Exploring Innovative Methods among Students about the Concept of Sustainability

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Abstract

The education of young people regarding the concept of sustainability, regardless of the field, has become an essential and topical subject, considering that the evolution of humanity is on an upward slope, not necessarily in the correct or appropriate sense, and our action has an important role. Informing young students about this subsequently contributes to the role that sustainability plays in the company's development strategy. The current paper proposes a study in which several teaching staff from a technical university in Romania and students are questioned about the desire or need to be more informed about sustainability. The study was conducted in two parts. In the first part, students and teaching staff were questioned through online questionnaires. In the second part, they had direct conversations with various company managers, who shared their expectations from employees regarding sustainability. The responses from the questionnaires and the discussions with the managers were kept confidential. Following the study, a platform was created for the students to access guidance and information about sustainability. They also have the opportunity to connect with managers of companies that are already sustainable or aspire to be in the future.

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Introduction

Sustainability education has been quite criticised in the past because it might give business school students a narrow perspective on profit. It is this narrow perspective that has been at the root of the problems we face today, such as crises in financial and amoral management, led to the realisation that businesses should not focus on maximising short-term profits (García-Feijoo et al., 2020) but instead emphasise responsible management to achieve long-term sustainability. Companies now employ more experts than ever to consider the sustainability mindset and skills of employees (Laasch & Conaway, 2014), and these experts continue to emphasise the need to increase the awareness of today's business graduates regarding sustainability practices. This will involve business education and redefine the meaning of successful businesspeople by cultivating students' sense of sustainable development. The role of students, particularly those from technical faculties, i.e., engineers, will be crucial in shaping the future of sustainability in the coming years, such as industry 4.0 (Kipper et al., 2021), the post-pandemic world (Anholon et al., 2020) and the need to progress towards sustainable development goals (Quelhas et al., 2019).

Global climate change is inflicting increasing damage on our planet to such an extent that Bouman et al. (2020. P.2) define it as "one of the most worrying issues mankind has ever faced". We need a broader awareness of the importance of sustainable development at the level of collective responsibility, involving both companies and citizens according to their roles. Since the personality of the individual develops through experiences and the sociocultural environment, this awareness should begin at a young age and continue to be one of the basic principles in adulthood (Evans et al., 2019; Otto et al., 2014; Soydan & Samur, 2017).In this research, the opinion of students and teaching staff from a Romanian university will be requested regarding the need to be informed about the concept of sustainability and how the level of knowledge of students can influence the development of a company, both as an impact on it but also as an influence over a longer period in terms of its development. For example, Martiskainen et al. (2020) conducted an in-depth analysis of the motivations, emotions, and actions of climate strikers who participated in the 2019 FFF global strike in six cities: Brighton and London (United Kingdom), Montreal (Canada), New Haven and New York (USA), and Stavanger (Norway) (Martiskainen et al., 2020). By interviewing 64 strikers, the researchers found different levels of knowledge about climate change and different daily behaviours to combat climate change, as well as different motivations for participating in climate strikes. Other researchers also add personal relationships with nature to these two factors, arguing that people's perception of nature influences their emotional connection with it. Healthy space can increase well-being and sustainable behaviours (Barbaro & Pickett, 2016; Cojocaru et al., 2014).

The purpose of this study is to develop the capacity of students and future employees for various companies and current teachers so that they become creators of sustainability for businesses and society in general. Their reaction and willingness to learn for a sustainable life are followed, and not only that, but we also try to identify the current level of knowledge and their opinion regarding the deepening of information in the field of sustainability; we want to identify the level at which the students are at this moment regarding a sustainable lifestyle and if there is a desire on their part for such a lifestyle. Several 30 students and 20 teaching staff will be questioned based on a questionnaire where they will receive questions about their current lifestyle, whether it is sustainable, their principles, and the need to understand the concept of sustainability better.

The students will be put in direct contact with managers of some companies to see exactly what they expect from the employees in terms of a sustainable business if the company they lead currently operates based on sustainability criteria or aims to do this soon.

Businesses increasingly use innovation contests as an open innovation tool to address sustainability questions. However, according to the open innovation literature, one of the main pitfalls of this approach can be the mismatch between solutions proposed by non-experts and companies' capabilities to implement such solutions. Sustainability-oriented innovation can help firms adopt sustainable practices by innovating products, processes and organisational initiatives to achieve sustainability goals (Klewitz & Hansen, 2014). People's social and environmental behaviour is the most effective way to combat climate change and protect the environment. Environmental and social behaviour means, on the one hand, adopting an environmentally oriented lifestyle that helps save natural resources from destruction and depends on ecological awareness; on the other hand, ecological awareness comes from ecological education and knowledge of the related problems that need to be dealt with. People's awareness of the environment is the basis of environmentally friendly everyday practices, and the change in ecological attitudes is closely related to knowledge and information.

As individuals form their value systems based on their experiences and culture, educational institutions must promote ways to conserve the natural and sociocultural environment, including the development of students' soft skills and competencies from middle school and high school to university. Talking with students, teachers and managers of different businesses, we find out how things are thought from their perspective either as information absorbers and creators of novelty (students), as information generators and living examples for their successors (teachers) but also as people who apply theory, encounter problems and look for solutions (managers).

Methodology

To explain how and why sustainability problems emerge and persist, sustainability scientists have focused on understanding ''the complex dynamics that arise from interactions between human and environmental systems'' (Clark, 2007, p. 1737). Hence, scholars propose user-centric approaches as essential to the design of sustainable solutions (Shapira et al., 2017), including the need to understand unsustainable behaviour to influence it successfully.

This study was divided into two stages, the first in which students and professors from a technical university in Romania were questioned and the second in which they were put face to face with managers of different companies to find out what their expectations are from the graduates who could be future employees in the companies they lead, regarding the concept of sustainability and the way they perceive the need to be part of a company that operates sustainably.

In the first part of the study, 30 students and 20 teaching staff were questioned, depending on their availability; they had a period of 30 days in which they could answer a set of 8 questions online where they expressed their regard about the concept of sustainability but also about their sustainable or less sustainable lifestyle. Potential interviewees were sent an email via the university's institutional address outlining the purpose of the study, the estimated duration of the interview (25 minutes) and a summary of the key points to be discussed. It sought to highlight the interviewees' understanding, awareness, knowledge and participation in the initiative under consideration.

Explaining in advance the main points to be covered at the time of the invitation and reinforcing them at the beginning of the interview can help the interviewer focus on the central questions. It is also important to give the interviewee time to search for sources and gather information to increase data reliability. The anonymity of the interviewed persons was preserved; the only personal information scored was gender and age. People were chosen randomly from the university, all belonging to technical faculties.

Results

Following the participation in the questionnaire-type interview of the 50 interviewees, 30 of whom were students and 20 teachers, aged between 20 and 49 years, the data were analysed. They were then presented in the form of diagrams highlighting each question with the corresponding answer. More than half of the participants in the study are women, 29 and 21 men (Table 1), and the average age is 29 years (Table 2).

Table 1

The situation of the interviewed persons by gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	29	56.9	58.0	58.0
Male	21	41.2	42.0	100.0
Total	50	98.0	100.0	
No answer	1	2.0		
Total	51	100.0		

Source: Authors' work

Table 2

Age	Frequency	Percent	Cumulative Percent
20-24	25	49,0	49,0
25-29	7	13,7	62,7
30-34	4	7,8	70,6
35-40	6	11,8	82,4
41-50	8	15,7	98,0
No answer	1	2,0	100,0
Total	51	100,0	

Source: Authors' work

Regarding the first question, in which the level at which the interviewed persons are in regards to sustainability was followed, 37 stated that they know this concept, and 13 gave a negative answer. Among them, 39 are interested in this concept, and 11 are not concerned about this topic. At the same time, 37 of the interviewees wanted to know more information about what the concept of sustainability entails, and 13 people were not interested. For this question, "Do you think it would be helpful to have as much information as possible about this concept? "37 people answered affirmatively, and the remaining 13 people answered negatively. More than half of the interviewees, 28 people, consider it important that the employer they work for has a sustainable company, and the others, 22 of them, are not influenced by this aspect.

To the question "Have you ever bought products from brands that have caused critical problems from a sustainable regard and lack responsible management?" most of them do not know if they have done this, 20 of them to be exact, 18 answered negatively and 12 claim that they bought products from brands that do not aim to be

sustainable. If they will continue to buy from the same brand in the future, knowing that it is not exactly a sustainable one, most of them said no, 24 of them, 15 people answered undecided, and 11 of the interviewees overlooked that the respective company does not is a sustainable one and continues to buy its products. For question

People were asked how useful it would be for them to introduce a course that deepens their knowledge about sustainability on a scale from 1 to 5. Among those surveyed, 20 people find it extremely beneficial, 13 find it very beneficial, 7 find it somewhat beneficial, and 1 person finds it not beneficial at all.

The data collected and then analysed highlighted the fact that most of the interviewees are concerned with what sustainability means and consider that any additional information in this direction can be useful. The lack of knowledge for some of them may be the cause of the results of their actions, but time is not lost, even for those who are not directly interested in the subject; the gradual accumulation of information over time can bring major changes both in their behaviour and in taking various decisions. Considering that most of the interviewees are concerned with what sustainability means and want to work for companies that have a sustainable business, the participants in this questionnaire were invited to participate in an online meeting attended by various managers of some companies who either already have a sustainable business, or wish to have one in the future or do not have and do not make a great effort in this regard for various reasons. Students were encouraged to look for corporations that have recently been involved in sustainability or responsible management issues. The students formed working teams and had to present their conclusions by providing short answers to questions in four parts: the introduction of the problem, the effect on society, the economy and the regional environment, brand values and recommendations. At the same time, the students were asked to explain why these companies should consider integrating the concept of sustainability and responsible management as part of their risk management. The purpose of this meeting is to interact with managers of business corporations to expand knowledge about their challenges in meeting social and environmental responsibilities and to explore effective common approaches to meet these challenges.

Following this research in which both students and teachers expressed their opinion about the concept of sustainability, combined with the meeting of managers from different corporations, it was proposed to hold online webinars in which those who wish, students or teachers, can have free access, based on the institutional email address of the university. In practice, it was proposed to establish a platform where specialised trainers can support these webinars. If the number of those who want it is large, we will discuss the introduction of a course in which students can participate and receive various notions about sustainability.

Discussion

The need to introduce a course or some webinars where students can receive as much information as possible about what sustainability means and how a sustainable corporation should be is of interest for students as well as for society, being a very common and current topic. The basic information that students can accumulate during their studies could later be the future of various companies because responsible management needs employees who understand this concept and who come up with solutions for its maintenance and evolution. The interaction between the current students and the corporate managers proved to be more than useful because the students learned directly from the potential employers their opinion about a sustainable business and the problems they encountered or may encounter again because their company is sustainable. Therefore, they can analyse in advance

the situation in the companies so that when they become their employees, they can better manage the situation or find initial solutions either for the present or the future.

Some managers proposed a collaboration between the companies they lead and the university, which would help students financially as well as professionally. They were willing to offer them a kind of paid internship in which the students would look for solutions for their various management problems, and the best and most applicable ideas would be rewarded. The students were receptive and delighted with this proposal, so it follows that the project will take shape and be applied.

The program's design allows for continuous updates of these topics and the creation of new ones to meet the demands of industry and society, widen the range of information reached, and keep pace with technological and knowledge evolution. The purpose of this project is to prepare engineers not only for today's pressing sustainability challenges but also for those that will appear in the future.

These learning programs for students can propose new certifications focused on competencies demanded by companies and society, such as in the context of Covid-19 (Anholon et al., 2020), industry 4.0 (Kipper et al., 2021), and sustainable development (Quelhas et al., 2019). The focus of this institutional project is the development of citizenship.

The scope of this project also includes actions aimed at integrating students, professors, managers, and society, as well as reposting improvements to activities, communication, curriculum, teaching-learning methods, and events. Developing a sense of belonging to the academic community and providing inclusive education.

Conclusion

In this paper, several teaching staff and students from a technical university in Romania were questioned regarding their need and desire to learn more about what sustainability means. At the same time, it was followed by whether the latter had a sustainable lifestyle or if they wanted this in the future. This research contributes to the development of students, but also of teaching staff; in both parts, there is the need for more knowledge but also the desire to evolve in this direction. Being a current topic, the concept of sustainability is quite debated and involves various challenges both in companies and in everyday life. Carrying out this study, first of all, I found out what level of knowledge the students have and how important it would be for them if they had access to periodic training in this direction through courses and webinars. Secondly, the fact that they made direct contact with the managers of various companies helped them to become aware of the real need to find solutions, but not of any kind, solutions that fit the requirements of the company of which they could be part at some point. The opportunity that some managers have offered to students, the possibility that they can participate in a paid internship, is welcomed and accepted with interest by them, being a first step in initiating their career in this direction. The subject addressed can be folded into various fields, each having its challenges and obviously related solutions; therefore, no attempt was made to limit the fields of activity, with the students being part of a technical university but from different fields of study.

Our findings are consistent with Bouman in that most of the students surveyed were aware of the dangerous effects of climate change and the need to take personal action to combat the destruction of the planet. Social and environmental behaviour by individuals is the most effective means of combating climate change and protecting the environment. Social, environmental behaviour means, on the one hand, adopting an environmentally oriented lifestyle that helps to save natural resources from destruction and depends on ecological awareness; on the other hand,

ecological awareness comes from ecological education and knowledge about the related problems to deal with.

Following the implementation of these webinars and the participation in the internship, we want to continue the research and find out the opinions of the students regarding their evolution following these challenges. We want to find out how this periodically received information influenced them, what questions or curiosities it created and to what extent it helped them. Regarding the internship, we want to find out from the students how they felt being part of the company, even for a short time, if this experience has an impact on their future career and if so, to what extent and what effect it has on their personal lives. At the same time, we want to find out if there have been changes in their lives and what they are or if they want to make changes in the future.

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