

TO WHICH EXTENT IS ESD INCLUDED IN THE TRAINING OF SECONDARY SCHOOL TEACHERS? RESULTS OF COLLABORATIVE ANALYSIS

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Addressing the inclusion of sustainability in the training of teachers is essential if we want to enable the mobilization of capacities necessary to face the existing planetary emergency.

The main goal of the present research is to analyse the effectiveness of collaborative work actions and of collective and individual evaluation of teaching guides and educational actions in relation to the inclusion of sustainability in the Master's Degree in Secondary Education Teaching.

Two subjects from Physics and Chemistry specialisation and other two from Biology and Geology specialisation have been analysed. Working groups have been created in order to identify the different sections of the teaching guides with possible links to ESD and Sustainability, highlighting those occasions in which the inclusion of sustainability can be encouraged. As part of this process, teachers from the Master's Degree will also make proposals of research topics related to ESD could be included in Master's Final Projects.

This study is part of a larger research project entitled "(Re) orienting teaching practice towards Sustainability: virtual and face-to-face environments for the training of Secondary Education teachers" with an ultimate goal of catalysing the process of curriculum change towards sustainability.

Keywords: sustainability, teacher training, secondary education.

INTRODUCTION

One of the most important global efforts to address the serious situation of poverty, violence, inequity and exhaustion of natural resources was undoubtedly the proclamation by the United Nations of the Decade of Education for Sustainable Development 2005-2014 (DESD) (Vilches et al., 2012). Almost three years later, however, it is necessary to continue working to integrate the principles, values, and practices to guarantee environmental integrity and economic viability for present and future generations.

Although education alone does not ensure a more sustainable future, we will not be able to reach that goal without Education for Sustainable Development (ESD). Education should consider the 17 goals proposed in the United Nations resolution focused on "Transforming our world: the 2030 Agenda for Sustainable Development". Within this context, goal number four: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" should especially be taken into account (UN, 2015). In this sense, initial and continued teacher training plays a crucial role as stated in the introduction of the UNESCO's document "Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability".

Focusing on University education in Spain, the Assembly of The Conference of Spanish University Rectors (CRUE) submitted the "Guidelines for curricular sustainability" to all Spanish universities in 2012.

The present communication focuses on the Master's Degree in Secondary Education Teaching of the University of Valencia (Spain), an official university master of professional profile that integrates the new professional competences for teachers demanded by the European Higher Education Area (EHEA). It

provides a qualification for teaching in both public and private schools, in the upper and lower secondary education cycles, vocational studies and language teaching and it is compulsory for teachers of Secondary Education in Spain. It is a one-year programme for university graduates of all degrees including 20 specialisations. This academic year 2016-2017 the master had 980 students.

Previous research focused on the evaluation of the trainer's training, by analysing the inclusion of sustainability in the Degrees in Preschool Education and Primary School Education as well as in the Master's Degree in Secondary Education Teaching (Ull, Piñero, Martínez-Agut, & Aznar-Minguet, 2014; Aznar-Minguet, Ull, Martínez-Agut, & Piñero, 2016).

The present study constitutes a further step and analyses the effect of various collaborative work actions and collective and individual analysis of teaching guides and educational actions in relation to the inclusion of sustainability in the Master's Degree in Secondary Education Teaching. The ultimate goal of the present project is the catalyst for the process of curriculum change towards sustainability.

It is part of a larger research project entitled "(Re) orienting teaching practice towards S: virtual and face-to-face environments for training Secondary Ed. teachers" (PRADO-EDU2015-66591-R (MINECO/FEDER)).

METHOD

The main steps of the project in this phase were:

1. Identify, in the teaching guides possible links to ESD and Sustainability where this is probably already being addressed.
2. Detect the occasions for the inclusion of sustainability so that in future seminars-workshops with teachers we can suggest ideas and proposals, after reflecting and taking care of all that they can do.
3. Propose research topics that can be realized in the Master's Final Project.

A representative sample of subjects were analysed and the formation of collaborative working groups for the improvement of the teaching practice oriented to the inclusion of the curricular sustainability of the specialties and subjects selected were created. In particular, two subjects of the common generic module and two subjects of the specific module of some specialties were selected. To this end, contact was made with the coordinators of the specialties with which workshops would later be carried out.

In this paper we focus in particular in the advances promoted in the field of two of the master's specialties. Two different subjects have been analysed from the specific module in each of them:

- **Physics and Chemistry specialisation.** Subjects: Learning and teaching physics and chemistry (16 credits) and Complements for disciplinary instruction of the speciality of physics and chemistry (6 credits).
- **Biology and Geology specialisation.** Subjects: Learning and teaching biology and geology (16 credits) and Complements for disciplinary instruction specialty biology and geology (6 credits).

RESULTS

A first analysis of the teaching guides highlights the inclusion of a specific competence addressing ESD: the specific competence 5 of the Master clearly supports and should encourage the inclusion of sustainability in the curriculum in order to contribute to its achievement:

CE5: Designing and developing learning spaces with special attention to equity, emotional and values education, equality of rights and opportunities between men and women, citizen training and respect for human rights to facilitate life in society, decision-making and building a sustainable future.

A more detailed analysis indicates that there also objectives, contents, resources, evaluation criteria, methodologies and indicators of achievement that approach sustainability in the different subjects when considering the analysis carried out by members of our team but also, and more important, when taking into account the results of the analysis carried out by different teachers of the master's degree in the context of the collaborative workshops organized for this purpose.

Several initiatives have been carried out to reinforce the actions and the visibility of the project. In particular, we have obtained support from the Vice-Principal for Academic Planning, Teaching Staff and Sustainability and from the Director of the Master. We are also developing a university innovation project ("Formation of interdisciplinary teaching teams for the incorporation of Sustainability in the master's degree in secondary education teacher"), which involves teachers in the tasks of the first phase of the project.

DISCUSSION AND CONCLUSIONS

We have found that the mere fact of analysing the current state of the teaching in the Master's Degree is a valuable way of arousing interest and implication in the task. We have received very positive responses from teachers; many of them already address issues related to sustainability and are willing to become more involved in ESD and to establish contact with other colleagues to drive these actions together.

We wish to highlight examples of good practices that we hope to make known in detail and in an extended way, some of them in direct relation with persistent socio-environmental problems. It is necessary to involve the citizens in the search and implementation of solutions to problems such as the degradation of ecosystems, the problems of climate change and its consequences, the growth of inequalities, extreme poverty, the absence of human rights and social injustice (Gil-Pérez et al., 2003)... hence the importance of reaching it through the training teachers. All these aspects have encouraged us to initiate this project.

We must insist that working from the sustainability perspective does not necessarily involve an excess of work for the teachers and should not be considered as a task to be added. It just needs a reorientation of their work and should be considered as a challenge that will be worthwhile carrying forward.

As a follow-up phase of the project, the proposals will be put in motion for the incorporation of Sustainability into teacher training and an assessment of the results will also be carried out.

REFERENCES

- Aznar-Mínguez, P., Ull, M. A., Martínez-Agut, M.P., & Piñero, A. (2016). The Evaluation of the Trainer's Training as a Catalyst for the Process of Curriculum Change towards Sustainability. EERA. European Educational Research Association.
- Gil- Pérez, D., Vilches, A., Edwards, M., Praia, J., Marques, L., & Oliveira, T. (2003). A proposal to enrich teachers' perception of the state of the world. First results. *Environmental Education Research*, 9(1), 67-90.
- Ull, M.A., Piñero, A., Martínez-Agut, M.P., & Aznar-Mínguez, P (2014) "Preconcepciones y actitudes del profesorado de Magisterio ante la incorporación en su docencia de competencias para la sostenibilidad" *Enseñanza de las Ciencias*. 32 (2): 91-112.
- UN (2015). Transforming our world: the 2030 Agenda for Sustainable Development. United Nations General Assembly. Seventieth session
- Vilches, A., Marques, L., Gil Pérez, D., & Praia, J. (2012). The Need for Contributions to the Decade of Education for a Sustainable Future: an Ethical Commitment. In Gonçalves, F., Pereira, R., Filho, W.L., & Azeteiro, U.M. (Eds.), *Contributions to the UN Decade of Education for Sustainable Development*. Frankfurt am Main: Peter Lang GmbH. Chapter 1, Pp. 11-32. (ISBN: 978-3-631-61347-4; ISSN: 1434-3819).