

THE IMPORTANCE OF INTEGRATION OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN TERTIARY EDUCATION - AN EXAMPLE OF GOOD PRACTICE IN TEACHING ESP

Rubić, I.¹

¹University of Applied Sciences Velika Gorica,
ivana.rubic@vvg.hr

Abstract:

Tertiary education is a system which enables students to acquire knowledge and skills in certain disciplines but should also contribute to their overall development. In today's changing world, there is an evident need for professionals who can contribute to sustainable solutions in their specific fields. This paper presents and discusses the integration of the sustainability program into the teaching of English for specific purposes (ESP) to students attending undergraduate engineering programs at the University of Applied Sciences Velika Gorica as well as the commonalities between ESP and Education for Sustainable Development (ESD) teaching approaches. From a pedagogical perspective, both foreign language education and ESD promote a student-oriented approach to learning and the development of student agency. This paper aims to emphasize that uniting the values and principles of ESD with proactive and creative foreign language learning helps promote and guide quality educational practices.

Keywords: *Education for Sustainable Development (ESD); tertiary education; English for specific purposes (ESP); student-oriented learning*

1. INTRODUCTION

It has been emphasized that holistic and transformational education is required with a view to educate and empower learners to contribute to sustainable development (Sterling, 2001; UNESCO, 2020). ESD involves the application of educational principles, methods, and practices to promote sustainable development goals and values. ESD is interdisciplinary and transdisciplinary, meaning that it does not belong to or is limited to one discipline, rather, all disciplines should respond and contribute to ESD individually and/or collectively (Leicht et al., 2018).

This paper argues that foreign language education and more specifically English for Specific Purposes (ESP) offer a unique and valuable platform for implementing ESD by providing students with opportunities for engagement with real-world language use and issues, collaborative learning, and facilitating inquiry, agency and students' intercultural understanding. A proactive approach to learning ESP, as presented in this paper, integrates sustainability principles while providing opportunities for authentic language use and production. Such an approach also enhances students' sense of competence and personal

agency, empowering them to become informed, responsible, and proactive agents of change capable of contributing to sustainable solutions within their fields. Integrating sustainability education into various university courses and programs is essential (Leicht et al., 2018). This paper explores how ESP and ESD pedagogies are conceptually related due to their emphasis on student-centred learning. Both present and demand competence-based, action-oriented, and value-driven educational frameworks, addressing the need for dynamic, strategies that engage students in meaningful and proactive learning.

The UNESCO framework for ESD has been organized around the four main pillars of education for the 21st century presented in the Delors Report (Delors, 1998); *learning to know, learning to do, learning to live together, and learning to be*. In this paper, the four pillars are discussed in the context of ESD and ESP and the underlying pedagogy that should be employed to achieve the competences they promote. Also, examples of practical application of these principles in teaching English for Specific Purposes to engineering students are presented in an effort to promote sustainable development.

2. Education for Sustainable Development (ESD)

The 2030 Agenda for Sustainable Development (UN, 2015) distinctly describes and emphasizes the urgency to embed the principles of Education for Sustainable Development (ESD) into all levels of education. ESD is a broad concept that commonly refers to holistic and transformational education and innovative pedagogy needed to equip individuals with "knowledge, skills, values, and attitudes that empower learners to contribute to sustainable development" (Leicht et al., 2018:7). ESD is a process of long-term changes, and it requires a change in the educational paradigm towards student-centred, action-oriented and interdisciplinary education in order to advance implementation of the sustainable development principles across a variety of educational contexts and disciplines.

Furthermore, due to continuous changes in the market, industry and society as a whole, there is an evident need for quality engineers trained for the challenges of sustainable development (Glavič, 2006). Higher education institutions strive to contribute to sustainability by embedding sustainable development values and practices into their curricula, teaching methods, research activities, staff development, and institutional management. These efforts aim to educate professionals inclined and competent to produce and apply new knowledge and technologies that advance sustainable development. Also, the implementation of ESD in all existing educational programs and courses is encouraged (Glavič, 2006; Leicht, 2018).

3. Teaching English for Specific Purposes (ESP)

Foreign language education at the tertiary level occupies a significant place in enhancing the language skills and communicative competence of students which they need to advance, communicate and collaborate in real-world professional contexts.

Decades of research on effective language teaching and learning have led to placing the emphasis on how students learn (Hutchinson & Lancaster, 1986) and established learner-centred teaching, authentic communication, and engaging students' opinions, experiences and identities as fundamental aspects of foreign language instruction (Ushioda, 2011).

ESP programs assist students in developing communication abilities that are customized to their particular fields or disciplines in the target language. By focusing on the practical relevance of language learning instruction, enhancing communication skills and learning specific terminology ESP programs empower learners to contribute to their fields, and foster intercultural understanding and lifelong learning necessary in today's interconnected and changing world.

The implementation of the sustainability program presented in this paper is rooted in ecolinguistics, a field of research within applied linguistics which encompasses various applications of the concept of ecology within linguistics. According to Alwin Fill (2001), the range of research in ecolinguistics is very wide and research areas range from investigating the role of language in resolving ecological and environmental problems, teaching ecoliteracy, language acquisition, and preserving language diversity to studies in bilingualism and multilingualism. Ecolinguistics views language as a dynamic holistic system and the process of learning a foreign language as a dynamic, non-mechanical, unpredictable process that should take place both in and outside the classroom. This approach gives a quality framework for creative, initiative, and interactive teaching that should develop learners' competences to understand and effectively participate in different varieties of a language and discourses they encounter in the real world. Creating synergy between ESD and ESP through interdisciplinary learning and engagement with real-world issues helps students find the value and relevance in learning and sparks their interest.

4. Implementation of the sustainability program into teaching of ESP

On a practical level, the paper deals with the implementation of the sustainability program in teaching ESP to students attending three engineering programs; Computer science, Motor vehicles and Logistics management. The teaching approach, assignments and learning activities were planned for topics related to students' field of study in a way that they facilitate innovative and critical thinking, interaction, collaboration and the use of English in practical, real-world contexts. Special attention was paid to making language learning engaging and relevant, enhancing student abilities to communicate in various professional contexts and promoting environmental sustainability.

The four pillars of education from the Delors Report (Delors, 1998) are addressed because they highlight key competences needed to enable students to address sustainability challenges and the role of educators in providing effective learning experiences.

4.1. Learning to know

The first pillar of education is *learning to know* emphasizes the importance of key life competence "learning to learn" which is commonly defined as the ability to organize and persist in one's own learning. *Learning to know* focuses on how a person learns and the potential role of educators and learners (Leicht et al., 2018). However, according to Sterling (2001), most learning that occurs in classrooms is functional or informational and orientated towards socialization and vocational goals and takes no account of the challenge of sustainability. It is especially important that teachers are educated regarding their knowledge of sustainability issues and how they communicate it to students (Pataki, 2005) so that they can transfer this type of teaching, thinking and attitudes to their classrooms. The ways

through which it can be incorporated in foreign language learning is by applying more proactive and student-centred strategies and learning activities that promote curiosity, inquiry, and problem-solving and thus build the capacity and desire in learners to be independent agents in learning and their future lives.

The principle *learning to know* was integrated in the ESP courses for engineering students by integrating relevant sustainability concepts and topics, using authentic materials and modern technology and by engaging students in problem-based and inquiry-based learning. It was made sure that topics and materials chosen for language practice are innovative and facilitate communication between students and proactive learning.

There has been an increasing demand for ESP courses due to the use of English as a lingua franca in a variety of fields and disciplines and technical skills need to be complemented with the ability of professionals to communicate their thoughts and ideas in multicultural situations and enter international professional fields. Thus, ESP pedagogy has long moved from traditional methods and passive learning to engaging students in authentic, real-world language use and developing student agency.

Student agency is developed and sustained through meaningful interactions, active learning and offering opportunities to students to shape their own learning (Larsen-Freeman et al., 2021). The paper further elaborates on the implementation of the sustainability program, which is rooted in student-centred learning principles, providing a more detailed explanation later in the text.

4.2. Learning to do

Learning to do, the second key pillar of education refers to developing students' ability to act creatively on one's environment (Leicht et al., 2018). The effective implementation of *learning to do* in education, entails the development of practical abilities in order to apply theoretical knowledge to practical situations. Given that *learning to do* focuses on preparing students for practical, professional, and personal success and growth a key component of this pillar is active learning which is essential to unlocking the full students' potential.

Integration of sustainability program in the professional English course included learning about sustainable practices such as sustainable design principles, sustainable utilization of resources, making industry-specific services more eco-friendly, energy-efficient technologies and using eco-friendly materials. Computer science students were engaged in conversation and discussions about ways to design and implement more sustainable solutions in the field of information technology. After a discussion about the topic students were presented with real-world sustainability issues and they were engaged in problem-based and action-oriented learning. Problem-based learning (PBL) is a student-centred approach that focuses on using complex real-world problems and promotes how to think innovatively and critically to explore possible solutions. Such an approach drives meaningful active learning and engagement and enables a deeper understanding of important knowledge. Also, it is an effective strategy for applying *learning to do* in foreign language education. By working on projects and solving problems, students apply theoretical knowledge to practical situations and simultaneously improve language skills and sustainability knowledge.

To enhance the learning experience freehand drawing activity was conducted in class. Spontaneous drawing of how students see sustainability and an eco-friendly approach to their

particular field was used to give students an opportunity to express their ideas visually and develop creativity, imagination, thinking and observational skills. In the next step, computer science students were assigned a collaborative project which involved the investigation of eco-friendly approaches and initiatives in the field of information technology and the design of more sustainable IT solutions. The project involved the design of a new eco-friendly technology. Students needed to think up a name and description of their new eco-friendly product, a name for their company and finally create a brochure to advertise it.

Motor vehicles students did a project on 'greening' the automotive sector and the concept of 'greenwashing' to develop both sustainability awareness and critical thinking. After the inquiry about the industry-specific issues, they did presentations on a range of topics about environment-friendly automobiles including topics about the benefits of electric or hybrid vehicles, recyclable and eco-friendly materials, and different technologies that can optimize energy use. Also, they needed to find and present examples of greenwashing in the auto industry.

Logistics students were engaged in inquiry-based learning as their assignment was first to investigate the benefits and challenges of *green logistics*, and later discuss international trends and challenges in eco-logistics including practices to reduce carbon emissions, sustainable suppliers and packaging, and more. Finally, logistics students were given a task to provide a graphical and verbal presentation of their work and results and advocate for their opinions and ideas. Inquiry-based learning requires students to develop research skills, collect and gather, evaluate, critically analyze and synthesize relevant information from different sources. Students, at the same time, practiced their language skills and engaged deeply with the specific content. Such practices encourage curiosity and active learning through deeper engagement with both the target language and the subject matter. Language learning is a complex process that involves taking risks, learning from mistakes and provided feedback.

For that reason, fostering a growth mindset is of great importance (Larsen-Freeman et al., 2021). It refers to one's understanding that abilities and talent are not fixed but can be developed through investing time and effort.

Learning to do competence requires a pedagogical approach that engages students in the learning process through activities such as projects, experiments, and problem-solving tasks which push students to exert effort in resolving problems and engage in purposeful learning, interactions, and cooperation. When students learn through direct engagement with real-world problems they are likely to encounter in their specific fields and careers, they develop language skills and at the same time focus on sustainable practices.

4.3. Learning to live together

The pillar *learning to live together* refers to developing the competences required to participate and cooperate with other people in various activities in today's interconnected world. It focuses on promoting, peace, collaboration, mutual respect and understanding among individuals from diverse backgrounds. In FLL shaping linguistic expression requires an adequate selection of vocabulary, grammar, pronunciation, and style. By nurturing a culture of collaboration, empathy, and mutual respect, teachers empower students to advocate for their own needs and interests in the classroom and respect those of others, take ownership of their learning, and develop a sense of personal agency.

This principle *learning to live together* can be implemented in foreign language learning by encouraging authentic expression in language use while promoting intercultural competence, collaboration and engagement with individuals from different backgrounds, and culturally diverse materials. Intercultural competence describes the ability to effectively and appropriately interact and engage with people from diverse cultural backgrounds and assumes great importance in foreign language education given that exposure to different cultures and ways of life is essential to foreign language learning.

As part of the sustainability program integrated into engineering professional English courses, students first watched videos and listened to recordings of people from the business world with various cultural or linguistic backgrounds talking about their social customs and cultural norms, describing their jobs and industry-specific topics. They were given time to observe, get accustomed to and discuss the use of idioms and humour, different patterns and English accents among non-native English speakers and give comments in a respectful way.

One of the objectives was to identify and discuss perceived stereotypes, initiate reflection on that topic, and promote focusing on similarities rather than differences i.e. acceptance rather than distancing from what is different and unfamiliar. Given that intercultural competence fosters respect, a higher level of intercultural competence may lead to more frequent engagement in communication with individuals from different cultural backgrounds (Lee, 2020). The teacher acts as a bridge between differences but students should be given space for their own research and in that respect, students were assigned to find additional information about other cultures in the business world and look for similarities to practice thinking beyond stereotypes and in the process create new knowledge and skills.

Further, students engaged in role-play activities to encourage interactions with peers from different backgrounds and personalities. Thus, students learned about cultural differences to get used to cooperation and interactions in more inclusive environments which may occur in general and professional settings and get ideas about how intercultural competence can be useful in real life.

Finally, to encourage active engagement and practice articulating arguments students played devil's advocate which helps gain insights into different perspectives, and ways of thinking. Namely, the development of communication skills related to specific fields or domains is of particular importance in ESP programs. Arguing against one's own or a commonly accepted viewpoint stimulates thinking critically and deeply about a certain topic and helps learners practice various language skills. To effectively implement the devil's advocate activity, it is important to choose relevant topics, provide guidelines on how to construct arguments and possibly useful vocabulary lists in order to stimulate discussion and engagement. According to Derwing et al. (2002) building intercultural competence may reduce stereotypes regarding different accents and varieties of English language. All in all, teaching students how to use language appropriately in different cultural contexts helps them develop interpersonal skills, cultural competence, and a deeper understanding of language as a social tool for communicating one's opinions, ideas, and knowledge. Developing competences implied by the pillar *learning to live together* may assist future professionals in dealing effectively with cross-cultural interactions and expanding career prospects in the globalized world.

4.4. Learning to be

The fourth pillar *learning to be*, is regarded as a progression which proceeds from the previous three pillars and emphasizes the importance of holistic development of individuals, not only knowledge and skills but personal characteristics, attitudes, and values (Leicht, 2018). *Learning to be* is about fostering the overall growth of the individual, with the aim of reinforcing students' confidence, attitudes, capabilities and a drive for growth and lifelong development. Also, it is about all-around development which enables individuals to think and act independently, responsibly, critically and creatively and recognize their role in creating a more sustainable world.

The abovementioned suggests that, from a pedagogical perspective, the conceptual parallels between the main principles of teaching ESP and ESD emerge from the perspective that the effectiveness of learning depends greatly on how and why students learn not only on what they learn. ESP pedagogy and ESD both cultivate a mindset of growth and lifelong learning, and a propensity for learning that extends beyond the classroom into various aspects of students' professional and personal lives.

5. Discussion

This paper focuses on the integration of sustainability education in the teaching of ESP and the connections between them regarding the pedagogic approaches they use and demand. The ways and benefits of such an approach to language learning are presented regarding the development of foreign language proficiency and the competences for living and working sustainably.

Both language education and ESD have contributed to shifting away from the perception of students as passive recipients of knowledge and consumers of education and have instead focused on empowering students to become informed, responsible, active agents who are driven and capable of contributing to their own learning and sustainable development.

The connections between ESP pedagogy and Education for Sustainable Development (ESD) are significant because both approaches prioritize educating independent, responsible, adaptable, creative and ethical individuals.

The connections are particularly evident in the emphasis on student action and production versus reproduction and the focus on real-world situations and issues. Action-oriented approaches extend beyond passive informational learning and foster the development of student agency, autonomy, and creative energy in thinking about innovative sustainable solutions related to chosen fields and careers.

Further, in both ESD and ESP, the use of authentic materials makes the learning process more meaningful, dynamic and engaging for students and helps prepare students for real-world situations and challenges. Also, providing opportunities for exposure to real language as it is genuinely used in students' chosen fields is a priority in ESP. Meaningful learning experiences that resonate with student aspirations and values, boost their engagement and inspire their curiosity, and critical and innovative thinking.

In addition, common to both approaches is that they are goal-oriented and focus on the practical application of competences and skills in real-world contexts. English for Specific Purposes (ESP) is inherently goal-oriented because it focuses on meeting the specific needs

and interests of learners. When they are aligned with the topics and activities used in the classroom it makes learning more relevant and valuable for students

Education for Sustainable Development (ESD) is also goal-oriented with a clear focus on fostering a sense of responsibility towards the environment, and the development of competences for sustainable development. Further, the connections between ESP and ESD are evident in their shared emphasis on interdisciplinary learning. Moreover, interdisciplinary connections and the integration of specific content related to a particular field or discipline are inherent parts of ESP. Also, this interdisciplinary perspective is crucial for a holistic understanding of local and global sustainability issues.

6. CONCLUSION

Concerning numerous sustainability challenges, there is a significant need for professionals who are equipped to address sustainability issues in their fields and contribute to sustainable solutions. The paper presents the implementation of the sustainability program as an example of the integration of ESD in the teaching of ESP. It is suggested that foreign language education can serve as a unique and valuable platform for implementing ESD by incorporating real-world sustainability topics and principles related to the particular field of study, facilitating inquiry, problem-solving, and cooperation among students. Combining sustainability principles and meaningful and engaging language learning encourages students to actively participate and adapt their language production to different contexts and at the same time challenges them to be creative and critical in thinking about sustainable solutions.

Regarding commonalities and shared principles, it is important to note that both ESD and ESP promote the importance of student agency rather than passive acceptance of knowledge as well as practical skills development, growth mindset, and empowering students to become independent learners, thinkers, and doers.

ESP and ESD may seem to belong to different educational areas. However, a closer examination shows significant connections and commonalities between the student-centred learning pedagogies they use and demand. This paper aims to guide future educational research and practices by pointing out that incorporation of sustainability education into foreign language education promotes sustainability and environmental responsibility, and offers opportunities for creative and meaningful language learning.

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