

SUSTAINABLE RURAL DEVELOPMENT THROUGH VOCATIONAL EDUCATION: SOT RIVER LANDSCAPE RESTORATION WORKSHOP

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Abstract

Most of the small towns in the inner area of Spain have problems with the loss of population, low economic development, and unemployment. This is a widespread phenomenon in many areas, such as the Valencia region, where significant differences exist between the periphery coastal zone and the interior.

Some of these towns have natural resources like highlands, rivers, and vegetation as significant tourist attractions. Vocational education programs are oriented to increase the employment of the residents while keeping the characteristics of its population and its territory in the different municipalities.

Sot de Chera, located in the region of the Serranía (70 km from Valencia), is one of these municipalities. This paper presents the educational experience using one of these programs and workshops for the recovery of an area of outstanding landscape and environmental value.

During the last decade, some efforts have been made to combine these natural resources with other activities to increase the area's population and economic activity.

The case presented uses a combination of teaching methodologies and practical training connected with the daily life and activities of the people in the town. It has also involved all the inhabitants, including their different opinions and participation.

The results obtained during the training and occupational project demonstrate the great potential of these interventions. These types of activities and programs have become a substantial improvement for the sustainable development of these areas.

Keywords: VET (Vocational Education and Training), sustainable development in rural areas, countryside improvement, employment workshops, landscape recovery.

1 INTRODUCTION

This paper describes the experiences and teaching innovations in the Employment Workshop called *Landscape Restoration of the Rio Sot*, carried out between 2014 and 2015. Although academic activity was developed in this period, its influence and results in Sot de Chera's population have spread over time with a very positive impact.

1.1 Context

Sot de Chera is a municipality located in the interior of the Valencian Community, in the region called *La Serranía*. It has around 400 inhabitants, which multiplies to 2,000 or even more in the summer. Its main attraction is the river Sot, where the intervention was developed.

This population have remained more or less stable in the last ten years. It has slightly improved over previous periods, especially the drop in population between 1980 and 2000. It is around 10 to 15%, with the most affected age group being people between 25 and 44 years of age, followed by those over 45 years of age [1].

An intensive six-month training workshop was planned and subsequently developed under these circumstances. This workshop included a series of activities focused on improving population employment. The aim was to encourage the acquisition of new skills and abilities and boost the chances of finding a job or generating activity in self-employment.

The action also had in mind the principles of rural development and sustainability, seeking to improve the conditions for balanced growth of the town over time. It presented three axes related to key issues, considering environmental, social and economic problems and introducing other cultural and vernacular heritage factors.

Regarding the social aspects and objectives, the initiative pursued improved training aimed at unemployed people to offer them more significant opportunities. Therefore, the teaching staff required expertise and experience in the field of work to be developed and training in other areas of complementary knowledge and soft skills.



Figure 1. General view of the town, the urban area and the nearby vegetation (V. López-Mateu file, 2022).

Environmental issues were developed through different interventions in the natural spaces close to the town without missing the urban environment itself. The area belongs to a Natural Park and has a high landscape and geological value, and the built-up zone maintains the typical constructions of a village. Still, when the action was carried out, both were a bit in decay.

Finally, related to all this and achieving economic progress, there was also the improvement in the use of natural and open public spaces. This benefit would increase and promote the tourist attraction of the population without affecting the environmental values. A considerable part of the town's income comes from the tourist activity that seeks, above all, the green and open areas of the region.

2 METHODOLOGY

2.1 General aspects

The methodology followed consisted of combining a series of classes or sessions in the classroom and field practices carried out by the students. Two monitors direct and conduct all teaching and onsite activities, administratively coordinated by the City Council and supervised by the SERVEF (Valencian Employment and Training Service).

The sessions had a general schedule that followed the approaches of the "training modules" of the SEPE (Public Employment Service) on professional training in gardening and landscaping [2]. These modules served as an index for the plan, which was adapted to the duration of the workshop. At the same time, it was necessary to introduce a learning reinforcement in general or complementary subjects, with more open topics to customise the students' particular requirements.

Regarding the aspects of the learning model, the whole process was dynamic, participative and interactive. The contents were based on the primary issues that the students already knew, following the constructivist theories [3]. It progressively expanded and became more and more specific, following a methodology that we can call “in a spiral”.

Most of the subjects and topics followed this approach during the workshop, applying the development proposed by J. Bruner: “any subject can be taught to a child of any age honestly and effectively” [4]. To a certain extent, and in another age range, we could consider the students as “children” due to their limited training or previous preparation in some areas.

Following this approach, as opposed to linear learning, a process was generated that returned from time to time to resume each subject’s primary contents or structures. In this way, the learning process was reinforced learning reaching increasingly higher levels of complexity. Therefore, the students strengthened their knowledge based on an increasingly consolidated scaffolding [5].

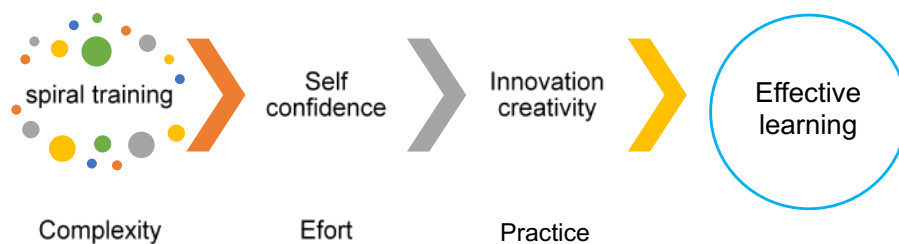


Figure 2. General scheme of the learning model followed.

This strategy also means that students, who in many cases have lost the habit of studying, can regulate their progress and effort, generating greater self-confidence and avoiding frustration or dropouts. Moreover, senior learners progressively develop aspects such as argumentation, the aptitude to experiment with alternative solutions, innovation, and creativity.

On the other hand, this line of action also represented a crossroads between learning and forming concepts in a “scientific” way, according to a commonly accepted logic, and the “popular” methods or those adapted to a cultural environment and social context. In our case, particularly in rural areas, knowledge is more related to aspects and narratives of everyday reality.

Putting all this into practice and using “discovery learning”, the training addressed specific aspects such as botany, planting conditions and gardening, and use of tools and machinery to more general ones such as literature, geometry and mathematics. The teachers include other reinforcement aspects during the training period, such as “computer literacy”, digital media and resources, curriculum preparation, and the active search for employment.

On the part of the teachers, all this supposes a vast domain of the subjects to adapt them to different complexity levels or learning moments and relate them to each other. In addition, it involves guiding students in learning so that they can change their attitude and gradually acquire the ability to face increasingly complex situations, being motivated to do so.

These motivations were reinforced both intrinsically and extrinsically, through a series of interactions with each other, with the group, with the neighbours and with the environment. In this regard, individual and collective tangible achievements were key aspects. Therefore, a periodic review was carried out, generally every week or before starting new tasks, recognising the goals obtained.

2.2 Project’s scopes of action and activities programming

Mr Javier Blanch Vanacloig, the municipal Agronomic Engineer and later workshop teacher, drew up the initial project. Afterwards, it was adapted and specified by the staff, in agreement with the town hall and under the supervision of Ms M. Cruz Giménez, the SERVEF technician in charge. Initially, the project considered two areas called *La canal* and *Ribera Urbana*. These areas were enlarged by adding green areas, parks or public spaces such as streets and squares inside the urban centre or its perimeter.

One of the biggest challenges was the subsequent development of the project adapted to the needs of the students and to the context itself. That led to flexible programming due to all the existing uncertainties. However, as the results became tangible, the teaching and administrative team achieved a better definition and greater involvement of the entire group.

The planning affected the activities in the classroom, but especially outdoor activities that were carried out in natural spaces or green areas. However, it was not linear progress as the programming was adapted to the outside weather. For example, there was more dedication to indoor activities in the initial winter months, and more outdoor activities were scheduled during the spring term.

Even though the programming was prepared before starting the course, it was not an easy job. That was because the approval of the program was unknown until a few months before the beginning, and there were no similar antecedents. For this purpose, the staff used the Christmas holidays and the period of making contact with the students, the performance of medical check-ups and the introduction of health and safety aspects.

Regarding this aspect, we recognise that it is crucial for starting this activity to identify students' skills and abilities and physical condition and carry out prior training and awareness in aspects of occupational risk prevention. In addition, the team used this time to refurbish or refit classrooms and common areas and, in a sense, to recognise and appropriate the space.

As the work began, the project and object of intervention were defined with greater precision, recognising each of the intervention scenarios in detail. The initial proposal indicates that the action area was the banks of the river Sot. Still, it was necessary to specify which sites or specific parts were more suitable or needed more attention.

Along the bed river, the action was divided into two large areas. One of them, called *La canal*, was further away and conformed to an old water conduit to carry water to the urban area that ran parallel to the river. The other one, *Ribera Urbana*, was closer to the municipality and agricultural cultivation areas. The onsite works alternated between both zones.

Urban areas and public spaces were also introduced. On the one hand, they required attention as they were in poor conditions. On the other hand, it was a didactic and organisational alternative since it allowed other types of work and practices. This idea achieved great flexibility and the possibility of combining activities of different duration or relevance while involving the neighbourhood of the town.



Figure 3. General aerial view of the town and the river, with the onsite work areas (F.J. Blanch Project masterplan, 2014).

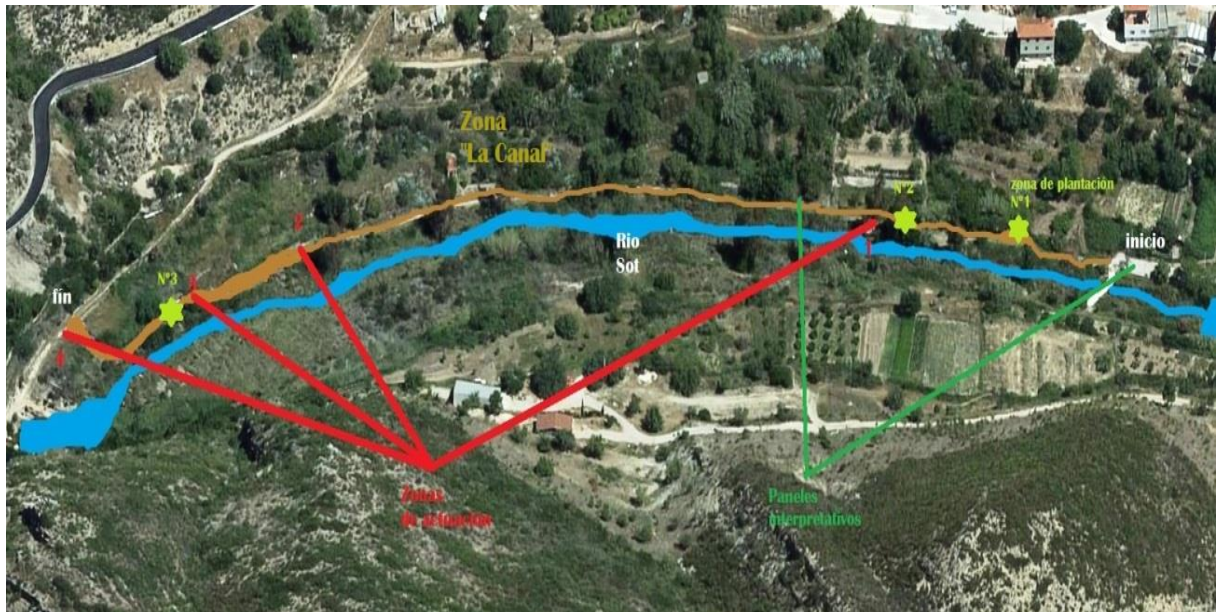


Figure 4. Detail view of the “La canal” area, with different points of interest (F.J. Blanch Project masterplan, 2014).

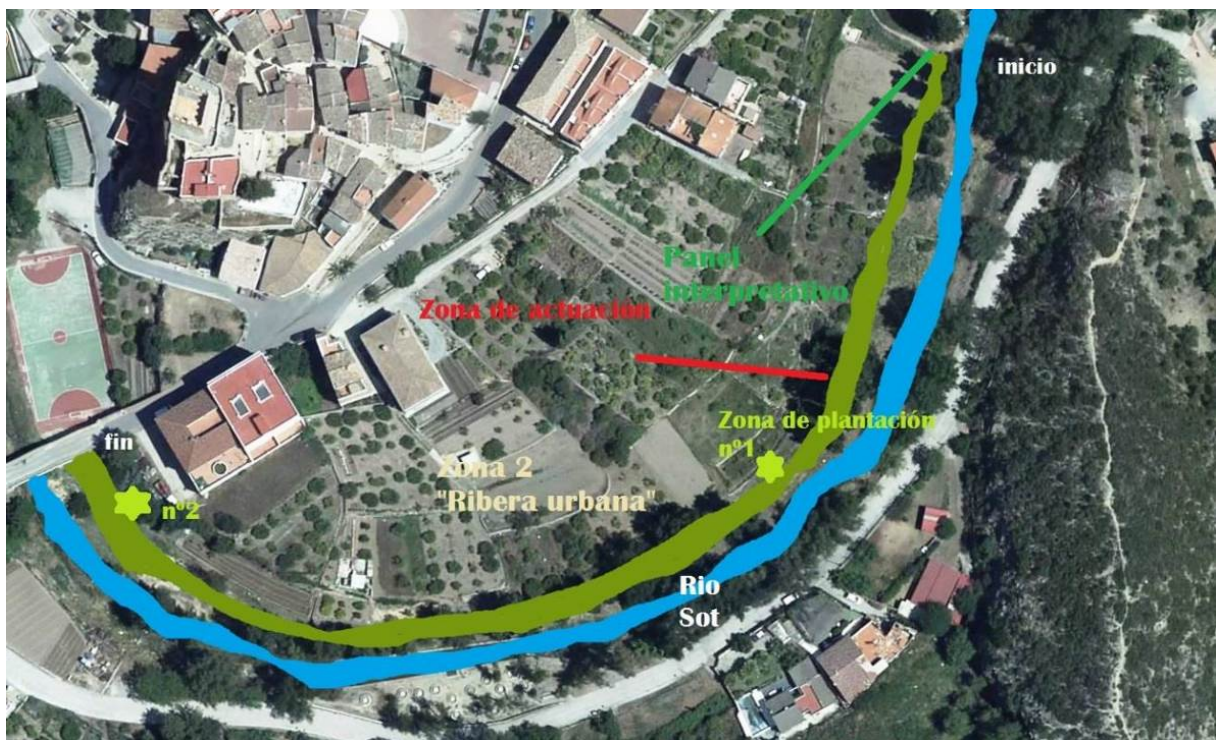


Figure 5. Detail view of the “Ribera urbana” area, with their points of interest (F.J. Blanch Project masterplan, 2014).

2.3 Development and evolution

2.3.1 Starting phase

The teaching began with the basic knowledge of botany, classification and recognition of species, characteristics, and most essential care. Afterwards, as indicated above, training was introduced for the students in general, occupational health and safety issues, which was progressively expanded and became more and more specific.

Subsequently, the team conducted several detailed inspections in the areas where the intervention would occur. Finally, an assessment of its condition was carried out using the SWOT analysis method and various plant elements and urban furniture inventories. This part concluded by evaluating the deficiencies of each location and some concrete proposals for intervention.

The workshop students participated in all these starting moments, serving as a training activity in the planning and considering of the work to be performed. In this way, planning and work schedules were jointly designed, means and resources were assigned, and initial budgets were also prepared, which improved their decision-making capacity.

In this initial period, it was also necessary to consider the administrative aspects, contract documentation, insurance, and the required administrative permits. In this case, the regional government, the Ministry of the Environment and the Jucar Hydrographic Confederation authorised the intervention in the course of the Rio Sot, a protected natural environment.



Figure 6. Classroom equipment.



Figure 7. Students in the classroom.

2.3.2 Intermediate phases and work carried out

After the launching phase, during the first and second months, the practices focused on recognising species “in situ”, relating them to their habitats. Simultaneously, the initial cleaning and pruning of plant species in the urban area and the selected regions targeted for action were addressed. Likewise, parks, planters, hedge trimming, repair of playgrounds, etc., were cleaned.

Complete cleaning and reorganisation of the municipal garden tools and machinery store were also carried out. It was an occasion to afford a complete inventory, which updated the tools and specific needs. In addition, clothing, PPE (personal protection equipment) and the necessary material for the planned work were also ordered.

Similarly noteworthy were the practical seminars held with specific gardening and pruning tools and machinery. In addition, classes were held with the public company IMELSA and the forestry brigades of the area on handling complex machines with special handling and safety requirements, such as brush cutters and electric saws.



Figure 8 & Figure 9. IMELSA brigade teaches the use of machinery and specific protection to workshop students.

Multiple works were carried out, among which it is worth highlighting: clearing and cleaning, pruning and removal of debris, restoration of walls on the path, and installation of wooden fencing in the river area. As for the urban area, planting planters was carried out with reorganisation, review and painting of parks, children's play area, and felling of trees.

These different works allowed students to develop a wide range of practical skills related to gardening and repair and maintenance work. These works were essential to complete their training and increase their chances of long-term employability.



Figure 10 & Figure 11. Workshop students during the river cleaning work in the urban riverside area near the Fuente del Pocillo.

2.3.3 Outstanding specific training aspects related to the environment

One of the most notable aspects of the workshop was the specific treatment of the common reed (*Arundo donax*). Following the *Consellería de Medio Ambiente* manual, students studied its botanical and biological characteristics and its control and eradication treatment as an “invasive species”. This work served to realise later works of cane frameworks that were traditional in the area.



Figure 12. The director plans the field practices and the preparation of the work with the students.



Figure 13. SERVEF technician M. Cruz Gimenez visits the area where the students will carry out the work.

2.3.4 Citizen participation

One key aspect of the workshop was to introduce citizen participation. To this end, an informative lecture and two discussion sessions were organised. Students exposed the environmental situation analysed in these meetings to request citizens' proposals. As the workshop performed the landscaping of different areas, new ideas or opinions were also received.



Figure 14 & Figure 15. Workshop students carrying out repair and maintenance work on the plaza and children's play area.



Figure 16. Citizen participation in lectures.



Figure 17. Distribution of plants for landscaping in private urban areas.

The town's older people also served as teachers, feeling more useful and valued. They could also hand their knowledge to younger people, preventing traditional trades ability and techniques from being lost or forgotten.



Figure 18 & Figure 19. Students carrying out traditional reed framework works, directed by the municipality's older people.

This participation was not always favourable. The town hall also received some specific complaints and claims about the workshop. In these cases, a dialogue was established with the people who considered themselves affected or requested another action. Each subject was resolved differently depending on the available means.

3 RESULTS

In the academic aspects, there was a notable improvement in the grades obtained at the end of the workshop compared to the previous ones. Students were evaluated through final reports. These reports showed an improvement in all the subjects from a quantitative and qualitative point of view.

According to the methodology, the participants gradually acquired and reinforced the contents and aptitudes while developing abilities and recovering their study habits. Students also improved soft skills such as oral and written communication, teamwork, leadership, personal initiative, analysis capacity, time management and problem-solving.

The experience was very motivating for the students and the population. It showed that the training and professionalisation of workers for all kinds of tasks of conservation, restoration and maintenance of the natural environment is essential. This kind of activity makes it possible to enhance the population's quality of life and the tourist offer, using the existing environmental values as a fundamental resource.

4 CONCLUSIONS

This activity improves working and employment conditions in inland areas and small towns.

The theoretical and practical aspects, student participation in the initial tasks, and decision-making are crucial.

In this way, it is committed to training that contributes to the preservation and improvement of environmental values, combined with economic aspects where tourism and improvement of employment have particular relevance.

Likewise, it contributes to social cohesion and preservation of traditional uses and customs of these inland populations, ultimately to their sustainable development.

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REFERENCES

- [1] Foro Ciudad. Datos obtenidos a partir del INE <https://www.foro-ciudad.com/valencia/sot-de-chera/habitantes.html>
- [2] SEPE Servicio Público de Empleo Guías de Aprendizaje evaluación de los certificados de profesionalidad para formadores Retrieved from URL <https://sepe.es/HomeSepe/Personas/formacion/certificados-profesionalidad/guias-aprendizaje/agraria.html>
- [3] N. Olmedo Torre, O. Farrerons Vidal (2017) "Modelos constructivistas de aprendizaje en programas de formación". Omnia Science Publisher, Barcelona.
- [4] Bruner, J. *The Process of Education* (1976 2nd Revised ed.) Harvard University Press, New York.
- [5] Good, T. y Brophy, J (1995). "Psicología Educativa Contemporánea". McGrawHill. México.