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Learning How to Become Self-sufficient

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Abstracts

This article intends to raise the awareness of self-sufficiency among young people through practical experience and encourage them to generate ideas to launch (green) social initiatives and feel ready to take action and to become self-sufficiency. Numerous researches and experiences in modern teaching have shown that pupils learn most from various practical and research activities which include case studies. The subtitles of the moduls include Ecovillage, Schoolgarden, Biodiversity and Secret of soil. The moduls and teaching training activity will also include some practical activities such as organization of youth activities in degraded areas, areas with a lack of natural resources and in areas with erosion, floods to arrange the food production areas or tourist attractions. The approach is based on an independent learning process and also in the form of a discussion, team field-activities and interactions with stakeholders on farms and in the community, self-reflection of the learning process and the evaluations of the new acquired knowledge.

Keywords: Education, Self-sufficiency, Ecovillage, School-garden, Biodiversity, Soil.

Introduction

Numerous researches and experiences in modern teaching have shown that pupils learn most from various practical and research activities which include case studies and collaboration with different stakeholders in the local environment, e.g. teachers, parents, experts, local farmers, etc. This makes it easier for them to understand the complexity of systems that include the environmental, social and economic dimension. Learning of self-sufficiency is based on the so-called experimental learning in real-life situations, the key approach being " learning by doing " as justified by John Dewey (Francis et all, 2011; Bawden, 1991). This approach enables young people to develop critical thinking and the ability make independent decisions on finding solutions and taking measures to solve real problems in their everyday life and the local environment (Caporali, Lieblein, Fragstein, and Francis, (Eds.) 2007). While the teacher takes up the role of a mentor, mediator and observer through the learning process, he also encourages and directs students to find a solution for themselves (Leiblein at all. 2012; Slough, Milam, 2013 and Meek and Tarlau, 2016).

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Promoting social and green entrepreneurship among young people by means of non formal learning activities will contribute to:

a- Sustainability

b- Wellbeing of the Earth, the societies and the future of humanity through promoting social values

c- Self-sufficiency and utilizing innovative technologies for the good of both individuals and societies in a healthy environment

d- Benefiting from financial and human resources efficiently in order to create and sustain quality labour market integrated with green and social values.

In this research work we will raise the awareness of young people regarding social values such as sustainable development, appreciating renewable energy resources, promoting recycling limited natural resources. Then we will pursue to reveal innovative ideas integrating these "social values" with "initiatives".

There are many young people neither in employment, education nor in training (NEETs). These young people need to meet employment or entrepreneurship opportunities regarding green initiatives. Also undergraduates on the first Bologna level (BA) must be employed after 3 years. Study programs, or non-formal trainings do not include sustainable competences, and therefore young people do not get practical experience about how to use self-sufficiency, sustainable green technologies and sustainable mobility. They often do not even know the concept of sustainability as a way of life, so they will get practical experience and knowledge on how to live sustainably through this project. Especially freshmen or graduates from related programmes can have a significant impact on practical and planning activities.

European Commission's report on Quality Youth Work (2015) states that youth work should respond to the different needs, interests and experiences of young people. The report also states that young people are not the only stakeholders that need to be taken into account and engaged in youth work process. The quality and success of the youth work is highly dependent on its capability to meet and constructively relate to the knowledge and expectations of youth workers as well.

One of the priorities which Erasmus + Youth Programme features is about capacity building of youth workers. Youth workers' capacities should be enhanced form many aspects including "methods and techniques for non-formal learning, methods for reaching out to young people with fewer opportunities such as the ones who are neither in education nor in employment (NEETs)". Youth workers should be equipped with knowledge about green initiatives and experience to foster the inclusion and employability of young people with fewer opportunities.

This article foregrounds capacity building of youth workers regarding green initiatives for sustainable development including self-sufficiency, renewable energy resources, green technologies and green jobs in the context of permaculture as a sustainable style of life. The article will enable understanding of sustainability as a way of life. Young people will gain practical experience of placing sustainable water and soil arrangements in settlements. This will enable them to understand the sustainable use of natural resources. They will learn about the possibilities of developing their own green initiatives.

Today, we witness spectacular innovations in technology. Highly effective products, services and business models are readily at the disposal of the modern society. We appreciate innovations which provide us with better life conditions.

However, the conveniences that we rely on cost serious side effects such as climate change, pollution, loss of biodiversity and deforestation. Awareness of effective and careful use of limited natural resources, and gravitation to renewable ones carries us to an upper consciousness which is sustainable development.

"Sustainable development, which meets the needs of present without compromising the ability of future generations to meet their own needs" (UN, 1987) will provide us with economic and technological development while launching green initiatives.

As an example of green initiatives, Permanent Culture (Permaculture) is an ecological design and engineering which develops sustainable human settlements in both rural and urban contexts. It is a multidisciplinary toolbox including agriculture, water harvesting, hydrology, energy, natural building, forestry, waste management, aquaculture, green technologies, and community development. Since it includes a wide scale of innovative green initiatives, permaculture has been the focal point of this project.

There are many local and global communications and sanctions in operation addressing the issue. For example, EU SUSTAINABLE DEVELOPMENT STRATEGY focuses on a better quality of life for everyone, now and for generations to come. The EU YOUTH STRATEGY aims to raise awareness of global issues among young people and supports encouraging them to volunteer for environmental projects and act green in their everyday life. These communications indicate that an immediate need raises regarding youth work for taking action to promote green initiatives to increase youth employment.

Young people need practical knowledge of green initiatives for sustainability for sure. Therefore, we will organize activities in selected settlements where young people will work in the practice of sustainable water management (water retention in the soil, reduction of water evaporation), collection of rain water, permaculture food production arrangements and biodiversity.

The main goal of the article is to enable young people to gain awareness of green initiatives and improve their green entrepreneurship skills through workshops and practical activities and in this way to contribute to the sustainable and healthy life conditions.

There are many existing resources, giving information about sustainability. They generally provide general information without targeting any specific group. Also the needs of young people are neglected and contents aren't prepared in a way to attract their attention related to the global and local environmental threats, sustainable development, green initiatives and permaculture as a perfect and actualized example of these notions. This research work outcome will target young people and be based on learning and guidance needs of young people through practical activities which will provide a full comprehension about how to actualize sustainable development, self-sufficiency and eco-friendly solutions in permaculture areas.

In Figure 1, the possibilities of activities for gaining experience in self-sufficiency are written.

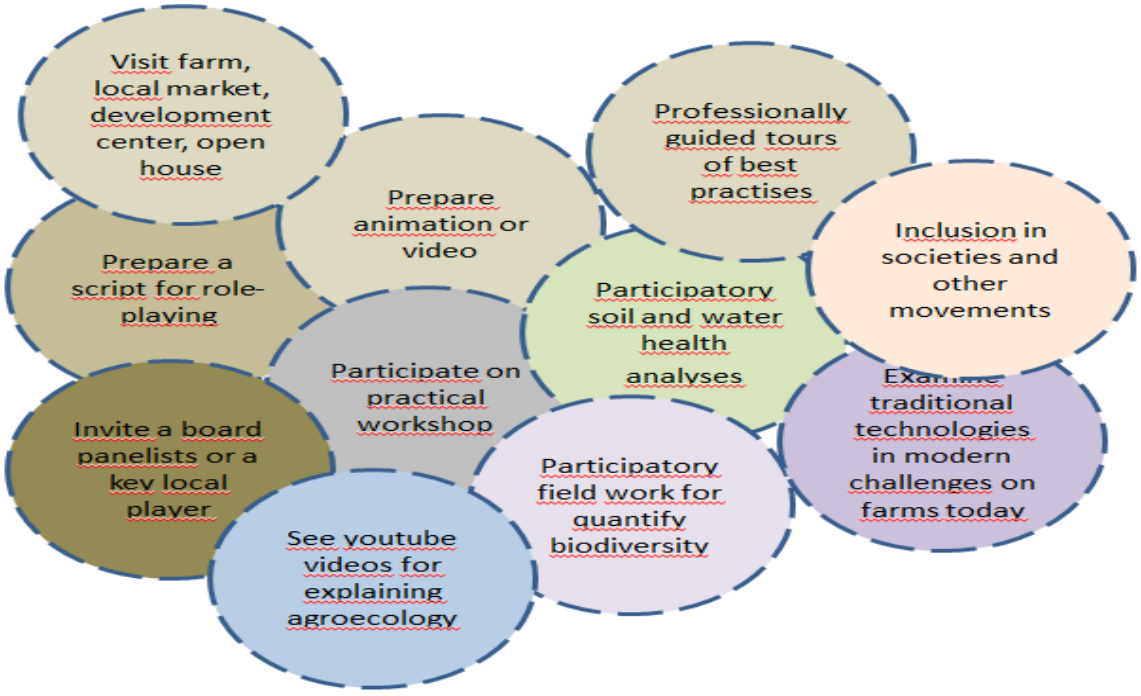

Figure 1: *Young people activities for self-sufficiency.*

Methodology

Development of Modules has been developed with the main purposes:

- To show the diversity of self-sufficiency approaches
- To highlight the activity work for young people
- To work on the learner's obstacles about self-sufficieny.
- To optimize the exchange of knowledge and skills on the different issues of self-sufficiency.

It is intended primarily to:

- Promote innovative self-sufficiency approaches.
- Introduce diversity of self-sufficiency approaches in training, where the learners are actively involved in the learning processes.
- Support linking between knowledge, training and practice.
- Introduce self-sufficiency to teachers and trainers through practical experiences.

The modules include the skills and competences which youth workers must acquire regarding sustainable development. The subtitles of the modules include:

a- Ecovillage,

b- School-garden,

c- Biodiversity,

d- Secret of soil.

The modules and teaching training activity will also include some practical activities such as organization of youth activities in degraded areas, areas with a lack of natural resources and in areas with erosion, floods to arrange the food production areas or tourist attractions.

Results and Discussion

Practical education in the field of self-sufficiency can be implemented as a practical lecture (in school), or as a practical work experience (among employers). Schools can connect the content of agroecology to all subjects and offer them as additional options of practical education. The scope of practical training (practical lessons or practical work experience) is 30 hours and the teacher can distribute the hours according to the interest of the students and the school. The hours of practical lectures in school are teaching hours in duration of 45 minutes, hours of practical work experience are working hours in a range of 60 minutes. Agricultural schools can carry out the practical work experience with the work on school property.

Ecovillage

Ecovillages are one of the possibilities if we want to choose a different future for ourselves and our descendants. The nature shows us, sometimes maybe in a quite explicit way or even in a cruel way, that our current "development" is not going in the right direction. Climatologists and other scientists are warning us that we do not have any more time to waste. Therefore, the experiences and solutions of various ecovillages from all around the world, are even more valuable since they are tested and people there live according to the principle of sustainability. Thus, ecovillages can be seen as sustainable research communities that are committed to discovering new ways of coexistence of people and nature. Eco-village is a sustainable human settlement, which is in harmony with all aspects of human life, including cultural, ecological and spiritual dimension.

The creation of new settlements (may also be created in existing urban environments) that are built human-friendly, encourage people to interact with each other and to have real relationships, rational use of energy, if possible they produce their own energy and healthy food, less need for transportation and in particular allow a higher quality of living and thereby contribute to the development of humans as material and spiritual beings. Table 1 represent modul for learn about the ecovillage. Ecovillages are the most important places to understand self-sufficiency.

School-garden

School-garden is place for practical activities and learning and have different dimensions (Vovk Korže, 2018):

Physical-practical space:

- To practically apply theoretical classroom knowledge in systemic thinking by producing vegetables in an organic manner (Picture 2) and
- to acquire skills and experiences in all practical fields (tools and equipment, irrigation, soil tillage, construction) by planning and organising.
- To enable the implementation of agroecological ideas (increasing diversity, creation of habitats for beneficiary organisms, exploration of agroecological solutions) in a "protected" (no need for economic viability) setting.

Social space:

- To learn and apply methods for self-organisation of by setting objectives and conducting activities to reach it in and

Table 1: *Modul – short school program for learn about the ecovillage*

Module Title Hours: 30 Lecture: 2 Excursion/Exercise: 8 Self-study: 4 Preparation for contact time: 10 Literature review: 3 Report preparation: 3	Ecovillage
Interdisciplinary connections	Geography, electronics, sociology,
Results of the module	Topic is connected to getting to know eco-villages via online web pages and films. The students get to know how ecovillages function, how they are composed and the way of life in them and they understand the meaning of sustainability as a way of life.
Context	Possible Educational Activities for Achieving the Guidance for Objectives: With the help of web pages the students draw up a plan of an ecovillage. The students calculate the amount of carbon footprint in the ecovillage. The students make a draft of their work day in an ecovillage and in their day they search for elements of agroecology.

- to enhance students´ skills to communicate, negotiate and discuss topics to come up with a common agreement.
- To create a community of gardeners, who work together and learn practices from each other.

Individual space:

- To enable the individual experience of practically working with „nature "and (bio) diversity by taking over responsibility for a piece of land for at least one season.
- To enable the individual to define one´s position and responsibility by taking over activities in a group (social dynamic) and
- to enable critical reflection on personal challenges (self-organisation, timekeeping, etc.) and therefore the basis for personality development.
- To enable an environment for mutual learning from each other's talents and capacities

Societal-political space:

- To enable political socialization of individuals by "acquiring the space" and to then open up the movement's perspective of self-sufficiency.
- To develop students´ capacities to strategically work towards political goals and
- to enable critical reflection of existing power relationships in the current political system. Table 2 represent modul for schoolgarden, because many educational organisation (kindergarten, primary and secondary schools have gardens).

Picture 2: *Gardens have different perspectives.*

Table 2: *Moduls for schoolgardens need many educational institutions.*

Module title Hours: 30 Seminar: 2 Excursion/Exercise: 6 Self-study: 5 Preparation for contact time: 5 Literature review: 9	Schoolgarden
Interdisciplinary connections	Learning activities connected to organic farm, soil science, self-sufficiency, ecological farm, urban permaculture, green agriculture
Results of the module	Case study analyse: each group of students should make an self-sufficiency analysis of a community garden. Here they are introduced to the stakeholders and their space. The case also might be a (regional/local/farm-level/plot-level) social, technical, economic challenge.)
Context	In module we use a socially innovative perspective of self-sufficiency, namely that of self-sufficiency as a scientific discipline, a movement, and a practice. In our teaching model, we would like to reflect this. To do so, we believe in a very open-ended teaching approach that contains activity topics surrounding the following topics: **1) Crossing the borders** (self-sufficiency teaching might only be fruitful if the daily knowledge about agriculture is challenged in a practical manner by students and their teachers. "Thinking outside the box", by taking up a daily life situation/material and turn it up-side down; What are the consequences of the consumption on my health, my wealth,

	the region's economy, what might be an alternative?). **2) Systems approaches** (here students are introduced to systems of thinking and framing agroecology within a system). It might be possible here to focus on one element of the agroecological system and establish all possible relations to other elements. **3) Case study introduction** (each group of students should make a self-sufficiency analysis of a community garden. Here they are introduced to the stakeholders and their space. The case also might be a (regional/local/farm-level/plot-level) social, technical, economic challenge.) **4) The social in self-sufficiency** (understanding the social aspects). **5) Multifunctionality** (this is an important aspect to think about in productive agroecology systems, whether within a farm system or a social group in agroecology. The multi-functionality of an organization could be determined, or the multi-functionality of an edible wind breaker along a field (habitat for beneficial (and other) organisms, spot of high diversity, source of income (timber, berries, honey, etc.); ideas for how to make elements within student's case studies could be identified). This can also be the multi-functionality of a gardens community, in that working together more materials, resources, money, labour and harvest might result. **6) Case study system check** (re-visit case study, meet with stakeholders, discuss progress, challenges and steps forward) **7) Scenario building** (build scenarios within their groups of their case studies, to address specific challenges of their stakeholders or asses their current system and where it might be limited to or room for improvement)

Biodiversity

The productions resulting from the link between territorial vocations and production techniques are often enhanced by setting in production areas the stages of processing the agricultural product. Hence the food product in these areas also becomes cultural heritage and a local identity mark: local economic and social actors become more responsible in the management of natural and environmental resources, which are common to several sectors (agriculture, tourism, commerce, etc.).
This awareness has made the mobilisation and the protection of local resources easier, most of all those related to agricultural systems and to agro-food industry.

An integrated approach of sustainable development is adopted by a Bio-district. The different actors are involved for shared purposes: the improvement of the life quality, the employment of local population and the reduction of population's decrease in rural areas, the employment increase of young people and women, and of the quality of agro-food productions and of local livestock premises. Also, to ensure the consumers safety, a traceable and healthy food, the increasing and seasonal regulation of tourist flows, through a multiple eco-tourism and local culture supply, biodiversity protection, enhance landscape and natural resources. The Bio-districts are therefore a real answer to the present trend of economic development causing massive phenomenon of abandonment of rural areas and the increasing urbanization of people in search of better conditions of life and a higher income.

It is an overall approach to the farm management: the agro-food production, that combines best environmental practices, a high level of biodiversity, preservation of natural resources and the application of high level animal welfare standards, as well as production methods following the responsive preferences of a growing part of consumers for products obtained from natural substances and processes.
The multifunction in Eco-Regions:

- The genuineness and food safety of agro-food production and livestock, in the INNER territories becomes multifunctional;
- Protection of territories' biodiversity, their hydro geological stability;
- Renewable energy production;
- Educational farms, agro-school for children;
- Eco-tourism;
- Social agriculture;
- Care for the landscape, valorisation of knowledge and local cultures;
- Direct dialogue with the various territorial players and with citizens.

Secret of soil

Soils are habitats for human, animal and plant life. They are a vital foundation for biodiversity. Soils perform buffer and storage functions and have the capacity to transform organic material into nutrients, thereby helping to regulate the cycle of matter and to conserve and regenerate groundwater (Picture 3). They do not only act as carbon sinks but also release carbon into the atmosphere and thus, have a significant impact on the climate. Table 3 represent biodiversiy as a way to sustainability.

Table 3: *Modul for learn biodiversity.*

Module Title Hours: 30 Lecture: 2	Biodiversity

Excursion/Exercise: 5 Self-study: 10 Preparation for contact time: 5 Literature review: 4 Report preparation : 3	
Interdisciplinary connections	Biology, ecology, geography
Results of the module	The students visit a rich biodiversity area and observe the plants and their life conditions. With the help of information technology (educational boards, applications and web pages) they gain important information about the observation of plants (e.g., in the park, a botanical garden).
Context Biological + Diversity = Biodiversity	- they can make herbariums and equip them; - they can use different methods to measure properties of plants; - they can design artistic and decorative products using materials from plants; - with the use of biological devices, they can independently observe plants and animals and make inventories; - they can think about the possibility of seed banks of wild and cultivated plants; - they can make homes for living, reproduction and feeding of the animals and prepare food for the animals for the winter part of the year; - they can link their knowledge from the field to geographical knowledge, environmental protection and ethics; - they can inform the public about the importance of the conservation of biodiversity; - they can encourage critical thinking and the use of experiential methods;

Picture 3: Soil with organic matter and water capacity.

After the oceans, soils are the world's greatest reservoirs of the carbon. Soils are highly significant for humans. They are essential for growing food crops as well as non-food renewable resources. They are the foundation of global food security, at the same time they are an important source of income, especially in the agrarian economies of many developing countries.

Challenges and need for action: soils are a non-renewable and non-multipliable resource – it can take centuries or even millennia for new soil to form. Soil resources get under ever-increasing pressure from global population growth and the ensuring demand for additional food and raw materials.

Climate changes will have an increasing impact on soil fertility and erosion in the future. The increasing occurrence of drought and heavy rainfall will further exacerbate soil degradation and erosion. Changes in temperature and water balance will intensify the pressure on soils. But even the soil itself can contribute to climate change. Land-use changes and improper fertiliser use result in the release of greenhouse gases. The human beings are thus faced with the challenge of increasing soil productivity despite the deteriorating climatic conditions. The long-term aim must be to increase soil productivity and to conserve the area of land usable for agriculture by adopting sustainable land-use methods.

Knowing the soil is all the more important due to the fact that food grows in the soil and its quality depends on the health of the soil. There are many problems with fertile soil around the world as conventional methods of farming are destroying it. At the local level, soil knowledge is important for planning the use of land and for self-sufficiency. Therefore, this module is intended for the use of procedures to analyze physical, chemical and biological properties of the soil, for used techniques and interpretation of results as well as developing thinking about how we can take care of our own soil to keep it healthy and adapting to climate changes. Table 4 represent modul about the soil with instruction for research work.

Table 4: *Modul of soil is most important for self-sufficiency. This knowledge need not only in school, many family in villages in Africa.*

Module Title Hours: 30 Lecture: 2 Excursion/Exercise: 5 Self-work: 5 Preparation for contact time	Secret of the Soil
Interdisciplinary connections	Ecology, biology, geography, agronomy
Results of the module	**Soil investigation:** the students already know that soil is the basic natural resource for food production and that health of plants, animals depends on healthy soil and consequently also our health depends on it.
Context	The students carry out field analysis of the soil: - Soil sampling - Soil deep - Soil colour - Water in soil - Soil structure - Soil texture - Reactions of the soil - Carbonate in the soil

Conclusion

In practical training, the emphasis is on cross-curricular integration. We can often organize teaching in the form of project work and it is necessary to predict in advance the scope of this type of work for the preparation of both, students and teachers. In this way the learning activities allow the students to develop the elements of learning through research at school, from task planning and collecting data to formulating findings and presenting the results. The approach is based on an independent learning process and also in the form of a discussion, team field-activities and interactions with stakeholders on farms and in the community, self-reflection of the learning process and the evaluations of the new acquired knowledge.

The activities are set up so as to encourage learning based on mutual cooperation among students, departments, teachers and the local environment. The teacher should bring into living and working environment of the students as many lessons as possible. The teacher must identify the prior knowledge of the students and base his lessons on the students' knowledge. At the beginning of the school year, the teacher supplements and specializes the contents of the subject. Therefore, it is not written how many hours are planned for each module. The lessons should not only take place in the classroom, but also on farms and educational polygon where students, after the preparation in the classroom, learn with practical experience about the agricultural industry and carry out various practical activities. In the context of the practical part, the students learn to observe and critically evaluate the results of their own work and learn to predict and plan the working processes.

The learning activities should be carried out in cooperation with the local environment. To make the content interesting and to gain experience from the real local environment the students can independently organize an exhibition of their own work, competitions, etc.

Local experts from different fields such as connoisseurs of medicinal plants, masters of domestic crafts, representatives of agricultural services and organizations who would present their work and knowledge should be involved in practical educational activities (Vovk Korže, 2018).

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