



Education for Sustainable Development practice in HE

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Abstracts: Higher education institutions (HEIs), are ideally positioned to make a critical contribution to Education for Sustainable Development (ESD) through their core academic functions of research and teaching. However, while sustainability research has accelerated in recent years, curriculum development has been limited in scope and impact, due to the complexities of ESD when applied within the existing academic structures and processes of HEIs. The field of ESD has the strategic aim of reorienting entire educational systems, which in HEIs means the challenging goal of achieving large-scale shifts of curriculum priorities, policy and pedagogy. The concept of ESD focuses on achieving human wellbeing and quality of life, pursued through the maintenance, care and equitable use of natural and cultural resources. Critical pedagogies oriented to futures and systems thinking, participatory and experiential learning, critical thinking, partnership working and values reflection, are all widely used in ESD. Two Slovenian cases of ESD good practice include one or more of the following innovative pedagogical approaches: changes to formal curriculum development processes and/or frameworks; actions to improve the graduate profile and student learning experiences; strategic enhancement activities to improve teaching and learning practice.

Keywords: Higher education institutions (HEIs), Education for Sustainable Development (ESD), ESD Competencies, ESD Good Practice

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1. Introduction

Universities and colleges of higher education (HEIs) have a long history of engaging with the generation of knowledge and the shaping of social and scientific paradigms that influence everyday life. Higher education institutions are well positioned to link geographic regions and transcend disciplinary boundaries and local and global dimensions of development. HEI graduates are entering a volatile world and higher education needs to respond to challenging, rapidly changing socio-economic and environmental conditions. Education for sustainable development (ESD) must prepare students to cope, manage and shape the social, economic and ecological conditions characterised by change, uncertainty, risk and complexity. Orienting HEIs towards a sustainable future is a huge challenge for the entire academic community. ESD is flourishing at universities where it is embedded in the curriculum as a part of the university culture, ESD is seen in relation to other agendas such as employability, internationalisation and enterprise and linking sustainable and global initiatives with the wider community. Sustainability and ESD are still emerging; they are sometimes contentious fields of inquiry, so the concepts, ideas, models and discussion questions presented in this article are indicative, and not in any way intended to be prescriptive or comprehensive.

Authoritative documents have consistently argued that before HE can effectively contribute to sustainable development, it must transform itself (Sterling, 2012). The crucial education paradigm is centred on values and priorities of ESD. Thus, we agree that the transformation of HEIs (Benedict, 2010; Tilbury, 2011; UN, Rio+20, 2013):

- Must begin with the reorientation of curriculum and pedagogy to better serve the needs of present and future generations.
- Should be guided by vision and purpose of ESD and should be responsive to graduate needs and their life skills.
- Needs to address global and sustainable challenges in a more holistic and realistic way.
- Requires respect and understanding of different cultures; this includes the promotion of intercultural understanding and cross-cultural dialogue.
- Requires a change of lifestyles. Universities and colleges have to promote less carbon emission, less consumerist, more ethical and healthier lifestyles across their campuses. This must be supported by the training and education of university staff and external stakeholders.
- Needs to promote qualities such as innovation, curiosity and humility through the system as these are fundamental to the transformation process. These should be reflected in the institutional culture as well as curriculum.
- Requires leaders who are able to inspire vision and clarity of purpose throughout the transformation process. There is a need to provide leadership development for current and future leaders within the HE sector.
- Needs decision-making tools for providing relevant data and real-time dashboards that can fill the gaps between strategic policy, academic development and operational issues.

There are challenges in bringing about change in HEIs. Below are ideas and examples of good practice that can assist the ESD change process.



2. The ESD principles and needed changes in HEIs

The Rio+20 Treaty on HEIs (2013) has become a reference document not only for the network but also for external partners interested in transforming the HE sector towards ESD. The following principles are most important for the transformation in the area of HE culture, curriculum, life in campus and community (Charbel et al, 2010; Domask, 2007):

- 1) To be transformative, HEIs must transform themselves. To meet expectations in the domain of ESD, HEI must deal with the challenges of transformation.
- 2) Need to align components of the system to embed change. The HEIs are a part of a system composed of universities and colleges, research and training centres, innovation clusters, employers, student bodies, quality assurance agencies, governmental and administrative bodies. Understanding the system and seeing its interconnections are crucial for ESD change.
- 3) Networks are key to progress across the HE sector. The HE system must recognise its place and role within a broader social system consisting of policy makers, governments, economy, NGOs, civil society and traditional knowledge organisations. This network plays an important role in promoting of ESD goals.
- 4) ESD is an institutional learning process. Implementation of changes within HEIs requires reconstruction of knowledge and development of ESD competencies among staff and students.
- 5) Access to the underprivileged. The HE system needs improve access to ESD for the less privileged groups in collaboration with other partners that represent policy makers, school systems, civil society and international organisations.
- 6) Multi/Inter-disciplinary Learning and action. HEIs must create opportunities for inter- and trans-disciplinary approaches of teaching and learning.
- 7) Redefine quality in HEIs. HE is currently driven by performance indicators associated with excellence, quality and impact. The meanings of these terms need clarifying with the core missions and responsibilities of HEIs which support ESD.
- 8) ESD must be a whole-of-institutional response. ESD should be reflected across campus management, curriculum, research and student and community engagement activities. ESD must be embedded in governance and decision making processes, at an organisational as well as sector level. It is important that these processes are open, transparent and based on stronger participation within and outside of the HEIs.

Changes at HEIs toward ESD can be expressed in 5 levels (Anderberg et al, 2009; Blewitt and Cullingford, 2004; Rowe, 2002; UN, Rio+20, 2013; UNECE, 2010):

- 1) Cultural. When cultural change has taken root, ESD will be adopted and advocated by the membership of the HE institutions and key catalysts in the HE system.
- 2) Campus. HE education is playing a fundamental role in supporting good ESD practice and must include: Modelling biodiversity and energy conservation; Adopting sustainable procurement and environmental management systems; Building campuses as living laboratories for learning; Research and community engagement; Supporting fair-trade food and products and socially just causes; Promoting healthy lifestyles. Campuses must also lower their carbon footprints.
- 3) Curriculum. Perhaps the greatest challenge of all is to reorient the HE curriculum so that aligns it with ESD. This requires not just the inclusion of relevant subject



matter and the pursuit of inter- and trans-disciplinary approaches but also the development of education for *ESD competencies of university and college educators as well as learners*.

- 4) Community Engagement. ESD must be the key element in linking universities and communities they serve. The walls of HEIs, which can exclude and disconnect the work of institutions from local, social and professional communities, have to be brought down. Academic, administration and support colleagues all have a task in bringing this change in practice.
- 5) Connecting the System. It is important to review the various policies, incentives, rewards, platforms and mechanisms driving HEIs to ensure that they are aligned with ESD. Significant for these **efforts is the rethinking of measures associated with quality, excellence and vision**.

3. ESD didactics and pedagogics, and ESD competencies

The best start to explore and describe the didactics of ESD represents the following three questions (Benedict, 2010; Tilbury, 2010, 2011):

- What – the subject, kinds of issues, wicked sustainability issues and what kinds of professions or work are we preparing students for.
- Why – why should they learn this? What are the competencies or learning outcomes we intend to produce? What are the broad ranges of *competencies* students will need in their lifetimes to work with these issues?
- How do we teach for these competencies? What curricula, learning activities, and evaluation methods do we use? How do we design the curriculum, learning activities, and evaluation methods to produce those competencies?

Under the programme Schooling for the Future (2014) the Competence Model of ESD and synthesis of ESD competencies was designed (table 1). The ESD competences provide a useful framework to advance actions in this area. The curriculum gate-keepers, professional bodies, government agencies, student groups and academic development bodies as well as teaching colleagues have a key role to play to achieve this ambition.

Graduate competencies associated with systemic thinking, critical reflective thinking, futures engagement and values clarification, and the ability to deal with complex and contradictory situations are vital in order to facilitate transformative actions towards sustainability and ESD.

**Table 1: Synthesis of ESD competencies (adapted from Benedict, 2010; Naji and Smith, 2014)**

	Competencies	What students gain
1	High level of knowledge	Disciplinary and interdisciplinary
2	Ability to think holistically	Understand context, causes and consequences
3	Ability to think critically	Question dogma or established truths, evaluate priorities and alternatives
4	Ability to solve problems	Evaluate problems from multiple perspectives and formulate alternative solutions
5	Ability to think innovatively	Fantasize, imagine and explore possibilities and implement new initiatives
6	Ability to clarify own values	Include social, economic and ecological values
7	Ability to promote creativity and change	Effective oral and written communication, cooperation and management/organisation
8	Ability to access information from different sources	ICT, books, newspapers...
9	Ability to develop social and inquiry-based learning	Generate new knowledge. evaluate development and the impact of actions
10	Ability to develop initiatives and entrepreneurial spirit	Innovation and taking risks, self-employment
11	Ability to work flexibly and be adaptable	Various kinds of work environments, organisational forms and cooperative relationships
12	Ability to motivate for lifelong learning	Steer own learning in a lifelong perspective

A number of key processes underpin ESD pedagogical and didactical approaches are (Sterling, 2005):

- Collaboration and dialogue;
- Engagement the 'whole system';
- Innovation of curriculum and teaching/learning experiences;
- Active and participatory learning.

Current learning and teaching processes are generally not aligned with this transformative view of education (Fien, 2009). Thus ESD supports processes which stimulate innovation within curricula as well as through teaching and learning experiences. Sterling (2004) argues that sustainable development provides 'a gateway to a different view of pedagogy' and this idea is supported by numerous ESD writings from across the globe such as: (Bhandari and Osamu, 2003; Fien, 2001; Gadotti, 2009; Haigh, 2006; Hesselink et al., 2006; Hopkins, 2009; Lee et al., 2006; Liu, 2010; Mayer et al., 2008; Rauffl et al., 2009; Ravindranath, 2007; Scoullos et al., 2004; Tilbury and Wortman, 2004).

When Cotton and Winter (2010) asked a number of colleagues in UK HEIs what pedagogical approaches they associated with ESD, a common answer was that active learning and participatory processes are essential. Although the research was small scale, drawing on a survey sample of university teachers, it identified commonly used pedagogical methods

and the reasons they are considered to be relevant to ESD. This study coincides with writings and other studies from scholars across the globe and working in different sectors; they suggest that educators align ESD with active and participatory learning processes (ACCU, 2010; Alvarez and Rogers, 2006; Anderberg et al., 2009; APCEIU, 2005; Banh et al.. 2010; Blewitt and Cullingford, 2004; Breiting et al.. 2005; Charbel and Chiappetta 2010; Cohen et al.. 2002; Delgado et al.. 2007; Doppelt, 2003; Domask 2007; Elias and Sachathep, 2009; Galkute and Shakirova, 2009; Haslett et al.. 2010; IUCN, 2010; Kearins and Springett, 2003; Laessoe et al., 2009; Morgensen and Mayer, 2009; Shakirova and Iskhakova, 2006; Tran, 2010; Wang and Wei, 2007; Wortman et al.. 2006).

Table 2: ESD pedagogical strategies in HE - adapted from (Cotton and Winter, 2010; Tilbury, 2010)

Strategies and techniques for ESD	Learning process involved
Role-playing	This often used method gives an opportunity for learners to gain deeper understanding of another person’s perspective and to empathize with others.
Group discussions	The use of discussion minimizes the risk of the tutor taking a transmissive or authoritarian approach, thereby enabling students to explore their own and others’ views.
Stimulus activities	A stimulus activity might involve watching a video or looking at photos, poems or newspaper extracts to initiate reflection or discussion.
Debates	Debates in which two groups of students put forward opposing arguments on an issue are often cited as a common method of teaching about sustainability since they encourage students to gather information about the topic and develop an argument.
Critical incidents	Learners are given an example and asked what they would do, what they could do and what they should do. This allows them to consider their personal perspectives and actions in the light of moral or ethical attitudes.
Case studies	Case studies enable students to investigate issues that affect their local area, to work with private enterprises and community groups and to work together in finding solutions for local issues.
Reflection	This pedagogical approach provides opportunities for learners to reflect on personal roles, attitudes and responsibilities in relation to a range of sustainability issues.
Critical reading and writing	Reading and writing are seen by tutors as important social practices and the key to advancing sustainability and literacy. Learners can gain from deconstructing discourses to identify the possible motivation of the author.
Problem-based learning	Problem-based learning is an iterative learning process that is used to teach a whole range of subject matter. This process promotes both the conceptual and practical aspects of sustainability literacy.
Modelling good practice	Learning also taking place implicitly through the hidden curriculum. The research captured how many educators sought to reduce paper use and turned off lights out at the end of sessions as a means of teaching learners the importance of action-taking.



4. Example of good practice

In this chapter, we will present two examples of good ESD practice in HEI in Slovenia.

4.1. Bachelor course on “Social Responsibility and Volunteering” – a contribution to social dialogue

The role that the HEI plays in Slovenian society is an area where there is significant discussion. For example, while authors emphasize the importance of quality teaching and research, much focus on the orientation of that research and the importance of ensuring that it teaches ethics and promotes human rights and environmental sustainability. Many also note HE’s contribution to development and its capacity to produce graduates with an awareness of history and knowledge regarding solutions to today’s sustainability problems. While some authors focus primarily on the important role, others suggest that the HE role is broader and should play a role in such matters as democracy, culture and research.

“Social Responsibility and Volunteering” is a course developed at ISSBS (International School for Social and Business Studies, Slovenia). It is designed to help students realize that they can make a difference in their communities through civic and political involvement and participation in volunteering activities in different types of organizations, such as private businesses, non-governmental organizations, educational institutions, associations, and elderly homes, etc. This contributes to an enhanced understanding of phenomena in the field of social responsibility and volunteering. This allows for the discovery of the “sustainable development” reality from an active and participatory approach, thus enhancing the role of the youth in their communities: students value the importance and approaches to volunteering for social and economic wellbeing. The course fosters the ability to contribute to the development of our societies and economies via personal volunteering experiences in the immediate local and regional backgrounds.

In this program, students and young people commit themselves to first-hand volunteering and solidarity experiences... The course has as its main goals to enhance debate, knowledge and understanding of phenomena in the field of social responsibility and to foster new forms of civic participation and volunteering activities in our society.

We believe that it is above all through the involvement of young people that the wider community will assure its future and, therefore, we need to pay special attention to this target group. The underlying aim of this course is to raise awareness of the sustainable development competence, as well as stimulating debate and reflection on world diversity. In such a way, students can claim ownership of the world and the future and better exercise their rights to contribute to both; they can also learn how to overcome challenges in achieving a better world. We therefore seek to encourage all to think, question their surroundings and contribute to social dialogue.

Young people, as the World Youth Report points out, are the most flexible and perhaps the most capable of adapting to, and making use of, new opportunities. They are also the best educated generation in new information technologies; they have benefited from economic growth; many travel around the world for work, studies, exchange projects and vacation; and telephone and the Internet enable them to stay in touch with friends and relatives abroad.

Kotecha (2010) explains that according to the report, “Embedding social responsiveness in the core activities of the university also positions the university as a player in addressing



the challenges of society. As in our society and the world change, universities especially are required to respond to different challenges that arise, to ease the plight of the poor, to develop innovative solutions to many and varied problems, to offer informed guidance to those that our democracy has given responsibilities for leadership and service delivery, and to ensure that we engage with partners for purposes of social advancement” (Kotecha, 2010). Petter (2008) directly links quality to the nature of partnerships with communities. He explains that universities, “by encouraging faculty and students to work in partnership with communities, can enhance the scope and quality of research, provide better learning opportunities, and increase their social relevance and efficacy”. Tandon and Hall (2012) also share the view that, “community engagement may sometimes actually contribute to improvements in HEIs, especially to their teaching and research functions”. In these senses, higher education institutions can benefit through collaborative, equal partnerships with communities.

We also see that the phenomenon of globalization makes youth lifestyle, features, aspirations and worries increasingly similar, displaying common aspects, rather than differences: young people strive to be the first to receive information, as a means to influence the group (form of social interaction), and they are eager to pass on information in an original way (as a way to enhance their image), being also able to memorize and disseminate information, becoming in this way “informational conductors”. In light of this, particular attention should be given to education as a channel for helping the youth to learn about the roles of interaction, communication, creativity, capacity to influence, personal responsibility and personal recognition aspects of sustainable development. Young people need to learn and understand, in an innovative and convincing manner, how sustainable development affects their lives and how they can help shape sustainable development.

Through education, young people can claim ownership of and better exercise their rights; through education, they can get together, identify common values, strengthen democratic principles and improve social cohesion. Through education, we therefore seek to encourage all young people to think and act on things that matter, question their surroundings and contribute to social dialogue. Good education provides opportunities for and inspires these behaviours. Higher education must constantly return to the etymological root of the word “education”: *educare*, which means to draw out from within.

In the literature, there is some exploration of the basis for determining the role of the higher education institution in society. Vallaeys (2007) bases his assessment of the role of higher education institutions on the impact they have on society. He groups the impacts under four key areas: impacts of organizational functioning on staff, students and the environment; educational impacts; cognitive and epistemological impacts; and social impacts. Using this framework, he says there are four activities that make a university socially responsible: responsible campus (ethical and democratic internal processes and respect for the environment); responsible education (curriculum supports and promotes the sustainable development of society); the socially responsible management of knowledge (participatory approaches to research involving human subjects, broad dissemination of findings); and community based participatory research and communities of mutual learning for development (Vallaeys, 2007).

There is plenty of evidence that civic participation is a key element of social projects aimed at transforming the individual as well as societal conditions: in order to bring about changes



in living conditions and influence the determinants our societies, one needs to know how to work with others to initiate change, particularly those who are the key players in making changes happen at different levels.. Genuine civic participation affects one's life and the life of the community in which one lives. It is, thus, a basic element of democracy and a fundamental right of citizenship. Therefore, if youngsters and graduates?? are not drawn actively into these processes, there will be little chance of their developing a sense of ownership and therefore little likelihood that any activity will lead to sustainable changes in practice, behaviour or action.

Parson (2014) states that higher education institutions are increasingly being seen as a means to provide solutions to current challenges facing the world, which are most often understood to be a result of globalization, increasing economic disparity and environmental degradation. Different understandings of how the HEI provides value present challenges to HEIs in terms of the focus of curriculum and the orientation of programs designed to address global and regional problems. Social responsibility scholars suggest that the higher education institution must also prepare future generations and their leaders to understand their world and the challenges they will be facing holistically. Whether they are looking at questions of economics, environmental sustainability or social justice, having a comprehensive understanding of the myriad forces at work in the global society would prepare future leaders and workers to make effective decisions. The challenge for higher education today is to respond to outside forces in a responsible way as institutions, while also continuing to advance a meaningful understanding of the context within which programs are being run for the benefit of students but also society as a whole.

4.2. Education and research in the real environment – a contribution to the protection of health and nature

4.2.1. The Dravinja Valley as real learning region for adaption to climate changes

The Poljčane municipality with its Educational Polygon is one of the learning communities that has an established infrastructure for education and research in the real environment. From 2009 to 2011, various activities in the Dravinja valley were carried out, with the aim of creating the conditions for real education – education in the real world. The establishment of the learning region created the opportunity to protect nature and to include in further development priority items for protecting nature and the environment in order to be able to offer such an environment to the interested public in the form of educational, leisure, tourist, and cultural, environmental, economic and public agricultural programs. The Dravinja valley has become an example of good practice, demonstrating that nature and protection of the natural environment can provide valuable opportunities for economic and social development. To achieve this goal, active integration of the local population was necessary.

The Poljčane Municipality has become an educational and promotional centre for educational activities in Slovenia and Central Europe. Between 2009 – 2014, special educational facilities were developed in the Dravinja valley to support learning on adaptation to climate change:

- Constructed wetlands;
- Permaculture and Ecoremediation polygon with recovery of wetlands, extension habitats of Phytoremediation plants, expansion of vegetation zones, planting of forest islands, extension of hedgerow pattern, conservation of forest edges,



- an extension of smoothing strips along watercourses and the maintenance of hydrophilous plants, permaculture garden, soil profile;
- The learning polygon for ecoremediation (established ecosystems - pond, waterfall, swamp, fishpond, oxbow lake, stream, swamp forest, coniferous forest, deciduous forest, forest edge, clearing and cave ecosystem; built eco remediation - hedgerow, sound insulation, anti-erosion protection, filter vegetation belt);
 - The learning polygon for permaculture and self-sufficiency: high beams, terraces, herb beds, an orchard meadow, scrub, compost beds, cultivation of earthworms, ladybugs home, solar system, fountain, natural toilet and living buildings;
 - Learning paths to get to know watercourses, floods, natural ecosystems, wetlands, plants and animals);
 - Observation points with observatories for birds, animals, flood areas and animals in protected areas;
 - Cycle learning paths between organic farms and
 - Ethnological learning village for learning about the way of life in the past (old tools, old techniques of food production).

The learning regions include several observation points, testing and measurement sites, lookouts and materials for teachers and students (at various levels of education). The thematic learning trails in the Dravinja valley form ideal network connections to natural, sociological and sporting activities, with the aim of offering all generations (with an emphasis on youth) the chance to experience the landscape holistically, to learn about processes in natural environments and in settlements, and to gain the ability to evaluate and make contact with nature. The educational moment and the importance of students' developing a positive attitude towards nature are also emphasized (Mitsch, Jorgensen, 2004). A key objective of the project is to establish a technical and professional basis for a network of learning trails that will promote integrated learning that incorporates teaching methods that promote perception of the landscape and nature with all the senses perception, observation, and experimentation, experiential perception of the landscape, self-activity as well as exercise and movement in the natural environment.

In the context of professional backgrounds for the preparation of educational curricula and modules for classroom practice, field work and excursions, these curricula were prepared:

- curricula in accordance with the knowledge catalogues for compulsory and elective modules of the Environment Preservation Technician educational program;
- curricula for research, field work and learning at the established eco remediation polygon in the fields of nature preservation, environmental protection and environmental education, with cross-curricular links to mandatory general education courses, such as biology, geography and chemistry;
- Curricula for natural science days and field work within primary education (www.ucilnicavnaravi.si).

The establishment of learning regions has shown several advantages:

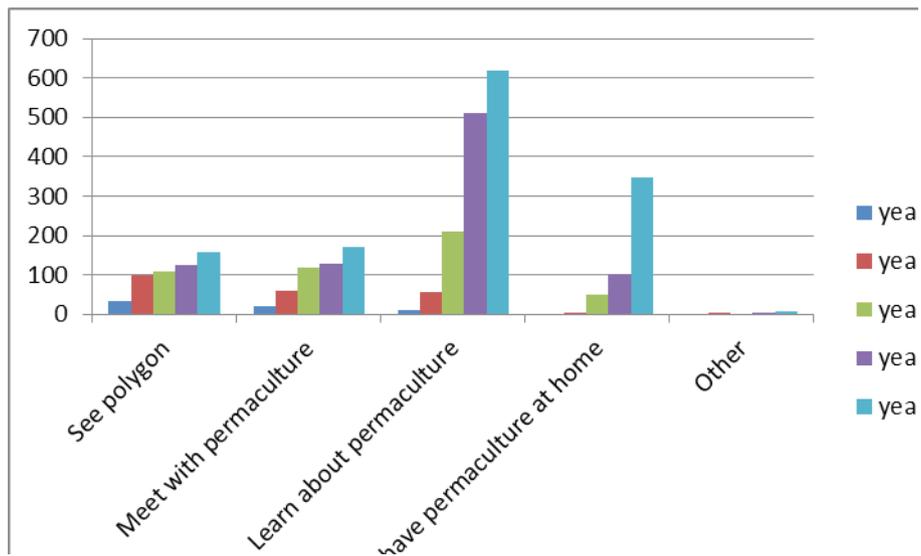
- the local community supports the promotion of their own region and is therefore actively involved in education; there are also economic benefits through increased sales of food and beverages;



- sustainable development as an interdisciplinary science, has exceptional potential for the development of learning regions in Slovenia, with the aim of connecting natural and cultural potential and upgrading them by using traditions of the landscape and innovative approaches;
- Examples of good practice of sample application of eco remediation and permaculture show that, through the local approach to using natural systems we can significantly reduce the impact of climate change.

4.2.2. The results of the monitoring of visitors in a learning polygon Dole focusing on student population

From June 2009 to June 2013, we collected data on the number of visitors as well as monthly and yearly follow-up with the aim of understanding the dynamics of the visits. It is important to emphasize that the polygon is dedicated to research and education, and that it is not a tourist destination, so we did not carry any commercials. During the main season from May to June and September, the interest of the schools in exploring the polygon is high, so we do not use propaganda techniques to attract visitors. As shown in the graph, the number of target populations increased over 4 years. The greatest increase has been with elementary schools because experiential education has become a compulsory requirement of schooling. In the first year in the polygon, there were no children from the kindergartens, because preschool teachers thought the content in the polygon would be too complicated for children of this age. Once the teachers realized the polygon was suitable for all ages, the smallest children of the neighboring schools became permanent visitors. Elementary schools from all over Slovenia visit the polygon; secondary schools, particularly from eastern and central Slovenia, visit regularly; and students come from the University of Maribor, University of Ljubljana, the College of Velenje and the University of Primorska. For all levels of students, the main objective is to identify sustainable development in practice and appreciate nature and natural processes. Visitors also include members of societies, families, tourists, teachers and heads of tourism organizations and various associations...





In order to monitor the relationship of the student population of permaculture we are having educational programs conducted guided interviews. During the implementation of education we recorded motivation for the visit, with the aim of monitoring the transfer of knowledge into practice).

On the learning polygon for self-sufficiency we teach permaculture to different generations. In four years increase, the number of school-age children in learning the polygon and the number of others, including a large population of pensioners. For the intergenerational transmission of knowledge permaculture is ideal because older people still know the consideration of natural principles, younger people have interest in using this the legality in practice. The second group is also significant potential generation of pensioners which is still active and can be permaculture over again actively involved in society. It is also recognised that the content of sustainable development in primary school is compulsory, so all students have the opportunity to learn about permaculture as an approach to achieving sustainability. From 2009 to 2013, the number of target groups increased, and student generation wants to have during the study to obtain their own professional experience. Here again has proven permaculture as an ideal approach for innovative practical education and a responsible attitude to natural resources, increase self-sufficiency and as a contribution to social responsibility. With permaculture develop green jobs, the possibility of supplementary activities in rural areas, and thus the possibility of self-employment. Since the permaculture in Slovenia lot of adherents in this area is opening up new opportunities for young people that some have used.

5. Conclusions and recommendations

In our article, we wanted to highlight some challenges and pathways for transformation of higher education institutions (HEIs), with a focus on innovative practices in learning and knowledge development. In the text, we also wanted to recommend further promoting of ESD especially in its critical areas as follows: (1) advancing policy; (2) transforming learning and training environments; (3) building capacities of educators and trainers; (4) empowering and mobilizing youth; and (5) accelerating sustainable solutions at the local level. HEIs should conduct further research on: the importance of ESD competencies to graduate employers; community, student, and academic partnerships for ESD; the different definitions and application of ESD being used by students, academics, and policy makers. The academic staff should continue to include interdisciplinary teaching and research across their institutions and the HE sector that demonstrates the relevance of ESD to students and their academic studies. Most importantly, students should encourage their institutions to take a holistic approach to ESD, ultimately embedding it into their core purpose through their teaching and learning, thus ensuring it becomes a graduate attribute.

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