

EMPIRICAL TEST ON THE KNOWLEDGE THAT STUDENTS OF A FIRST-YEAR UNIVERSITY COURSE HAVE ABOUT THE SUSTAINABLE DEVELOPMENT GOALS (SDG)

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Abstract

The Sustainable Development Goals (SDGs) are part of an initiative promoted worldwide, by the United Nations Organization (UN), with the ultimate goal of achieving, with the participation of all citizens of the countries signatories of the agreement, turn our world into a sustainable environment that respects the environment, people and their circumstances.

In line with the "2030 Agenda" that tries to implement measures of all kinds in relation to the SDGs, Universities have tried to adopt awareness mechanisms aimed at students and teachers, based on the conviction that the personal and professional activity of young people is what will mark the level of achievement of these SDGs in the near future.

We present an empirical study, within the framework of an Educational Innovation and Improvement Project (PIME) of the Polytechnic University of Valencia (UPV), in which the initial knowledge has been evaluated, as well as the personal interest, that on the ODS have a group of first-year students of the Degree in Business Administration and Management (GADE). A first-year subject group of students has been chosen, thinking of that during the following courses they will acquire more training and awareness. A subject from GADE has been chosen because it is focused on training students on how to making strategic decisions in their professional activity.

It is observed as a result, as expected, that students who start their studies in a University Degree have heard about the SDGs, but they are not very clear about their role in achieving them, and they do not have a clear awareness of the link between their university academic training and their future role as key agents in the development of initiatives that make our world a sustainable environment that respects people and the environment.

Keywords: Business Administration and Management, Sustainable Development Goals, Initial empirical test, Assessment; Call to action.

1 INTRODUCTION

This study aims to obtain a picture of the state of knowledge and interest shown by the students of the subject "Introduction to Business Administration", a general subject in the first year of the Degree in Business Administration and Management (GADE), referring to the Sustainable Development Goals (SDG). This subject has been chosen because the study is linked to a Teaching Innovation and Improvement Project (PIME) of the Polytechnic University of Valencia (UPV) whose objective is to publicize the SDGs and improve the commitment of students and teachers with them; for this, it is interesting to have as a starting point a picture of the initial knowledge that can be compared with a picture of the final state after the four years of the university degree studies, thus interesting a first-year subject. Besides, this subject has been chosen because it is taught in a degree (GADE) aimed at training future professionals capable of making strategic business decisions, so the students are supposed to have interest on making and performing relevant decisions when having high business and social responsibilities.

First, the concept to which the SDGs refer is reviewed, as well as the basic details of the subject, and then the results of the research and the conclusions obtained are presented.

1.1 Sustainable Development Goals (SDG)

The Sustainable Development Goals (SDGs) are the objectives that the United Nations (UN) have included in the 2030 Agenda as pillars of their initiative to achieve, among all citizens and entities with responsibilities, an economically and socially sustainable world, respectful of the environment and with

the different sectors and spheres of society. In line with the global trend to seek initiatives that make all types of activity sustainable, respectful, and environmentally friendly, this study is directly related to the Sustainable Development Goals (SDG). The United Nations (UN) is promoting, in line with the trend of achieving a better life for planet Earth and for future generations that inhabit it, an initiative called Sustainable Development Goals (SDG) focusing on "17 Goals to Transform Our World" [1].

The Sustainable Development Goals are basically a call for action by all agents from all countries to promote prosperity while protecting the planet. It is recognized that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection. More important than ever, the goals provide a critical framework for COVID-19 recovery [2].

Among all the SDGs [11], since this study is developed inside the university environment, it is especially linked to the scope of "Goal 4 "Quality Education" [3]. What is intended with this objective is that the education offered at all educational levels is of quality, inclusive, and conducive to the sustainable development of society. More specifically, through this study linked to the previously mentioned PIME of the UPV, the aim is to improve the quality of education by adapting teaching to a format that does not lose sight of the SDGs as a pillar, in the conviction that this will help to train better professionals with a greater impact on society [4]. The interest and effort of all spheres and societies linked to technology are currently aligned with the search for a more sustainable environment, through procedures such as reverse logistics, which are already part of the curricular line at the University [5].

1.2 "Introduction to Business Administration" University subject

The subject where the study has been performed has been chosen thinking on a first-year subject from a University Degree focused on preparing students for making strategic decisions. More concretely the Subject related to this study is "Introduction to Business Administration", a core subject with a load of 6 credits, which is taught in the 1st year of the Degree in Business Administration and Management in the Universitat Politècnica de València (UPV). This study takes part in the campus that UPV has located in Alcoi, formerly Escuela Politècnica Superior de Alcoi (EPSA).

The objective of this subject is to situate the company in its environment from a systemic approach, serving as an introduction to three large business subsystems: management and control, commercial and operations. It should be noted the introductory nature of the subject that seeks to give a global vision that serve the student as a basis for further study in other subjects of the curriculum. The content is structured in six basic topics: Introduction and general concepts on Management, introduction to the Production and Marketing Subsystem, the functions of Forecasting and Planning, the Organization functions, the Address functions and the Control functions.

Following the competences development initiative from UPV, this subject is focused on the following competences:

- Ability to develop, analyze and interpret the processes of organization and management in the company.
- Ethical commitment at work
- Learn autonomously
- Work in diverse environments
- Work in multidisciplinary teams
- Communicate orally and in writing in their native language.
- Synthesize critically information from different sources.

In parallel with this core competencies, the student must develop several transversal competencies [6] that will lead the student to exploit in a more effective way the basic competences [7], and that will not only be critical for this subject but for all his / her personal and professional development:

- Understanding and integration
- (06) Teamwork and leadership
- (12) Planning and time management

Competences of both types are usually worked on during the theoretical and practical sessions, but teachers usually prioritize the work of specific competences to the detriment of transversal ones. As a result of this, in many subjects there is no curricular alignment since transversal competences are evaluated that have not been worked in class or that even having worked, no training activities have been provided to improve the level of mastery of these. That is why this study focuses on the level of mastery of transversal skills and how they work in the classroom to improve that level of competency, especially the ones related to the SDGs [8].

2 METHODOLOGY

This section details how the empirical study has been carried out on the knowledge and interest that the students of the subject "Introduction to Business Administration" of the Degree in Business Administration and Management at the UPV Alcoy campus have in the field of SDGs.

2.1 Choice of the population sample for the study.

This study aims to obtain a general and non-exhaustive view of the knowledge and interest that university students have about the SDGs, as a starting point to decide if it is worth investing efforts and resources in making them known and raising awareness of the relevance thereof.

Taking advantage of the area of influence of the research team that has carried out the study, made up of professors from the Polytechnic University of Valencia, it has been proposed to create a questionnaire based on constructs already tested and approved in prestigious publications, and to launch said questionnaire to a group of students enrolled in one of the subjects in which these teachers normally teach. The criteria to follow to choose this population group have been:

- Given that it is intended to implement training and awareness actions, if the need is detected, it has been decided to select the students of a first-year subject, thinking that during the following courses such training actions and initiatives can be implemented and awareness and assess progress at the end of their university stage.
- Similarly, and thinking that the future professionals with the greatest impact on society may be those who have decided to train in the field of strategic decision-making, it has been decided to select students from the Degree in Business Administration and Management (GADE).
- Select students from a highly industrialized geographical environment and with a great awareness of belonging to their territory, customs, and culture.

Taking all of this into account, it has been decided to launch the survey to GADE first-year students at the Alcoy campus (EPSA) of the UPV, more specifically to students of the subject "Introduction to Business Administration", without the aim is to extrapolate the conclusions to the entire university population, but with the aim of obtaining an exemplary picture of what the feelings of this type of student may be regarding the SDGs.

2.2 Questionnaire design, goal to obtain and effective sample population.

The present study has tried to take advantage of previous studies to build a questionnaire with constructs already validated and empirically tested, in order to assess the current state of knowledge and interest that university students of a carefully chosen subject have about the SDGs. With the interest of carrying out an empirical validation of the current state of interest and knowledge of the students about the SDGs, the method traditionally accepted in the scientific literature has been used to build a data collection questionnaire based on constructs previously tested in the literature. scientific [9].

Specifically, this study has to be about evaluating:

- What is the knowledge that these students have about the SDGs, through a series of generic and direct questions that challenge the student so that he himself responds to his global knowledge about the SDGs?
- What is the real knowledge that one has about particular aspects of the SDGs, through specific questions with directed answers?
- What is the interest that the students have on the subject of the SDGs and on their role in the development and achievement of the same?
- What do the students believe should be the role of the university within the initiatives underway to achieve the SDGs?

With the answers to these four groups of questions, it is intended to have a non-exhaustive but sufficient image of what can be a general perspective of the type of student to whom an Innovation and Initiative Improvement Project linked to the development of the SDGs.

The answers to the questions related to the opinions that students have to manifest about what they think or what they would like to, in this survey correspond to a Likert scale [10], from 1 to 5, in which the meaning of each answer is:

- 1 Totally agree
- 2 Agree
- 3 Medium term (neither agreement nor disagreement)
- 4 Disagree
- 5 Strongly disagree

The rest of the questions have one of these two kinds of format:

- Free short answer in case of detailing the personal opinion
- Multiple option answer in case of the need of selecting one of the proposed options.

Of the 39 students that the subject has, the interest of the study is to receive answers to the questionnaire from the students that attend with assiduity to theoretical and practical sessions. Giving that the number of usual attendants to class has been around 14 students on the average, the receipt of 11 answers to this questionnaire represents 79%. Therefore, the sample is considered sufficiently representative of the population.

3 RESULTS

After analyzing the answers to the questionnaire, there are several categories in which they can be summarized in order to present and discuss valuable results for the study.

Regarding how students feel about the future and the link between their university stage, their future profession, and the SDGs, they have been asked how they believe that their future profession (for which they are studying) can contribute to the achievement of each of the following SDGs. Using a Likert scale and summarizing the results of all the answers, the estimated value for each of the SDGs is presented in Figure 1.



Figure 1. Degree, in which the students believe that their future profession (for which they are studying) can contribute to the achievement of each of the SDGs.

The clearest result shows that “Work and economic growth is the most impactful SDG that the surveyed students think they may impact on after jumping in their professional live.

Secondly, asking the students about the knowledge they have about the SDGs, there are several questions directed to check about real personal knowledge about particular details of some SDGs, but the most valuable question for this study is the one where the students show how they personally feel about their real knowledge, being the results shown in Table 1.

Table 1. What students say to know about what the SDGs are.

Do you know what the SDGs are?	Percentage of students
I know perfectly well what they are and what they consist of	72,73%
I've heard of the SDGs, but I don't know what they are	18,18%
I do know what they are, but I don't know what they are.	9,09%

In this case and this population sample used for the study, most of the students say that they know perfectly well what SDGs are and what they consist of. Nevertheless just over 27% of the class say that they do not really have any knowledge about what SDGs are.

Thirdly, regarding to whom the students think that SDG Accounts are for, the results are shown in Table 2.

Table 2. Opinion of the students about to whom the SDG Accounts are only for.

SDG Accounts are only for:	Percentage of students
For everyone: companies (large and SMEs), citizens, public administrations, universities	81,82%
Honestly, I don't know	18,18%

It seems to be clear that most of the students think that SDG accountability is for everyone in the world.

On the fourth place, Table 3 shows how the students feel about their personal capability to contribute to the achievement of the SDGs.

Table 3. Perception of the students about their personal capability to contribute to the achievement of the SDGs.

Can we each contribute to the achievement of the SDGs?	Percentage of students
Yes, with small contributions like recycling.	90,91%
No, it is impossible to participate.	9,09%

Therefore, most of the students show confident about being able to reach real impact over the consecution of SDGs, even more if we think about real small things.

Finally, the results collected in the surveys about how the students feel about which should be the role of University regarding SDGs, using Likert scale, are those shown below in Table 4.

Table 4. How the students feel about which should be the role of University regarding SDGs.

	Strongly agree	Agree	Medium term	Disagree	Strongly disagree
I think it is important for university students to have extensive knowledge about the SDGs and Sustainability in general	36,36%	18,18%	36,36%	9,09%	
I would like the University to teach how my (future) profession could contribute to achieving the SDGs and creating a more sustainable world	9,09%	45,45%	18,18%	9,09%	18,18%
I believe that the SDGs, and sustainability in general, should be integrated as part of the themes of university subjects	27,27%	18,18%	27,27%	18,18%	9,09%

I believe that the University should have a comprehensive plan for the integration of the SDGs in training, similar to what is done with transversal competences.	18,18%	36,36%	18,18%	18,18%	9,09%
I believe that at the University we are already taught enough about Sustainability issues and the SDGs	9,09%	54,54%	9,09%	27,27%	

Table 4 shows a somewhat worrying view, given that only 54.54% show some interest in being taught things about the SDGs at the University, and only 9.09% show enthusiasm about it. This leaves just over 63% of students interested in the SDGs being part of what the University focuses on. Since the SDGs are a global initiative that concerns all social, political, educational, etc. and that the Universities (and the Polytechnic University of Valencia specifically and decisively), this result is worrying and disconcerting since it shows that the interest of the students is not aligned with the interest of social activism of the University in which they study their studies, nor with the social activism to which their country has committed with the signing of the 2030 Agenda agreement.

On the other hand, only slightly more than 45% of the students believe that the SDGs should be integrated into the subjects, in line with the previous comment and again showing little interest in the SDGs having some kind of impact on their university curricular baggage.

And again, along the same lines as the two previous comments, the direct result turns out to be that only about 54% of the students believe that in order to disseminate the SDGs among students and teachers, a training structure similar to the existing one could be assimilated to transversal competencies.

In addition to these multiple option answer questions, the students have been directly asked in a free text mode question about their personal opinion regarding SDGs, having received these answers (not all the surveyed students have filled the answer to this question:

- I think they are a good idea since they present objectives that can contribute to the sustainability of the planet.
- I find the proposals of the ODS interesting, but I sincerely believe that it is not important that they be fulfilled.
- "Personally, I do believe that the problems that the SDGs and Sustainability fight against are true and something must be done about it. But I also believe that not all the problems that we have already mentioned are as serious as they have told us, eg: global warming global, although it is true that temperatures have increased, it is not as serious a problem as they have said, and in fact, many of the measures that have been taken to ""stop global warming"" have given much worse results than global warming"
- We can all do our part to achieve greater sustainability.
- I think we should end fast fashion
- We can all contribute some action, no matter how small, to make a better world.
- I think it's great to meet them, just like we've been doing in class so far, but not everything can revolve around them, projects, work, etc. I mean, if I have a business idea and it seems affordable, I'll go for it no matter what cost me and if for this I have to prioritize my interests, I will do it. Business is business.

These personal answers seem to match perfectly the results shown in Table 4, in the sense that one of the students has shown in this answer that he/she is clearly thinking that SDGs should be out of University class, representing (with perhaps a small group of students) the small percentage that Table 4 shows as not interested in hearing about SDGs in University classes. The most of the students show that they are more or less interested on receiving inputs about SDGs.

4 CONCLUSIONS

The general conclusion obtained in this study is that the students surveyed have heard of the SDGs, and that they find it interesting to work on them and to reinforce the role that we all have in achieving them within the 2030 Agenda.

Most of these students have a fairly clear idea of what the SDGs are about, they believe that it is everyone's job to try to achieve them, and they are convinced that they themselves can contribute through small interventions in their daily lives.

With a future perspective, and beyond the day-to-day as citizens, most of the students surveyed think that the SDG that they can most influence with their future profession is "Work and economic growth".

From the direct observation of the students' responses, it can be deduced that only about half of them show a certain interest in the University investing resources in giving them training on what the SDGs are and in helping them to have a direct impact on their future profession. at the level of their achievement. It therefore seems that the level of student awareness of this challenge, to which we all have a personal and social responsibility if we want our environment to be sustainable and friendlier for us and for future generations, is really low and in any case less than the expected.

Regarding the link between University and SDGs, the results are not conclusive, since they do not show a clear outline of the majority interests of the students. It does seem clear that the students think that, with greater or lesser enthusiasm according to each one of them, the SDGs should be present at the University, although (and this answer is the majority) they already state that "at the University we are already taught enough about Sustainability issues and the SDGs". The lack of a clear trend in terms of the nuances of the interest shown by students in having university initiatives on the SDGs, together with the clear intention of students to participate in achieving the SDGs at a personal and professional level, leaves a open field to continue investigating and expanding the work sample in future studies that overcome the limitation that this sample contributes to the results and conclusions of the study.

With the limitations of this population sample and some answers that point to a high interest of the students for the SDGs but to certain doubts about the role of the University in this subject, a future line of research is opened that provides greater arguments on the impact that specific initiatives can constitute the pillar on which the University can base its contribution to achieving the SDGs.

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