses

When developing new content for TVET exiting programs and courses can be shaped to address SD issues and concerns by including new concepts, new processes and new teaching strategies. Introduction of new concepts, processes and the implementation of new teaching strategies would depend on the type of skills being required for particular countries. Estevez-Abe, Iversen and Soskice's (2001) distinguished three types of skills: firm-specific (Japan, Korea), industry-specific (Germany) and general skills. In any economy all three types of skills will be utilised, however, in some structured economies the production of one of these skills types will predominate over the others. **Firm-specific skills** are the least portable, **industry-specific** skills are portable within industry, while **general skills** can be applied across a range of firms and industries. Each type requires different types of training and assumes particular kinds of economic development strategies. As argued by Lauder, Brown and Ashton (2006) for firm-specific skills a high level of general education is desirable. This is then used as the foundation for the in-house development of skills that firms demand. Industry-specific skills require some interaction between the education and training system and industry for the training to be appropriate and up to date in supplying the skills required. For general skills, education at only a minimum level is required for the lower end of the flexible labour market." (p.48).

Thus it is possible to suggest that different approaches towards content development would be used for firm-specific, industry-based and general skills. Industry specific and general skills could be a particular focus for UNESCO work.

Industry specific skills

Every occupational activity (manufacturing, maintenance, service) uses resources in natural form (water, minerals, etc) and in processed form (materials, objects, electricity, etc). Thus every occupation directly related to sustainable development in terms of the environmental component. Defining goals for ESD integration in TVET learning is an important step in addressing SD through training. There should be a

clear link between occupation-specific skills and SD concepts and practices. In terms of economic component, “the use of environmentally-friendly materials, low energy consumption, environmentally clean and sustainable processes, intelligent transport and logistics procedures and a waste management concept geared to waste avoidance can lead to a reduction in cost and, in the longer term, to an increase in corporate competitiveness” Haertel (2006, p.11).

Social sustainability can be addressed through ethical and legal aspects of particular occupation, e.g. safety, discussions on how technology relates to power, control, access (Pavlova, 2006b).

Industry-based content development could be done for each industry identified in the International Standard Industrial Classification of All Economic Activities, Revision 3.1, (ISIC Rev. 3.1) (e.g., Agriculture, hunting and forestry; Fishing; Mining and quarrying; Manufacturing; Electricity, gas and water supply; Construction, etc.)

General skills

As general skills can be applied across a range of firms and industries, a general understanding of what SD is and how each of us can contribute towards it in the everyday life and the workplace situation, is important and can be addressed through any type of education or training.

Sustainable development can be seen as change for the better in which social, cultural and economic needs are met without plundering non-renewable resources nor threatening eco-systems. The Forum of the Future defines sustainable development as: “A dynamic process which enables all people to realise their potential and improve their quality of life in ways which simultaneously protect and enhance the Earth’s life support systems.” (Forum for the Future, 2006)

New qualifications

As stated in the Boon declaration “increased scope for TVET is recognized in ‘sustainability industries’ such as environmental conservation, cultural heritage site preservation and renewable energy production” (point 4). Such new qualifications as recycling management, regional planning, marketing, waste management, community planning have become increasingly popular world-wide. Training for these qualifications has been undertaken through formal TVET and non-formal training. For example, IWES is Australia’s leading workshop for environment professionals <http://www.iwes.com.au/index.php?page=home>. Their recent courses include:

- **Principles of Wastewater Treatment**

The aim of this course is to teach the key enabling fundamentals which underpin wastewater treatment processes. These are taught via real wastewater treatment problems and case studies.

- **Design of Biological and Advanced Wastewater Treatment Plants**

This course focuses on the design of leading-edge treatment systems for both municipal & industrial settings – the sort of technologies and issues that are not easily found in textbooks

- **Water Re-use for Urban and Industrial Applications**

The course covers the tenets of the public health goals that govern water re-use regulations, Non-potable recycling in irrigation and industrial re-use applications; Greywater and stormwater recycling in point of use applications

- **Odour Assessment and Management**

This course provides a practical grounding in the principles of odour monitoring (ambient and source), assessment and control. Regulatory frameworks for odour assessment and management are examined.

Work of IWES is a good example of providing focused training that is based on new technologies and best cases from practice. This organisation also established close links with WaterAid, which is an international charity. Its mission is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education.

TVET as an institution

The desirable outcome of TVET work is that its graduates have an impact on social, economic and environmental sustainability within local and global communities. Thus, it is important to recognize how TVET as an institution can perform sustainably. There is a need to identify a number of criteria for assessing sustainable performance of TVET institution, set them up as a UNEVOC declaration and invite TVET institutions to sign it as the basis of their commitment to ESD. The example of the principles adopted by the universities (that can be used as a starting point for the discussion) are:

- Articulation of social responsibility in the institutional mission and structures;
- Integration of social, economic and environmental sustainability across the curriculum
- Academic research on sustainability, and consideration of social, economic and environmental sustainability issues in all other research;
- Outreach and services, including the development of partnerships with schools, government, non-governmental organisations and industry;
- Sustainable institutional operations, including effective monitoring and reporting;
- Staff development and rewards;
- Student opportunities;
- Cultural inclusivity.

Recommendations on UNESCO's role

Work with the Ministries of Education and the National TVET boards to conceptualise and develop:

- capacity-building approaches rather skills training: students' development in an holistic way through TVET paying as much attention to values and attitudes as to developing skills;
- a teaching paradigm that increases the integration of learning and values/ attitudes development, examine moral principles;

- new pedagogical approaches to learning and teaching (enquiry based, discussion-based, student-centred)
- approaches to meet the changing nature and needs of the workforce (industry specific skills and general skills, e.g., problem-solving skills).
- TVET teachers educational programs to help them to ‘re-orient’ themselves towards the new paradigms;
- the ways TVET can contribute to SD , e.g.:
 - **The trainees contribution** to sustainable economies and societies due to the skills and knowledge development (poverty alleviation, employability).
 - Knowledge of SD issues, development of attitudes and work practices addressed through the **content of TVET** studies (content/curriculum/teaching approaches).
 - **TVET institutional practices** (should be sustainable).
 - Developing attitudes and understanding in terms of the lifestyle (value change) through content of TVET and TVET as an institution.

TVET needs to create new opportunities for students through innovative approaches to curriculum development and pathways, and developing a coherent strategy that integrates different dimensions of skills/attitudes development as part of the strategy.