

ANALYSIS OF THE CONTRIBUTION THAT UNIVERSITY STUDENTS BELIEVE THEY CAN MAKE FROM THE DEVELOPMENT OF THEIR FUTURE PROFESSION TO THE ACHIEVEMENT OF THE SDGS

R. Oltra-Badenes, V. Guerola-Navarro, H. Gil-Gomez, D. Botella-Carrubi,
J.A. Gil-Gomez

Universitat Politècnica de València (SPAIN)

Abstract

The Sustainable Development Goals (SDGs) are seventeen interconnected global goals. These goals were designed to establish a plan that leads to a better and more sustainable future for all.

To achieve the SDGs, it is necessary that different groups, entities and organizations adopt attitudes and actions in accordance with them. And, of course, a deep and sincere involvement in the business environment is essential. This business environment constitutes a stakeholder in terms of the SDGs, since it is affected by them. But above all, because it is the group that can most influence its achievement. Within this collective, it is vitally important that professionals are aligned with the SDGs in the exercise of their respective professions.

But, are university students aware that the development of their future profession can help to achieve the goals of sustainable development?

This paper analyzes the opinion that students of different engineering degrees have regarding the contribution they believe they can make from the development of their future profession.

The study is carried out within the framework of an educational innovation and improvement project (PIME). The project is entitled "Design and implement teaching-learning activities for training in Sustainable Development Goals (SDGs) in an integrated way with engineering studies subjects (DIASDGES)", and is sponsored by the Polytechnic University of Valencia.

Keywords: SDG's, Sustainable Development Goals, University Students, student opinion, Engineering students.

1 INTRODUCTION

Sustainability is essential, which must be considered in any aspect of today's world. As we move forward as a society, we have to focus on having sustainable growth in order to ensure that equality and prosperity become visible and tangible in all parts of the world. Many of the challenges that human beings face, such as climate change, water scarcity, inequalities or hunger, can only be solved from a global perspective and promoting sustainable development: a commitment to social progress, environmental balance and economic growth.

As a new roadmap to achieve sustainable development, on September 25, 2015 the United Nations General Assembly unanimously approved the 2030 Agenda for Sustainable Development: an action plan in favour of people, the planet, prosperity and universal peace [1].

This action plan seeks to establish a "plan to achieve a better and more sustainable future for all". These common goals require the active involvement of people, companies, administrations and countries around the world.

The 2030 agenda revolves around five central axes: Planet, People, Prosperity, Peace, Partnership [2]. These five categories of SDG's are usually known as the "5 P's of the SDGs" [4]. These 5 categories, or 5P's are established to better understand and assess the 17 goals. The categories are called the 5 P's because of the first letter of the title that is used to name them. The five P's are: Poverty, Planet, Prosperity, Peace and Partnership [5], and each one of them represent the following content:

- **People:** SDG's 1 to 5 fall within the category "People". SDG1 and SDG2 seek to ensure the most basic livelihood. The first two objectives seek to ensure the most basic sustenance. SDG3 and SDG4 seek to achieve essential goals of health, well-being and education. Finally, SDG5 focuses

on achieving equal opportunities for all women, including work, food and education. Key to this goal is the empowerment of girls and women around the world.

- **Planet.** This group of SDGs, which includes SDG6, SDG12, SDG13, SDG14 and SDG15, focuses on protecting the planet from degradation, through sustainable consumption and production, the sustainable management of its natural resources and urgent action on climate change, so that it can support the needs of present and future generations. SDG6 focuses on managing water and sanitation for all to ensure access to clean and safe water for all people. Closely related to SDG6, SDG12 addresses appropriate and proportionate consumption and production to ensure sustainable development. SDG13 specifically channels all environmental protection policies and objectives, which must be based on climate action. SDG14 and SDG15 highlight that the protection of our ecosystem is crucial for the survival of our planet and reminds us that we must work to achieve these goals systematically and simultaneously, both in life underwater and on land.
- **Prosperity:** This category is made up of SDG7, SDG8, SDG9, SDG10 and SDG11, and seeks that human beings should enjoy prosperous lives and that economic, social and technological progress should occur in harmony with nature. SDG7 sets targets for the international community to mitigate the negative impact of overuse. In this way, the right and sustainable balance of energy use could be achieved because we cannot save the planet without addressing the problem of energy use. For their part, SDG8, SDG9, SDG10 and SDG 11 refer to problems involving fair and justice systems in both public and private communities and national entities.
- **Peace:** This category is made up solely of SDG 16 and shows how the international community must come together to promote and protect peace around the world, not through military action but through the establishment and use of strong justice institutions.
- **Partnership** Finally, this category focuses on mobilizing the necessary means to implement the 2030 Agenda through a Global Alliance for Sustainable Development. This alliance must be focused on the needs of the poorest and most vulnerable and with the participation of all countries, all actors and all people. The category is composed only of SDG17.

The relation between the 5 P's and the 17 SDG's can be seen in the Figure 1.



Figure 1. Relation between SDG's and the five P's. Based on [3]

Of course, the 17 SDGs can be categorized, or classified, using the 5 P's, but all of them (the 17) are integrated- They recognize that action in one area will affect results in other areas and that development must balance social, economic and environmental sustainability. Countries have committed to prioritizing the progress of those furthest behind to achieve the SDGs by 2030.

To achieve these objectives, it must be clear that the commitment must be faced by all the actors in society; People have to contribute as much as possible so that our day-to-day life shows an ever-greater commitment to sustainability. The creativity, knowledge, technology and financial resources of the whole society are necessary to achieve the SDGs in all contexts.

Thus, in order to achieve the SDGs, it is necessary for the different groups, entities and organizations to adopt attitudes and actions in accordance with them. And, of course, a deep and sincere involvement in the business environment is essential. This business environment constitutes a stakeholder group in terms of the SDGs, as it is affected by them. But, above all, because it is the group that can most influence its achievement. Within this group, it is of vital importance that professionals are aligned with the SDGs in the exercise of their respective professions.

But, are university students aware that the development of their future profession can help achieve the goals of sustainable development?

This work analyzes the opinion that students of different engineering careers have about the contribution they believe they can make to the achievement of the SDGs from the development of their future profession.

The study is carried out within the framework of an educational innovation and improvement project (PIME). The project is entitled "Design and Implement Teaching-Learning Activities for Training in Sustainable Development Goals (SDG) in an integrated way with the subjects of Engineering Studies" (DIASDGES) and is sponsored by the Polytechnic University of Valencia.

2 METHODOLOGY

The study has been carried out asking for the opinion of students from the Polytechnic University of Valencia (UPV). These students belong to different courses and degrees, and even from different campuses within the Polytechnic University of Valencia (Vera-Valencia Campus and Alcoy Campus). Specifically, information has been collected on the opinion of the students of subjects of different courses of the University Degrees and Master's Degrees that are shown in the following table:

Table 1. Bachelor's and Master's Degrees of the study

<i>Title</i>
Degree in Computer "Engineering"
Degree in "Digital Technology and Multimedia"
Degree in "Business Administration and Management"
Degree in "Organizational Engineering"
Degree in Computer Engineering"
Double Degree in "Telecommunication" and in "Mathematics"
Double Degree in "Business Administration and Management" and in "Computer Engineering"
Master's Degree in "Telecommunication Engineering"

The Bachelor's and Master's degrees have been selected in such a way that they can have a broad representation of different student profiles. In this way, career subjects have been selected that could be considered more technical (Telecommunications, Computer Science, etc.), but also of a more humanistic and social nature (Business Administration and Management). All this within the possibilities that exist in a University such as the Polytechnic University of Valencia.

In addition, from among these titles, subjects of different levels have been selected (initial, intermediate and final courses).

With all this, it is not intended to represent the entire university community, which would be much more complicated. But it does try in this way to obtain the broadest and most accurate first impression possible about the perception students have of the SDGs and the relationship they believe it has with their future work.

To collect the information, a survey based in the one presented in [3] was used.

In the survey, students are asked the following question: "Indicate to what degree, from 1 to 5, you believe that your future profession can contribute to the achievement of each of the following SDGs." And the 17 SDGs are presented. There are 5 answer options, from the value 1 (I do not believe at all that my profession can help achieve this goal) to value 5 (I believe that my profession can greatly help to achieve this goal)

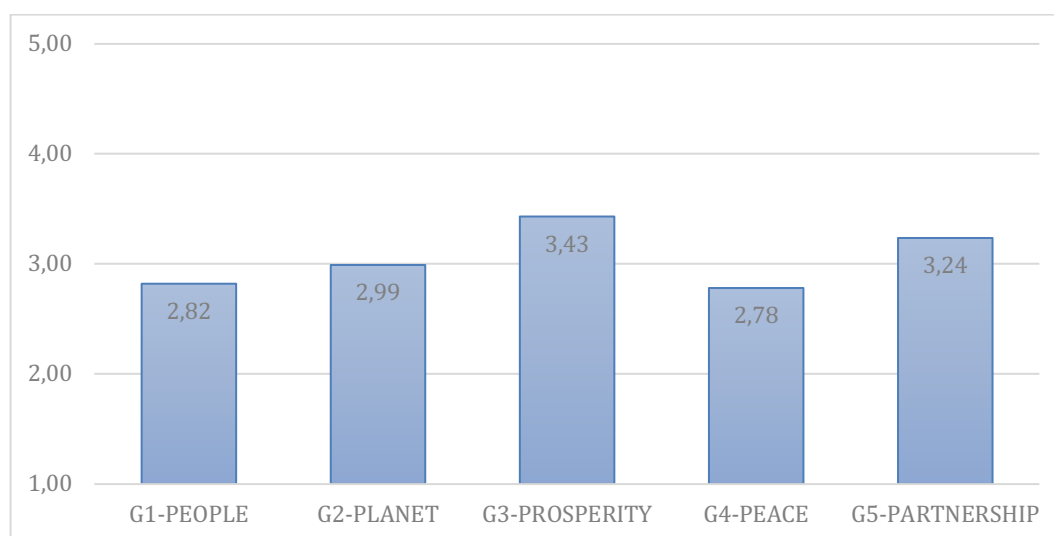
The survey was transmitted to the sample of students through a web form developed in Google Forms. The data has been grouped according to central axes of the 2030 Agenda, five categories of SDG's usually known as the "5 P's of the SDGs". Therefore, the 5 Groups are: G1-Poverty, G2-Planet, G3-Prosperity, G4-Peace and G-5 Partnership.

3 RESULTS

The results obtained are shown in the graph presented below in Table 2. This table shows the degree that the students believe that their future profession can contribute to achieving the Five Groups of SDGs.

As can be seen, the results have been grouped into 5 groups, in relation to each of the 5P's of the SDG's.

Table 2. Degree to which students believe that their future profession can contribute to achieving SDG (aggregated by the 5P's)



The results show that in 3 of the 5 basic dimensions of the 2030 Agenda, students believe that their future profession cannot contribute to achieving the SDGs that contain the related P. This is the case of "People", "Planet" and "Peace", all of them below the average value "3", although close to said value. Therefore, it can be said that the students believe that exercising their future profession cannot help to achieve the SDGs that belong to the Dimensions "People", "Planet" and "Peace" that are the following: SDG1, SDG2, SDG3, SDG4, SDG5, SDG6, SDG12, SDG13, SDG14, SDG15 and SDG 16.

Only in the dimensions of "Prosperity" and "Partnership", it is concluded that the students believe that their future profession can help in some way (rather little, because the value is up but very close to 3) to achieve the objectives of these "P's" or Dimensions of the Agenda 2030. Therefore, it can be said that the students believe that exercising their future profession can help to achieve the SDGs that belong to the groups "Prosperity" and "Partnership", that are the following: SDG7, SDG8, SDG9, SDG10, SDG11, SDG and SDG 17.

4 CONCLUSIONS

As a general conclusion of the study, and based on the results obtained, it can be affirmed at a global level that the students surveyed have a very low perception regarding the contribution that they can make from the exercise of their profession to the achievement of the SDGs and achievement of the 2030 Agenda.

Although it is true that in two of the P's a value is reached that indicates that they believe they can contribute to some extent, the value is very close, which indicates that they believe they can contribute, but very little, or almost nothing.

As for the other three Ps (People, Planet and Peace), the value is less than 3, which indicates that the students surveyed believe that they cannot contribute to achieving the objectives of these three dimensions. Although it can be said that the value obtained is lower but close to 3 in all cases.

This demonstrates that it is necessary to work not only on the general awareness of citizens in relation to the SDGs, but also that it is necessary to investigate, determine, show and teach them, in what way the exercise of their profession can contribute to achieving the SDGs, in a way that they can put it into practice in their future work.

Of course, this study has some obvious limitations, due to the number of students surveyed, and their profile. All the students are from the same specific university, and from a "Polytechnic" university profile. However, there are different degrees, some more technical and others more humanistic, which make the profile of the study's students varied. In any case, in order to have a more realistic and generic vision, it is considered more than opportune to continue with the study, and as future lines of work it is proposed to expand the sample, reaching other Universities and student profiles. In addition, it is also proposed to carry out a detailed analysis by profiles (degrees, ages, etc.) and by degrees.

With this, once the global situation is known, training actions and teaching-Learning Activities can be designed, so that students can develop their future professional activity in line with the scope of the SDGs.

ACKNOWLEDGEMENTS

This work has been developed within the research project called "Diseño e implementación de actividades de enseñanza-aprendizaje orientadas a la formación en ODS de forma integrada con asignaturas de estudios de ingeniería" (Ref.: /PIME/21-22/252) funded by the Vice-Rector's Office for Teaching Staff and Academic Organization at Universitat Politècnica de València.

REFERENCES

- [1] United Nations (UN). "Sustainable Development Goals". Retrieved from: <https://www.un.org/sustainabledevelopment/> , 2022
- [2] R. Oltra-Badenes, V. Guerola-Navarro, H. Gil-Gómez, J.A. Gil-Gómez. & D. Botella-Carrubi," The perception of the SDGs in University students: overview and survey design" *14th International Conference on Education and New Learning Technologies (EDULEARN 2022)*. Online. IATED, 2022.
- [3] United Nations (UN). "The 5Ps of the SDGs: People, Planet, Prosperity, Peace and Partnership". Retrieved from: <https://unsdg.un.org/es/latest/videos/5ps-sdgs-people-planet-prosperity-peace-and-partnership>. January 2023
- [4] Agencia Española de Cooperación Internacional para el Desarrollo (AECID). Retrieved from: <https://www.aecid.es/ES/Paginas/Sala%20de%20Prensa/ODS/01-ODS.aspx#:~:text=La%20agenda%202030%20gira%20entorno,Prosperity%2C%20Peace%2C%20Partnership%2D%20>. January 2023
- [5] Ministerio de Derechos Sociales y Agenda 2030. Estrategia de Desarrollo Sostenible 2030 Agenda 2030. Retrieved from: mdsocialesa2030.gob.es. January 2023