

Integrating Environmental Education in Vocational Education and Training (VET): The case of Georgia

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Abstract - The aim of this article is to study how environmental education is integrated into Vocational Education and Training (VET) in Georgia¹. The article covers analysis of the relevant documents, study of VET teachers' attitudes towards integrating environmental education into the VET and their teaching practices. The study was conducted using the qualitative and quantitative methods in 2014 in the capital city of Georgia, Tbilisi. Overall, teachers have positive attitudes towards integrating environmental education in VET. Although teachers' attitudes are related to their willingness toward implementing environmental topics in their classes to some extent, there is a lack of correspondence between teachers' attitudes and their assessment practices. The study identified barriers that teachers face in the teaching of environmental issues. Based on the findings the research provides recommendations at policy and delivery levels.

Keywords -vocational education, environmental education

A. Introduction

VET plays a critical role in the economic development of a country. Given the impact of increased technological influence on the environment and ecology, Environmental Education (EE) has a special importance within vocational education worldwide.

Environmental Education (EE) is "a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops necessary skills and expertise to address challenges, and fosters attitudes, motivations, and commitments to make informed decisions for responsible action" (UNESCO, Tbilisi Declaration, 1978).

Studies of teaching environmental education have been conducted in many countries including the topics such as policy and curriculum design, self-perception of teachers and etc. (Chi-chun Ko & Chi-kin Lee, 2003; Van Petegem & Blicek, (2007; Wheeler & Bijur, 2000). The research findings show a mismatch between theory and reality in environmental education (Grace & Sharp, 2000; Palmer, 1998) as well as between the ideal curriculum and what is actually taught in the schools. There have been identified many reasons that make environmental education less successful, such as curriculum organization, lack of

provision of learning materials (Cohen & Ball, 1990; Fullan, 1991); lack of teachers' knowledge and skills (Bolstad, 2004). Teachers lack expertise (Grace & Sharp, 2000) in the teaching of environmental education in terms of content and teaching skills. Research shows that traditional teaching cannot help learners to develop knowledge and the skills necessary for taking action on the environment.

Researches reveals that integration of environmental issues in VET system must be supported through appropriate policy and VET curriculum modifications and networking. Except development of skills environmental education should also enhance critical, problem-solving, and decision-making skills in order learners to make informed environmental decisions.

Georgia is in the process of modernizing its VET system in line with the international standards and European developments. There has been an increasing recognition of the role of VET in developing a skilled workforce in Georgia. Some elements of the regulatory framework to integrate EE in VET have been prepared, but there are challenges related to their implementation in practice. There is no research in Georgia to study attitudes of teachers toward integrating EE in VET or their classroom practices. Systematic research is important for providing targeted educational interventions and an evidence-based education policy.

Thus, the aim of the research is to study how environmental education is integrated into Vocational Education and Training (VET); VET teachers' attitudes towards integrating environmental education into the VET and their teaching practices.

B. Methodology

The research used the following research methods:

- Desk research of the main regulatory and legislative documents such as, VET Law, NQF, VET teacher's professional development standards, Occupational Standards and VET programs.
- Four focus groups were conducted with 32 VET teachers in order to study teachers attitudes towards integration of environmental education in OS and VET curriculum; teachers' practices in teaching ecological programs/subjects/modules, achievement and challenges.
- Survey research with structured questionnaires was conducted with Quality Managers and principals in 15 VET institutes in Tbilisi to analyze what

¹ The research was carried by the support of the Ministry of Environment and Natural Resources Protection of Georgia and the GIZ.

environmental programs and extra-curricula activities are being implemented in VET institutions.

C. Research Findings

This section briefly summarizes the main findings of the research.

The research shows that some regulatory initiatives are in place to support integration of EE in VET but they are often fragmented and need further development; in addition there are more challenges remaining in relation to the implementation status of these initiatives.

The research shows that about 33% of the VET institutions implement environmental/ecological programs, such as: environmental technician, plant ecology, and ecology. About 90% of the VET curriculum covers on average 2 subjects/modules in environment and ecology (maximum 7 subjects/modules) with the duration of 50 hours that is not enough for developing relevant knowledge and skills.

About 22% of the institutions expressed readiness to implement a new environmental program or a subject/module during the next year. For this initiative they need support.

Research shows that VET institutions do not often initiate ecological activities. Extra curricula ecological activities take place in about 55% of the VET institutions, such as cleaning institute surroundings, organize excursions etc. Students do not express enthusiasm to participate in such activities (about 12% participate).

Focus group discussion shows that teachers have positive attitudes towards integrating environmental education in VET.

Teachers say that Occupational Standards (OS) often do not cover environmental issues that affect the content of educational programs. Employers and experts working on OS often give insufficient attention to environmental issues; there are no feedback mechanisms to reflect experience accumulated in classrooms in OSs.

VET programs are not standardized that makes it difficult to achieve the same learning outcomes in the area of the environment. Teachers point out that quality of practice varies from institution to institution. High quality of practice is not always guaranteed.

Teachers face a number of barriers in teaching environmental subjects/modules, such as: a lack of teaching and learning resources (70%), program duration is not always enough (55%), classes are too big for practical activities (55%), teachers lack professional experience (49%) and etc. Sometimes teachers have more theoretical than practical experience. As teachers point out they are not systematically trained in teaching environmental education. The syllabi and the teacher's guides do not suggest to the

teacher the environmental aspects that can be included. As a result, teachers do not often know what to teach and how to teach. Without textbooks and relevant teaching materials, teachers feel that they are helpless. There is a lack of networking among other VET institutions to share best practices and experience.

The vast majority of teachers (87%) point out that curriculum developers need to rethink the approach, which they use in integrating environmental education into the VET curriculum in terms of time, duration, methodology and etc. To ensure that EE is taught properly, it should be included in the VET curriculum as an independent subject or as specific topics. Curriculum should cover a wide variety of topics: environmental safety, pollution, hygiene, environmental conservation, development of environment-friendly attitudes etc. Education should support the development of ecological culture among students. It should link to students' everyday life. More emphasis should be on practical aspects of teaching than on theory.

Teachers point out that integration of non-formal and extra-curriculum activities in formal VET education should be supported.

D. Recommendations

Based on the findings of the research, the following recommendations have been formulated:

A new partnership should be formed between government, employers and VET Institutions to support integration of environmental education into VET. All stakeholders need to recognize that investment in promoting EE can have significant returns such as the health of the environment or meeting global standards and etc.

Environmental education should be integrated with all levels of education, including vocational education. It is important to develop ecological/environmental VET qualifications in accordance to international models.

There should be developed policy guidelines, standardized curriculum, relevant OS and appropriate teaching-learning materials to ensure uniformity of the learning outcomes. It is recommended that all modular programs cover a separate module about the environmental issues or environmental topics be integrated in different modules.

It is recommended to encourage communication among VET institutions and NGOs, employers not only in the process of implementation of practice but also in the process of planning and implementation various non-formal and extra-curricular activities.

Development of human and material resources should be supported. Teachers pointed out that it was important for them to upgrade their environmental knowledge and teaching skills. This can be achieved through pre-service and in-service trainings. Networking and sharing best practices among the VET institutions is also very important.

In addition, VET institutions need to be equipped with relevant facilities, teaching and learning materials according to the modern standards.

It is important to support development of a healthy, ecological environment in the educational institutions. This will support not only achievements of the learning outcomes, but also to the development of the environmental awareness and culture.

It is important to implement various awareness raising activities with the relevant stakeholders about the importance of environmental education.

The research is limited to Tbilisi, the capital of Georgia, however, its findings can be used for teaching and learning of EE in VET in Georgia. In addition, the research findings can be used as a basis for more comprehensive research in this field. Systematic research is important for providing targeted educational interventions and an evidence-based education policy.

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