

Proposals for the Implementation of Sustainable Development Goals to Transform Teacher Education in Higher Education

Marta Gómez-Gómez¹[\[http://orcid.org/0000-0003-3253-6822\]](http://orcid.org/0000-0003-3253-6822) y Desiré García-Lázaro²[\[https://orcid.org/0000-0002-7161-5665\]](https://orcid.org/0000-0002-7161-5665)

¹ King Juan Carlos University, Madrid, 28942, Spain

² King Juan Carlos University, Madrid, 28032, Spain

marta.gomez@urjc.es, desire.garcia@urjc.es

Abstract. The study is part of a broader research effort. In the first phase, the knowledge and awareness level regarding the Sustainable Development Goals (SDGs) were analyzed among students in Education programs at a public university in Madrid, Spain ($n=153$). The objective of this second phase is to propose different educational, innovative, and research-based initiatives to implement the SDGs in teacher education, based on the previously identified needs. The methodology used is quantitative, and the information was obtained through a validated *ad hoc* questionnaire by experts, with good reliability. The main results show that, despite the high level of awareness among this group of students, further training and practical initiatives are needed to develop sustainability competencies and the abilities to address the challenges posed by the 2030 Agenda. This justifies the proposals that will be carried out in the upcoming academic year as part of the next phase of the study, which will not only transform university education but also enhance the personal development of the students.

Keywords: Higher Education, Teacher Training, Social Responsibility, Sustainable Development

1 Introduction

The Conference of Rectors of Spanish Universities (2012) advocated for incorporating content on Social Responsibility and Sustainable Development into university degrees. All of this is done through cross-cutting competencies that, along with the Sustainable Development Goals (SDGs), guide us towards achieving a transformative vision for the future (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2015).

2 Theoretical Framework

2.1 Teacher Education and the SDGs

From the university perspective, actions that promote Educational Social Responsibility (ESR) should be encouraged, primarily through raising awareness and providing training to the university community (Gibbs et al., 2019). Additionally, there is an increasing number of studies highlighting the urgent need for Sustainable Education (Mallow et al., 2020), although there is some inequality in their development.

The commitment to ensuring the 17 SDGs should be a general objective across all disciplines, but it holds particular importance in the field of Education, as future educators will need to teach them.

Several studies have identified Education students who are aware of the reality around them (Guardeño Juan et al., 2021), but with certain deficiencies in sustainability education (Alventosa-Bleda et al., 2020).

3 Method

After analyzing the knowledge and perception of the participating students regarding the SDGs, the general objective of this study is to propose strategies for integrating them into Education programs based on the previously identified needs and demands.

The research methodology is quantitative, and the study consists of several phases (See Fig. 1).

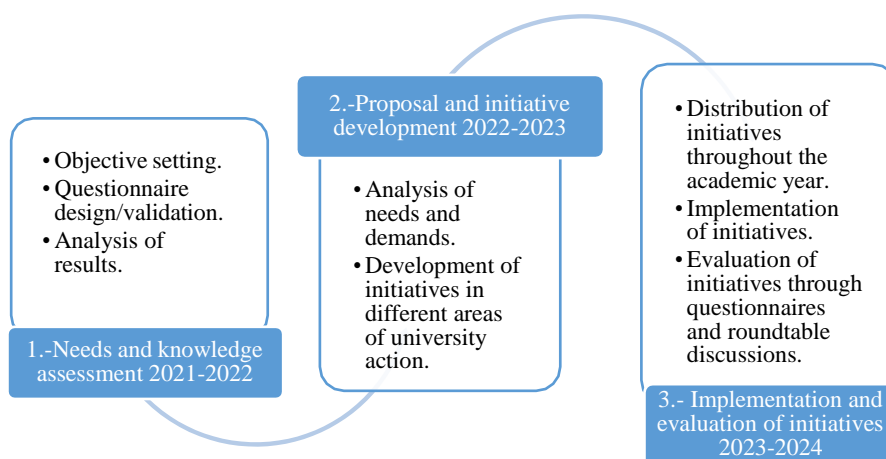


Fig. 1. Phases of the research. Own development.

In phase 1, 153 students from the Bachelor's degrees in Early Childhood and Primary Education and the Master's in Teacher Training for Secondary Education, Baccalaureate, Vocational Training, and Languages at King Juan Carlos University (Madrid) participated. Convenience sampling was used, and the study is endorsed by the Ethics Committee of the university (Internal registration number: 2004202212922). The ad hoc designed questionnaire has content validity and good reliability ($> .60$), calculated using Cronbach's Alpha coefficient (George & Mallery, 2003).

The analysis of quantitative and qualitative data was conducted using the statistical software DataViv (LeSphinx), through descriptive and inferential analysis employing Chi-square tests and Fisher's exact tests to determine the association between variables.

4 Results

The current phase 2 builds upon the results obtained in the previous phase, where: (1) significant relationships were detected between final knowledge of the SDGs and the course of study, (2) Higher Education was considered the most suitable stage for working on the SDGs, and (3) the representative words regarding the SDGs were: "Necessary" (15.6%), "Essential" (7.8%), "Future" (5.8%), "Responsibility" (4.5%), "Commitment" (3.9%), and the rest fell under the category of "Others".

4.1 Development of proposals to implement the SDGs in Education programs.

In this second phase, initiatives are proposed to implement the SDGs in these programs (See Table 1), which can also be applied to others. These initiatives are based on the intervention areas of the Spanish Network for Sustainable Development (Alba Hidalgo et al., 2020): teaching, research, institutional policy, and social leadership.

Tabla 1. Proposals to implement the SDGs.

PROPOSALS	INFORMATION COLLECTION TOOL	WHEN WOULD THEY BE USED
Review of Teaching Guides for Bachelor's and Master's courses.	Roundtable discussion among Coordinators of Education Degrees, Director of the Master's in Teacher Training, and Course Coordinators.	At the beginning (work proposal) and at the end of the course (monitoring/evaluation).
Include a task on the SDGs in the Practicum Report.	Interview of the Practicum Coordinator of the Bachelor's and Master's programs with the practicum tutors at the university, to assess the level of awareness/work on the SDGs by the students at the practicum site.	At the end of the course, after the evaluation of the Practicum Reports.
Academic Credit Recognition Activities.	Satisfaction/opinion questionnaires regarding the implementation of activities to work on the SDGs. Observation records on: level of involvement, knowledge about the topic, attitude, etc.	Questionnaires at the end of the activity. Observation records during the activities.
Research and/or innovation projects.	Focus groups involving different stakeholders who have participated in the project.	Upon completion of the Project.

Support from University Central Units and Services.	Reports from those Units and Services on the actions taken, level of compliance, results, unforeseen circumstances, improvement proposals...	At the end of the course.
---	---	---------------------------

Source: own elaboration.

5 Discussion

Once the opinions on the SDGs have been analyzed (Phase 1), different initiatives have been proposed to work on them in Education programs (Phase 2). Although the students' knowledge of the SDGs is not very high, there is some improvement, but university education can still be further reinforced (Alventosa-Bleda et al., 2020; Guardañó Juan et al., 2021). According to Mallow et al. (2020), we are in a proactive stage that shows an increasing level of social commitment.

García-Ceballos et al. (2021) consider teachers as agents of change and social transformation, but for this, it is essential to have more training and initiatives (such as the ones proposed) to develop sustainability competencies (Tarozzi & Mallon, 2019). Undoubtedly, Higher Education makes more calls to action to change Education and, therefore, the world (UNESCO, 2015).

6 Conclusions

The main conclusion of the study is that within Education programs, there is a perceived commitment to teach/learn in a more connected manner with the needs of the environment. The proposed initiatives should come from different areas (teaching, research, innovation, institution) and contribute to networking.

7 Limitations and Future Research

The main limitation of the study is that only students from a single university institution have participated. Therefore, it is proposed to expand the sample to other programs, other universities, and other stakeholders (faculty). Finally, phase 3 will be implemented, analyzing the perception of the different stakeholders involved. All these future lines of work/research contribute to raising awareness among the university community about an urgent need: living in a more sustainable world

References

Alba Hidalgo, D., Benayas del Álamo, J., & Blanco Portela, N. (2020). *Cómo evaluar los ODS en las universidades (REDS, 2020)*. <https://reds-sdsn.es/wp-content/uploads/2020/04/Gui%CC%81a-COMO-EVALUAR-ODS-2020-AAFF.pdf>

Alventosa-Bleda, E., Senent Sánchez, J. M., & Viana-Orta, M-I. (2020). Análisis comparado de la formación de maestros y maestras en España respecto al desarrollo de las metas de la Agenda 2030. En E. J. Díez Gutiérrez y J. R. Rodríguez Fernández

(Dirs.), *Educación para el Bien Común. Hacia una práctica crítica, inclusiva y comprometida socialmente* (pp. 317-325). Octaedro.

Conferencia de Rectores de las Universidades Españolas (2012). *Directrices para la introducción de la sostenibilidad en el currículum*. Grupo de Trabajo de Calidad Ambiental y Desarrollo Sostenible de la Conferencia de Rectores de las Universidades Españolas. Madrid. https://www.crue.org/wp-content/uploads/2020/02/Directrices_Sostenibilidad_Crue2012.pdf

García-Ceballos, S., Aso, B., Navarro-Neri, I., & Rivero, P. (2021). La sostenibilidad del patrimonio en la formación de los futuros docentes de Educación Primaria: compromiso y práctica futura. *Revista Interuniversitaria de Formación del Profesorado*, 96(35.3), 87-109. <https://doi.org/10.47553/rifop.v96i35.3.91437>

George, D., & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference. 11.0 Update* (4th ed.). Allyn & Bacon.

Gibbs, P., Jameson, J., & Elwick, A. (Eds.). (2019). *Values of the University in a Time of Uncertainty*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-15970-2>

Guardeño Juan, M., García Tort, E., & Calatayud Requena, L. (2021). Integración de los Objetivos de Desarrollo Sostenible (ODS) en la formación inicial del profesorado. En R. M^a Rabet Temsamani y C. Hervás Gómez (Coords.), *Innovación en la docencia e investigación de las Ciencias Sociales y de la Educación* (pp. 1223-1243). Dykinson.

Mallow, S., Toman, I., & van't Land, H. (Coords.) (2020). *Higher Education and the 2030 Agenda: Moving into the 'Decade of Action and Delivery for the SDGs'*. International Association of Universities. https://www.iau-aiu.net/IMG/pdf/iau_hesd_survey_report_final_jan2020.pdf

Tarozzi, M., & Mallon, B. (2019). Educating teachers towards global citizenship: A comparative study in four European countries. *London Review of Education*, 17(2), 112–125. <https://doi.org/10.18546/LRE.17.2.02>

United Nations Educational, Scientific and Cultural Organization (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. General Assembly. 1-35. <https://sdgs.un.org/203>