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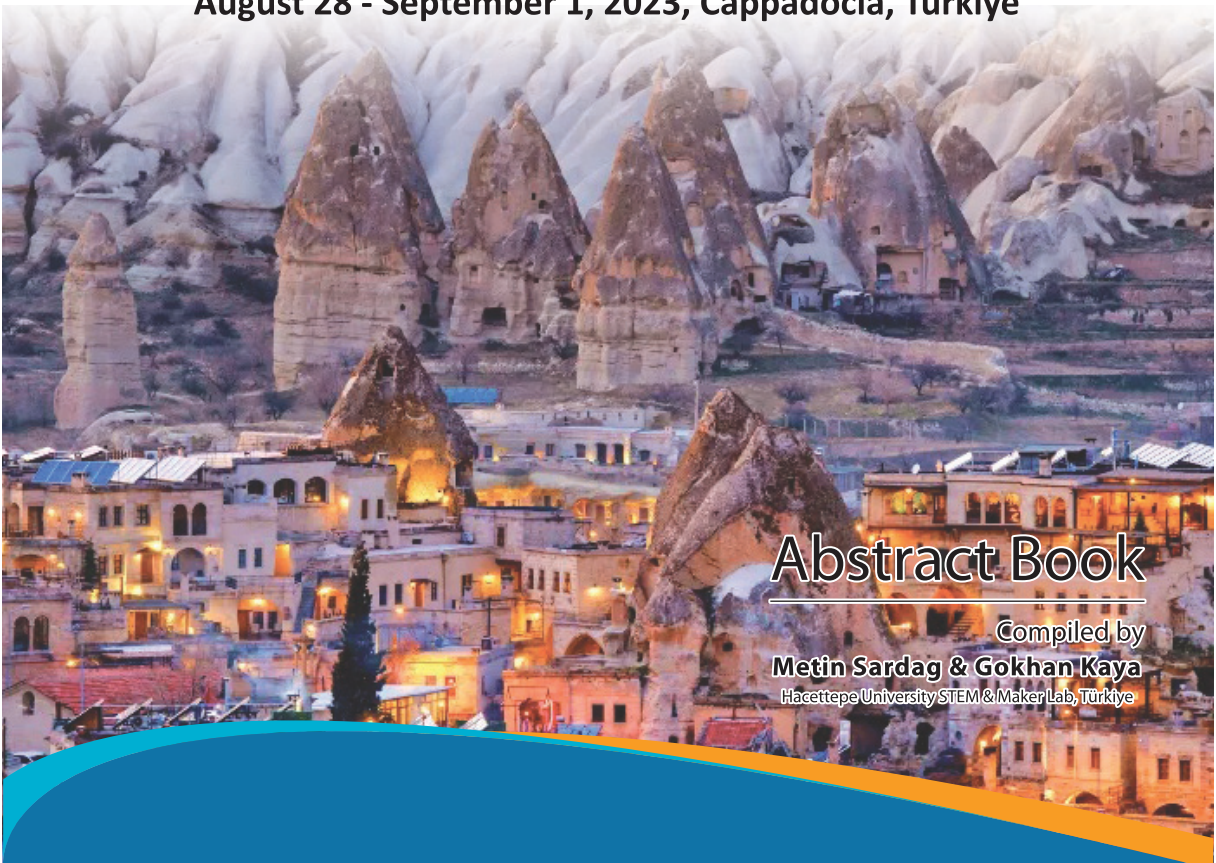EUROPEAN
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SERVICE-LEARNING TO PROMOTE FOOD WASTE REDUCTION IN PRIMARY SCHOOL EDUCATION: A CASE STUDY WITH TRAINEE TEACHERS

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The purpose of this paper is to present some results of a broad research whose main aim is to contribute to raising awareness among Primary Education teachers in initial training on the necessary reduction of Food Waste. To this end, students of the Degree in Primary School Education at the University of XXX have designed proposals based on teaching interventions for addressing this problem in an optional subject. These proposals have been implemented by in-service teachers with students in the 5th and 6th year of Primary School Education. The initial results show that the design and implementation of these proposals favour a significant knowledge about Food Waste on the part of the trainee teachers involved while helping, at the same time, to facilitate the incorporation of this topic in their future teaching practice.

Keywords: Food Waste, Service-Learning, Primary Education

INTRODUCTION

In the current context of the socio-environmental crisis, changes in food systems are considered to be among the key factors that will determine the extent to which the Sustainable Development Goals (SDGs) set by the United Nations in 2015 will be achieved. Food systems need to be put on a sustainable path to provide safe, affordable and healthy diets for the world's growing population. One evidence of the malfunctioning of food systems can be found in the significant levels of Food Waste. This is a global issue addressed in SDG 12 (responsible production and consumption), which sets the specific target 12.3 to "halve global per capita food waste at retail and consumer levels" by 2030 (UN, 2015).

The 2030 Agenda for Sustainable Development and the UN Decade of Action on Nutrition (2016-2025) are opportunities to speed up the necessary public awareness and investment in programmes and policies to improve food security and nutrition. In this regard, schools are an ideal platform for implementing effective food education interventions to improve nutrition and dietary behaviours (FAO, 2019; FAO et al., 2022). As highlighted by numerous institutions and research, Food Waste is a sign of inefficiency, unsustainability and inequality in current food systems and is a major problem that hinders sustainable development.

The COVID-19 pandemic has been a wake-up call on the need to transform and rebalance the way our food is produced and consumed (FAO, 2020). In this work, we focus on analysing the role that schools can play in addressing the problem of Food Waste in Primary School Education (6-12 years). The approach is based on the potential of formal education among pupils from an early age to tackle Food Waste and raise awareness regarding the need to change the way we consume food. In this sense, establishing healthy and sustainable eating habits represents an important challenge for cultural, political and economic reasons (FAO et al., 2022). This study aims to contribute to this achievement from an educational perspective.

In particular, the research carried out aims to answer the following general question: how can we encourage the involvement of trainee teachers in dealing with the problem of Food Waste in their future professional

practice? Considering previous research (Antón-Peset et al., 2021), the hypothesis that has guided this work was that designing, carrying out and evaluating teaching proposals favour the involvement of future Primary School Education teachers in the necessary reduction of Food Waste. The aim is to encourage future teachers while studying for a degree in Primary School Education to develop materials on this problem. These materials are put into practice and assessed by in-service teachers in different classrooms of a primary school through a Service-Learning strategy.

As this is a large piece of research, we will focus on a part of the work carried out. The oral presentation will show in more detail the intervention and some of the results obtained in this study.

METHOD

To promote among future teachers the development of teaching resources related to Food Waste, during the second term of the 2021-22 academic year and as part of the 6-ECTS credit optional subject "Teaching proposals for sciences" of the Degree in Primary School Education, we worked with a sample of 41 students. The methodology used for the design and implementation of the proposals developed was based on Service-Learning (SL) strategies. This methodology develops the teaching-learning process experientially, generating significant learning and strengthening the competences inherent to Education for Sustainable Development (ESD), in which our work is framed, as it enables the acquisition of competences during the implementation of curricular projects that respond to real needs, making learning available for service.

In particular, the proposals designed by the 3rd-year students of the Faculty of Teacher Training on Food Waste were implemented and evaluated by teachers from a public school in two 5th-year Primary School Education classrooms and two 6th-year classrooms, in the subject of Natural Sciences, with the participation of a total of 90 primary education students. As a final product of the intervention carried out in these courses, these students developed a campaign to raise awareness of the problem of Food Waste among the rest of the members of the school's community. This is a school with 468 Preschool and Primary School pupils, so this campaign aimed to raise awareness of the relevance of this problem and to contribute to reducing the levels of Food Waste in the school and in pupils' families' homes. Figure 1 illustrates the progressive implementation of the Service-Learning (SL) methodology developed.
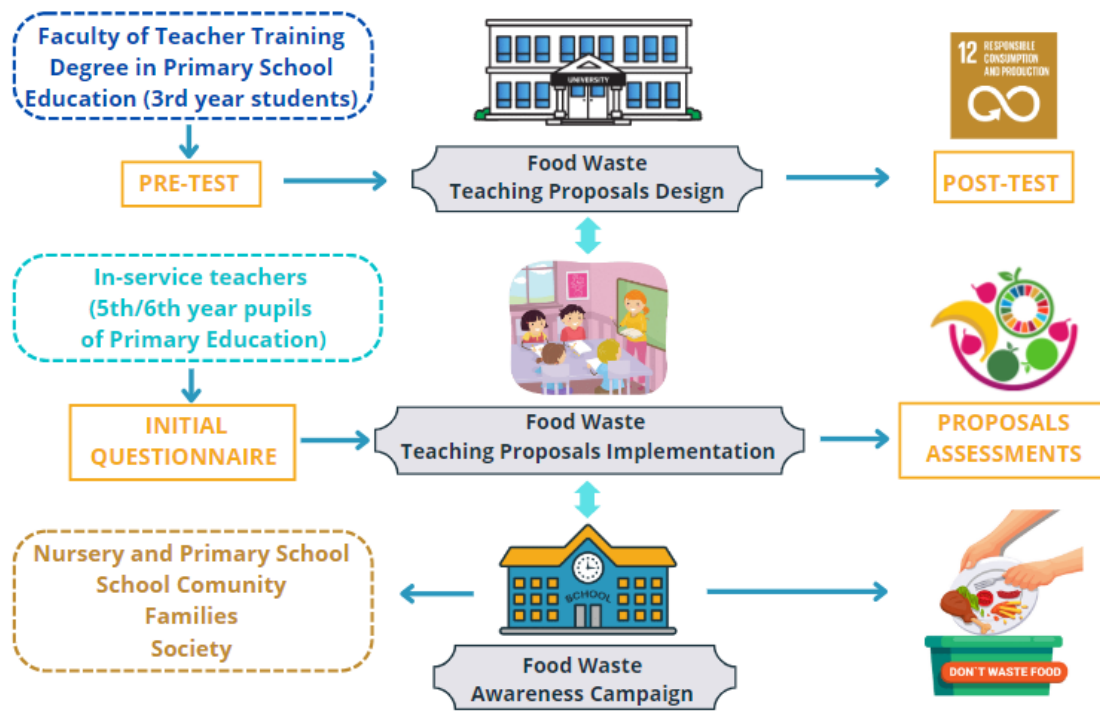
Figure 1. Summary diagram of the Service-Learning methodology developed. Infography prepared by the authors.

To enable trainee teachers to assess the teaching-learning process, each student was asked to rate (on a scale of 1 to 10) and comment on the extent to which the work carried out had helped them to better understand the socio-environmental problems associated with Food Waste and, above all, the need and possibility of moving towards responsible consumption, as well as to indicate whether the activities carried out would help them to work on this issue with Primary School students.

RESULTS

Some of the results obtained after the implementation and assessment of the teaching proposals by the 41 participants are shown in Table 1:

Table 1. Results of the assessment questionnaire carried out on the subject "Teaching proposals for sciences" on the Degree in Primary School Education (N = 28)

Ítem	Mean ± standard deviation
Rate from 1 to 10 the extent to which the work done in this subject has helped you to better understand the socio-environmental problems associated with Food Waste and, above all, the need and possibility of moving towards responsible consumption.	9.43 ± 0.92
Rate from 1 to 10 the interest in the activity: Elaboration of teaching proposals.	9.79 ± 0.63
Rate from 1 to 10 the interest in the activity: Evaluation of the teaching proposals of the different groups.	9.32 ± 1.33
Rate from 1 to 10 the interest in the activity: Implementation of teaching proposals with students in 5th and 6th grades of Primary Education.	9.57 ± 0.79
Rate from 1 to 10 if you consider that the activities carried out in this subject can help you to work on the problems associated with Food Waste and its relevance with Primary School students.	9.68 ± 0.61

These results show that the teaching proposals designed by trainee teachers and implemented by in-service teachers with Primary School pupils have been effective despite the limitations of the work and the difficulties that had to be overcome by COVID-19. The activities carried out on Food Waste have helped future teachers to better understand this socio-environmental problem, as well as the need to develop measures to contribute to its reduction.

DISCUSSION AND CONCLUSIONS

The set of results obtained, as will be shown in the oral presentation, supports our hypothesis that the design, implementation, and evaluation of teaching proposals promotes greater knowledge and involvement of future Primary Education teachers in the necessary reduction of Food Waste, contributing to their awareness of the seriousness of the situation and the implementation of measures that need to be taken.

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