Process of Integrating Contents of the "Sustainable Consumer Behaviour" Module within the Sustaincomp Curriculum into the Study Programme

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ABSTRACT*: Consumer education for sustainable development is critical to achieving the 17 Sustainable Development Goals (SDGs) set by UNESCO, as it influences the behaviour, choices and values of individuals and entire communities. Consumer education encourages consumers to avoid overconsumption, to buy long-lasting products and reduce waste. The Sustainable Consumer Behaviour (SCB) educational module has been developed as part of the curriculum within the Sustainable Competences in Higher Education (SustainComp) project. The aim of the module is to raise awareness of the environmental consequences of consumer choices and behaviour and to train student teachers to teach sustainable topics using modern educational approaches. Sustainability is a problem that practically the whole world has to face if we wish to ensure a secure future for people on Earth. This can also be achieved through teaching that incorporates the principles of active learning methods, collaboration and the international exchange of experiences and student opinions into the process. In the pilot study, the usefulness of selected activities and professional materials developed for the Sustainable Consumer Behaviour module was tested using digital technology. The activities were carried out in collaboration between students and teachers from two partner universities. The results showed that despite certain technological and methodological challenges, the module's activities can be effectively used to foster creativity, collaboration and communication between international students involved in sustainable consumption education*

KEYWORDS: *Sustainable Education, Consumer Education, Sustainable Consumer Behaviour, Project-Based Learning, Student Teachers*

1. Introduction

Changes in people's lifestyles have a significant impact on the environment. As the number of people on Earth increases and especially as their consumption increases, humans have a significant impact on the natural resources we consume and on the environment in which we live. An increase in consumption has a harmful impact on the environment (UN, 2015). It is important that people become aware of this and steer their behaviour towards sustainable consumption (SC). This is crucial for their quality of life and the protection of the environment. The importance of responsible consumption and production is highlighted in Sustainable Development Goal (SDG) 12, one of the 17 goals on the agenda that focus on achieving the SDGs through educational programmes. Goal 4 is of great importance in the design of educational programmes and quality education (UN, 2015).

Education plays an essential role in environmental policy and practice, which in turn has a significant impact on environmental protection and the use of natural resources (Van Poeck and Vandenabeele, 2012). Burbules et al. (2020) point out that changes in education for sustainable development necessarily have to include the following aspects: 1) our educational goals; 2) educational ecologies and learning contexts; 3) the learning processes; 4) the teaching processes; and 5) educational governance and policy.

Sustainable education (SE) can also make an important contribution to raising people's awareness of the importance of SC. Higher education institutions have to make a meaningful contribution to sustainability and sustainable development (Tilbury, 2011).
Al-Nuaimi and Al-Ghamdi (2022) report that the impact of education on consumption is positive and significant in shaping sustainable consumption behaviour and is an important factor for sustainable consumer behaviour in the future.

The SustainComp project has developed a curriculum for teaching sustainable development that comprises four content modules:
1. Sustainable Diets
2. Natural Resources, Social Inequality and Sustainability
3. Sustainable Health and
4. Sustainable Consumer Behaviour.

In the Sustainable Consumer Behaviour module, students learn how their behaviour and attitudes can impact the environment and the achievement of the SDGs, particularly of Goal 12 that emphasises the importance of responsible consumption and production.

The key to developing sustainable habits is for individuals to first become aware of their bad

habits and try to change them. However, this is a major challenge because people need a lot of time to change their daily habits. Through education, consumers can develop and form sustainable habits. It is important to integrate modern aspects of education, including the use of different teaching methods, into the implementation of sustainable education. Bedir (2019) emphasises the importance of education in the twenty-first century, as it provides students with the skills they can acquire and apply to succeed in a globalised world and as it is based on the development of critical thinking, communication, collaboration and creativity (4Cs). The study shows that the 4Cs significantly influence student satisfaction and suggests that programme designers should pay attention to all four components of education. Supena et al. (2021) suggest that the 4Cs learning model requires students to learn through discussion and dialogue, it encourages critical and creative thinking, and enhances students' academic mastery. Limna et al. (2022) showed that communication has the greatest impact on student achievement, followed by collaboration and creativity.

Education in the 21st century is changing and evolving. Digital technology enables teachers to create a challenging educational environment, also in combination with problem-based learning (PBL). Through the use of digital technology, students can easily access information, communicate with each other and present their findings. The use of digital technology in PBL thus enables a learner-centred approach, collaborative learning, critical learning and it supports real-life application (Green, 2018). It is also important to integrate project-based learning (PrBL) into modern sustainable education. The challenge of sustainable development extends to the entire planet, so it makes sense that students should have the opportunity to work with students from different countries and social backgrounds. In this way, digital technology can be helpful in combination with different teaching methods.

PrBL is classified as a teaching method in which the commitment of the participants plays a decisive role. Through the process of project work, individuals acquire new knowledge and skills (Kaya, Şenyuva, Işık & Bodur, 2014). PrBL facilitates experiential learning and enables participants to actively engage and critically reflect on their experiences. This method enables them to apply and integrate theoretical concepts and knowledge in real-life situations (Willard & Duffrin, 2003). Participation in projects promotes motivation and stimulates the development of skills, self-confidence and collaboration among students, which in turn improves their social skills (Ciftci, 2015; Papastergiou, 2005; Thompson & Beak, 2007; Hanif, Wijaya & Winarno, 2019). Başbaya and Ateş (2009) state that students often feel joy and satisfaction when they complete projects and achieve their goals. In addition to this, various authors emphasize the importance of developing critical thinking, decision-making skills, information-seeking skills and self-confidence in learners (Ciftci, 2015; Kaya, Şenyuva, Işık & Bodur, 2014; Yoon, Jang, Park & Jun, 2023).

The Sustainable Consumer Education module has been developed to meet the requirements of modern education. The developers of the module have included a variety of pedagogical approaches in the curricula and recommendations to foster the attitudes of students and encourage them to develop critical thinking and sustainable behaviour in their daily lives. The fundamental goal of the module is to change students' behaviour towards protecting the environment and natural resources and creating a sustainable society.

2. Module of Sustainable Consumer Behaviour in the SustainComp curriculum

The Sustainable Consumer Behaviour module, developed as part of the SustainComp project, aims to promote sustainable consumer behaviour by encouraging conscious and informed consumer choices. The module has 2.5 ECTS, underlining its importance in providing students with the knowledge and skills they need to promote sustainability in their consumption habits. This module is directly related to the SDGs, especially those related to responsible consumption and production (SDG Goal 12) and climate action (SDG Goal 13). By raising students' awareness of their personal impact on sustainability, the module aims to promote behaviours that contribute to a more sustainable future. The module emphasizes the importance of consumption choices for sustainable development and guides students to expand their theoretical knowledge while reflecting on their own behaviour and choices. As part of the module, students will learn about and reflect on current issues in the following four thematic areas using PrBL and PBL in combination with the use of modern digital technology.

Topic 1 – Strategies for saving energy and lowering costs in households
Strategies to save energy and reduce costs in households are essential for promoting sustainable consumption, as they help to reduce the pressure on natural resources and greenhouse gas emissions. Raising awareness of energy efficiency motivates consumers to use energy more consciously in their everyday lives. By adopting these sustainability-oriented practices, consumers can significantly reduce their environmental footprint. Ultimately, such responsible actions help to protect the planet for future generations.

Topic 2 – Why is important to extend the lifetime of waste textiles?
Textile industry and the environment – raising public awareness of the impact of the textile industry on pollution and promoting reflection on the sustainable use of textiles while developing the creative reuse of textiles using different textile techniques

Topic 3 – Can a responsible textile consumer protect our planet?

Promoting conscious consumer behaviour by reading labels (raw material composition) and raising awareness of the link between the composition of raw materials and the carbon footprint and thus the impact of consumer behaviour, i.e. purchasing decisions, on the environment.

Topic 4 – From linear to circular economy

The transition from a linear to a circular economy replaces the traditional "take-make-dispose" model with one that prioritizes waste reduction, reuse of resources and the extension of product life cycles. This sustainable approach to resource management emphasizes the importance of reducing the environmental impact and promoting long-term ecological balance. The content of the lessons is designed in a way that enables students to connect theoretical knowledge with practical activities and thus gain insight into the importance of individual behaviour in the circular economy process, e.g. to become aware of their own role in the process of purchasing textile products responsibly (the aspect of raw material composition in connection with the carbon footprint of textile products) as well as the recycling of textile materials within the framework of the circular economy concept.

As part of the SustainComp project, an online classroom in Moodle was developed. Students have the option to access the learning materials for all four topics in the Moodle online classroom e-environment (Figure 1). The structure of the module enables the students to learn independently, to upgrade their knowledge based on additional literature and to self-check their knowledge. At the same time, Moodle also enables teachers who would like to include the discussed topics in their teaching, to plan the teaching with prepared materials and digital activities that Moodle enables, for example the collaborative learning mind map (Figure 1). The design of materials and activities in Moodle pursues the goals of sustainable development and enables the connection of students from different faculties – international cooperation in obtaining information and dealing with the topic from different angles. The activities thus enable students from different countries and cultures to exchange opinions and experiences, to learn about the diversity of problem-solving approaches and thereby overcome possible stereotypical beliefs and expand the range of ideas for solving problems related to sustainable development.

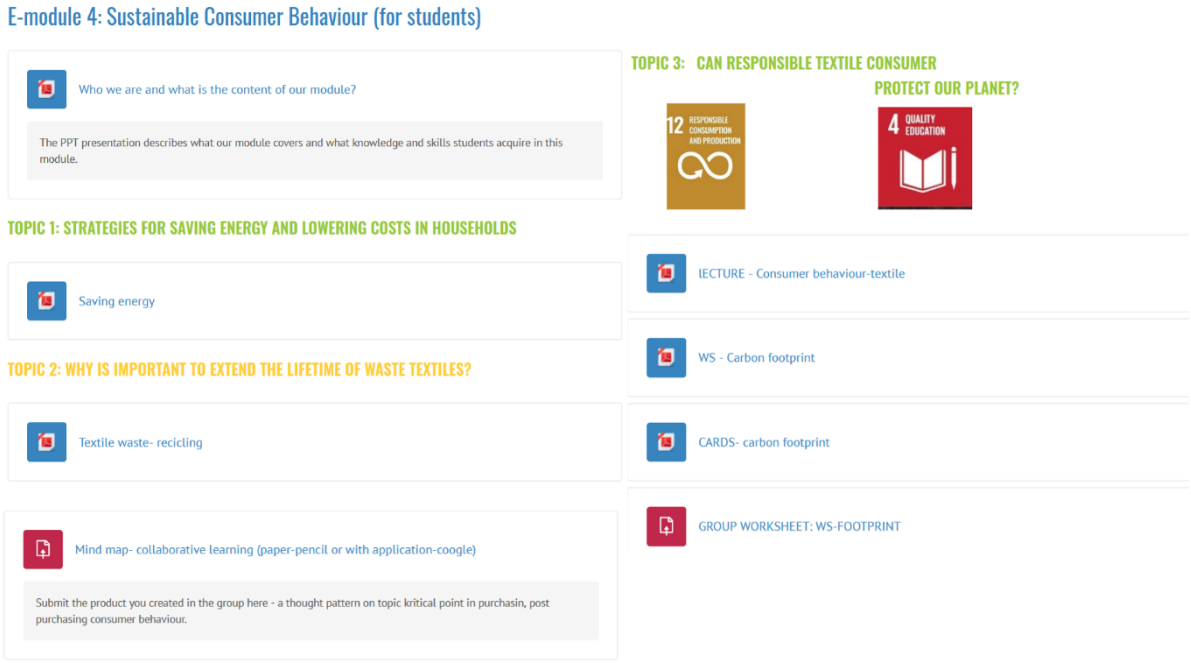

Figure 1: Part of activities in the Sustainable Consumer Behaviour module in Moodle

2.1 Full-scale pilot of the Sustainable Consumer Behaviour module

The content of the Sustainable Consumer Behaviour module was made available to UCL University Collage students in Denmark as an online programme, as part of a preliminary study. The module was integrated into the first-year English course for student teachers at UCL in Denmark and conducted in collaboration with UCL teachers. The comprehensive pilot study of the module took place during weeks 47 and 48 in November and December 2023. The module was delivered by teachers from the Faculty of Education at the University of Ljubljana via the Zoom online platform, with teachers from UCL present in person to help with the implementation.

The online lectures covered four key topics related to sustainability and responsible consumption while encouraging students to think critically in the context of sustainability. Topic 1 – focused on energy consumption, which was closely linked to Topic 2. Topic 2 – aimed to raise general awareness of the impact of the textile industry on pollution and to promote the sustainable use of textiles, including the creative reuse of textiles through various techniques. Topic 3 – emphasized the promotion of conscious consumer behaviour by reading labels (especially regarding the raw material composition) and raising awareness of the connection between raw material composition, carbon footprint and the impact that purchasing decisions have on the environment. Finally, Topic 4 – explored the transition from a linear to a circular economy and focused on replacing the traditional "take-make-dispose" model with one that prioritizes waste reduction, resource reuse and the extension of product lifecycles.

Various didactic approaches were used, as well as a series of activities in which the students actively participated. One of these activities involved the creation of posters, particularly for Topic 3, that focused on promoting conscious consumer behaviour through understanding the composition of raw materials and their environmental impact. In addition to this, a series of activities were designed for classroom purposes and uploaded to the Moodle online classroom to allow students an easy access to the materials in the e-environment.
A case study was used for data collection, focusing on the sustainability perspective and the didactic materials related to sustainable consumer behaviour that the students identified as important during the project work. The study also aimed to verify the potential of digital technology in teaching in education for sustainable development.

2.2 Multiplier event of the SustainComp project

As part of the SustainComp project multiplier event, the traditional Erasmus student breakfast was held at the Faculty of Education of the University of Ljubljana (UL), together with a virtual presentation for students at UCL in Denmark. The project took place in November 2023. Erasmus students at the Faculty of Education at UL, who were studying Nutrition and Nutrition Education, planned, prepared and presented traditional breakfasts from their countries through PrBL.

The focus of the project in the multiplier event was on traditional dishes, sustainable consumption, intercultural learning and mutual cooperation, with a particular emphasis on energy savings, sustainable consumer choices in relation to the consumption of goods and the promotion of environmentally conscious consumers. These topics coincide with one of the main objectives of the SustainComp project.
In implementing the project, the basic phases of PrBL were taken into account (Spalek, 2014), as described below.

First stage of PrBL: Initiative
The Erasmus students were introduced to PrBL as part of the Nutrition and Nutrition Education course. In this context, they planned, prepared and presented traditional breakfasts from their respective countries. The aim of the project was to learn about the dietary diversity of various cultures and to promote sustainable consumption.

Second stage of PrBL: Outline of a project
In the second phase of the PrBL, objectives were defined and the feasibility of the project was assessed. The main objective was to learn about the dietary diversity of different cultures, specifically the 12 countries from which the Erasmus students came (Czech Republic, Finland, Germany, Greece, Indonesia, Italy, Japan, Netherlands, Poland, Slovakia, Spain and Thailand), and to promote sustainable consumption. Based on the objectives set, the individual project

tasks were planned within twelve working groups (WG), to which the students were assigned according to their country of origin. As part of the feasibility of the project, the following needs were identified, to be taken into account by the students when planning the work: 1) selection and preparation of traditional dishes; 2) design and preparation of PowerPoint presentations; 3) organization and implementation of the entire event.

Third stage of PrBL: Planning the project implementation

In line with these objectives, individual project tasks were planned in twelve working groups, into which the students were divided. This process took place from October to mid-November 2023. The students formulated a work plan for the implementation, in which the tasks for each working group were precisely defined. The members of each group then distributed these tasks among themselves and determined their chronological order (see Table 1).

Table 1: Timetable for the planned project tasks in the individual working groups

Tasks	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Selection of traditional dishes for each country						
Final selection of traditional dishes for each country according to the possibilities of preparation and the availability of ingredients						
Preparation of a list of ingredients for each country						
Preparation of presentations of traditional dishes and cultural characteristics of each country						
Organizing work in the kitchen and coordinating presentations by country						
Breakfast with food preparation, presentation of individual countries and discussion						
Evaluation of PrBL						

Fourth stage of PrBL: Project implementation

The project was implemented according to the previously planned schedule for the project tasks carried out in individual working groups (Table 2).

Table 2: *Implementation of the planned project tasks in the individual working groups*

Tasks	All 12 WGs
Selection of traditional dishes for each country	
The final selection of traditional dishes for each country according to the possibilities of preparation and the availability of ingredients	
Preparation of a list of ingredients for each country	
Preparation of presentations of traditional dishes and cultural characteristics of each country	
Organizing work in the kitchen and coordinating presentations by country	
Breakfast with food preparation, presentation of individual countries and discussion	
Evaluation of PrBL	

Fifth stage of PrBL: Final part

At the end of the event, the Erasmus students who were on exchange in Slovenia came together online to present traditional breakfasts from their respective countries to the UCL students. Together with the students, we conducted an evaluation of the planning and implementation of the PrBL process and reflected on our experiences and results.

The purpose of this study was to provide answers to the following research questions:
RQ1: What are the facilitating and inhibiting factors for integrating the content of the Sustainable Consumer Behaviour module into the study process?

RQ2: How do PrBL promote creativity, collaboration and communication when learning topics from the Sustainable Consumer Behaviour module?

3. Method for assessment

3.1 Sample

20 students were involved in the full-scale pilot. The module was integrated into the English course for first-year student teachers at UCL in Denmark.
The multiplier event (Erasmus Students – Traditional Breakfast) involved 25 Erasmus student teachers who were on an exchange in Slovenia at the Faculty of Education at UL studying the elective subject Nutrition and Nutrition education. These students came from 12 different countries: the Czech Republic, Finland, Germany, Greece, Indonesia, Italy, Japan, the Netherlands, Poland, Slovakia, Spain and Thailand.

3.2 Method and procedure

A case study with a mixed methods approach was carried out. The students' product analyses (posters) and the students' self-assessment were used for the qualitative analysis.

Full-scale pilot
As part of the qualitative analysis, the posters created by a group of students were analysed. The qualitative data was analysed using coding. The following criteria were used in the analysis: Creativity/originality, target group, sustainable development objectives pursued, inclusion of interculturality.
A survey was designed for the qualitative analysis. The data obtained from the surveys were processed with the SPSS programme using descriptive analyses.

Multiplier event of the SustainComp project
For the investigation of the students' project work, their self-assessment and the teachers' assessment were used as methods of data collection. Guiding questions were created for the self-evaluation in order to gain a more detailed insight into the students' thinking about the usefulness of the designed activities. Students were encouraged to reflect, to evaluate the quality of their work, team participation and connection to project goals, and to identify factors that promote or inhibit the implementation of PrBL. The teacher's evaluation served to provide an external and objective assessment of the PrBL implementation process.

4. Results

4.1 Full-scale pilot: Poster analyses

As part of the "Sustainable consumer behaviour" module, students were encouraged to recycle old textiles as a useful didactic tool that can be used in the classroom. Two examples are presented on Poster 2.

As can be seen from Figure 2, the posters included a display of the produced teaching tool and instructions for incorporating this teaching tool into the teaching process of the basic subject.

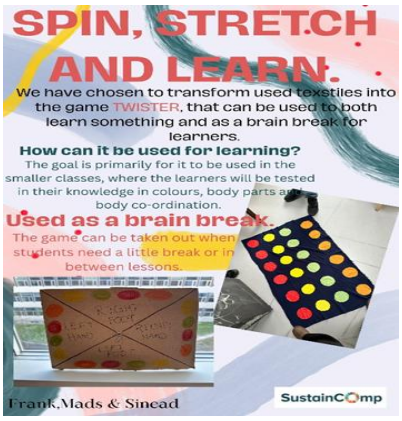

Figure 2: Example of students' posters

In the qualitative analysis posters of 6 student teachers' groups were analysed. The posters were analysed based on the following criteria: creativity, originality of the textile didactic tool, educational level of the target group, knowledge, skills that can be developed through the created didactic tool, sustainable development goals, intercultural competence. Results showed that the students had prepared simple textile didactic materials for different educational levels: preschool (1) and elementary school (5); one group also prepared didactic tools for students with special needs. The groups focused also on developing various aspects of knowledge and skills. Group 1 focused on pronunciation, Group 2 on writing in English, extending vocabulary, writing skills and intercultural competence, Group 3 on knowledge assessment and brain breaks, Group 4 on grammar and vocabulary development Group 5 on the development of communication skills and Group 6 on knowledge – getting to know the letters. Didactic material was prepared for the work in class (6) and for relaxation during breaks (1). Four groups developed original creative didactic tools and two of them average textile didactic tools. The developed textile didactic tools promoted the learning of facts, writing skills, grammar, conversation, pronunciation and brain breaks. The results showed that the students were following two sustainable goals, i.e. quality education and responsible consumption and production.

4.2 Full-scale pilot: Survey results

The fact that the tested task was useful for the students can also be seen from their answers in the survey. The students stated that the activity taught them how to recycle old materials into a useful didactic tool*: "How you can use old clothes to make new things and use them in class." (Student 1).* They also noted the usefulness of these approaches for getting new ideas to teaching: *"Got some inspiration of how it could be taught to students. That's about it." (Student 2).*

After the teaching activities had been carried out, a survey was used to ask students about their knowledge, skills and ideas for teaching. 20 students took part in it. The results (Table 1) show that 60% of the teachers students stated that, to some degree, they gained knowledge about sustainable consumption, energy and that they also gained new skills about sustainable consumption, energy and textiles (50%) Most valuable to the students was the didactic aspect; 65% of student teachers indicated that they received new ideas for teaching about sustainable consumption, energy and textiles to some degree, and 20% of student teachers stated that they received new ideas for teaching about these topics to a high degree.

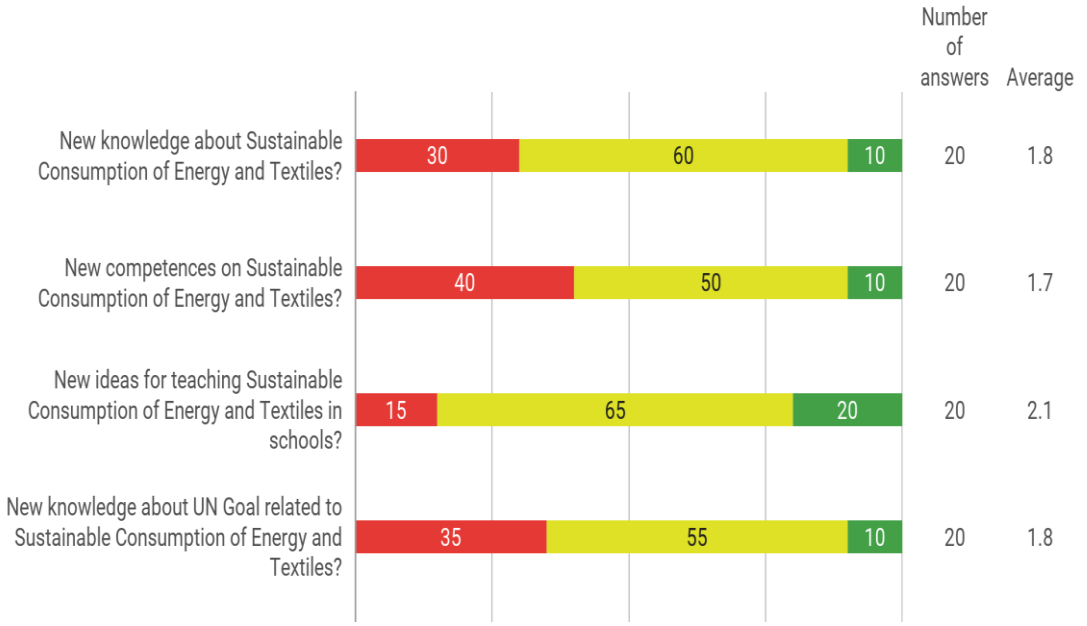

Figure 2: Answers provided by the students

The students were also asked to write down in their own words what they learned about teaching sustainable energy and textile consumption during the UL module. The results showed that students became aware of the importance of reusing textiles and the importance of teaching this topic: *"..the importance of circular economy. When the cost of different resources are decreasing people rather pay for a new one but not reuse resources. It is very important to teach at school to emphasis the action of reusing resources." (Student 3). "I think most of the info that was taught I already knew, however using recycled materials in your teaching is a great idea." (Student 4). "I've become aware of the fact that it is our responsibility as future teachers to try and pass on important knowledge on some of these subjects, although it would have been nice to have a foundation for how to use it." (Student 5).* The students had the opportunity to make suggestions for improving the pedagogical material. The main suggestions related to the difficulty of the different tasks – they prefer to learn at a higher level in a sustainable way: *"To increase the level of difficulty when it comes to the various tasks that are required to be done*." and more in context of their basic subject -English: *"... We chose*

English as our first subject, not Natural science." (Student 6). It was also clear from the student teachers' answers that all the students did not really understand that the methods presented were intended as a test for working in an elementary school classroom and not for learning in their university classroom: "*This is basically an event week for 6th grade students in elementary school and if this has to be catered for university students then I believe it has to be on a similar level as the students." (Student 7).* Someone has also realised that he has problems with this tasks because he does not have the appropriate didactic background: *"If this is used curriculum is used an other time, it should be later in the education, because we need a better understanding about becoming a teacher, because we have practice, and we don't know that much yet. If it is put later in the education, I believe it would be more fun:)*." *(Student 8*). One student also mentioned technical and language problems: *"I think its a great topic to teach about but its been hard to get work done because of the zoom meetings. I get that we had to speak English which extends our vocabulary but it just didn't work." (Student 9).*

The results indicate a positive effect of introducing practical sustainable behaviour (e.g. recycling of textile products) into the process of teachers' preparation for lessons (development of didactic materials). This strategy enables students to reflect on the practical level of the connection between the fundamental content of the subject to be taught and the introduction to sustainable development. It is also important to state that through these activities they understood the importance of their own role – a teacher in the context of teaching about sustainable development. Students who, through their own reflection and activity, develop an understanding on the importance of including sustainable content into their teaching and their own role in this process represent an important foundation for pursuing UNESCO's sustainability goals.

4.3 Multiplier event of the SustainComp project

As part of the SustainComp project's multiplier event, the traditional breakfast for Erasmus Students was held at the Faculty of Education of the University of Ljubljana, together with a virtual presentation for students from the project partner institution UCL from Denmark. The results of the students' self-evaluation of the PrBL process show that the majority rated the quality of their work as adequate. The students emphasised that they focused on including all the important elements of preparing a traditional breakfast from their country and that they closely followed the instructions and objectives of the project.

The students showed their creativity in selecting the traditional dishes and preparing a PowerPoint presentation on the culinary and cultural characteristics of their country. Team participation was rated as an important factor in the success of the project. The students were overwhelmingly positive in their assessment of the mutual cooperation and emphasised the importance of communication, role allocation and joint decision-making. However, challenges

were also encountered, such as differences in working habits, cultural approaches and expectations of working standards, which in some cases affected the dynamics of the group. The students felt that the project successfully combined the practical preparation of traditional dishes from different countries with educational objectives. They pointed out that the practical part (preparing breakfast) allowed for a better understanding of the cultural specificities of the countries the Erasmus students came from, while the virtual presentation allowed for the strengthening of digital skills and the ability to communicate at a distance. Stimulating and inhibiting factors for the implementation of PBL were also identified. Students cited clear guidance from the teacher, easy access to the necessary resources and materials, and support in solving organizational challenges as factors that favour the implementation of PrBL. In addition, they emphasized the encouragement of creativity in the selection, preparation and serving of food as well as in the design of PowerPoint presentations. They also pointed out that PrBL enables intercultural cooperation and learning about the culinary and cultural characteristics of the countries from which the Erasmus students came. The inhibiting factors mentioned were lack of time, difficulties in coordinating other commitments and insufficient experience in organizing and running the event. It was noted that communication in English was an obstacle for some students in the implementation of PrBL, especially in the virtual presentation of culinary and cultural features. In addition to this, some Erasmus students pointed out the challenges in preparing the meals due to a lack of cooking skills and knowledge of the room (kitchen) where they prepared the dishes.

The aim was to promote the integration of sustainable content in education. The inclusion of traditional dishes, which usually represent local foods, promotes the achievement of SDG 12 (Responsible consumption and production), which can relate also to food. In addition to this goal, SDG 3 (Good health and well-being) was included into the PrBL process as well. After the presentation of the traditional breakfast of each country, a discussion with the students took place, in line with the project plan (Table 2). Based on the breakfast presentation, the students identified whether the breakfast ingredients can be purchased locally, how this affects local food production and the amount of discarded food. The students discussed the factors that encourage and inhibit the inclusion of local food in people's diets. In their discussion, it was pointed out that the ingredients used to prepare breakfast in different geographical environments vary according to the availability and accessibility of local foods, which also depends on the environmental conditions for food production. The conclusions showed that by promoting traditional breakfasts, we also promote the production and consumption of locally produced food. The students highlighted the importance of eating breakfast as the meal that influences well-being and health, so these educational activities can contribute to achieving the SDG 3. During the discussion, they stressed that students should
The discussion highlighted that whether or not the students eat breakfast and what they eat depends mainly on their eating habits that are strongly influenced by the daily rhythm in which they are fulfilling their studying commitments and by the financial resources available.

The teachers' evaluation provided an external and objective assessment of the PrBL implementation process. The project was found to be well structured and organised. The students consistently adhered to the plan and completed all tasks on time so that the objectives of the project were met. It was also noted that the students worked together and communicated with each other without any major difficulties. Problems were mainly identified in relation to the virtual presentation of the culinary and cultural characteristics of the countries from which the Erasmus students came. Organizing these presentations in a Zoom video conferencing environment was a challenge, as technical issues such as switching between presentations, placement of students in front of the camera, visibility and audio quality had to be addressed. In addition to this, participants had to be registered for the event in advance and confirmed in real time in the Zoom environment. Another problem was the timing between the practical part of preparing and serving the traditional Erasmus student breakfast and the transition to the virtual presentations. The coordination between the physical preparation of the dishes and the preparations for the virtual presentation proved to be a challenge as the time frames for both activities had to be coordinated.

5. Discussion

The results of the study show that teaching with digital technology using PrBL has many positive aspects for the students. Through the observed activities, students gain new knowledge about current problems; they can acquire information about problems in different countries, solutions and ideas to solve various problems, develop intercultural competence, develop cooperation skills, have a chance to develop creativity and get ideas on how to teach certain topics – develop didactic competence in connection with sustainable development. We found that digital technology in combination with different teaching methods and approaches such as PrBL is a promising way to develop applied knowledge, as student teachers acquire certain factual knowledge, ideas for teaching this content, creativity and applicability of knowledge. The results also indicate a correlation between awareness of critical current issues (new knowledge about the education for sustainable development (ESD)) in the course topic studied and the willingness to teach the topic of sustainable development (ESD), which is in line with the findings of Ogundare & Johana (2023).

However, there were also certain obstacles in the learning and teaching process (different levels of English proficiency, technical issues – new platform). In the future, more should be done to explain to students that it is the purpose of these lessons also to try out different methods and forms of work to teach sustainable textile management (didactic view of teaching), which can be cross-curricular – linked to other subjects, such as English. It would be useful to work more on icebreakers in order to connect students and motivate them to work together.

The problem in the case of the study carried out could also be related to the fact that English students were included in the study, who were also expected to make progress in the area of English conversation. Problems related to the project work were also technical and organizational: pre-registration for the event, poor responsiveness of students, room issues, technical flow/zoom connection, purchase of food – limited funds from the faculty, Erasmus students were not skilled in cooking/finding their way around the room.
A certain amount of time was set aside for the coordination with UCL professors, adapting the content and working methods to UCL students, making sure that a professor at UCL would be present to help in guiding the pedagogical process, clarifying ambiguities, problems: Timetable for implementation, teaching method – constant adjustment of teaching activities was necessary for such clarifications.
Despite the problems arising from the introduction of a completely new way of working, the results are encouraging and speak in favour of introducing education for sustainable development in the context of consumer behaviour.

5.1 Limitations and implications

This study has potential limitations related to the research method used (case study), the relatively small sample of participants and the students' language competence (when giving feedback). This may be even more pronounced with cross-cultural groups, leaving open the possibility that the feedback was not as comprehensive as it could have been.

Implications for practice

An implication of this study is that teachers receive ideas on how they can integrate sustainable development topics into their lessons. Modern consumerism has a negative impact on the environment. People in the textile industry who blindly follow the logic of profit can form an environmentally dangerous combination with unsuspecting consumers. The contents of the Sustainable Consumer Behaviour module enable teachers and student teachers to recognize current problems in the area of sustainable textile consumption in relation to individual behaviour. It also supports them with teaching ideas and didactic materials that they can use, modify or adapt depending on the objectives of the original course they are teaching.

Implication for research

Students' awareness of their own consumer behaviour in the context of sustainable development should be further researched. In particular, it would be useful to investigate why the transfer of knowledge into everyday life is insufficient – what factors create barriers between the awareness of appropriate sustainable behaviour and conduct on the one side and actual behaviour on the other. It would also be worthwhile to investigate whether teaching with the use of digital technology to connect students from different countries is more effective in terms of readiness to protect the world than addressing global issues in closed traditional classes.

6. Conclusion

The results of the pedagogical experiment, which included the development and verification of learning strategies, methods, forms of work and didactic materials within the framework of the newly developed sustainable consumer behaviour module, show encouraging results in terms of the awareness and readiness of students to acquire knowledge and form attitudes and sustainable consumer behaviour. The design of the module thus follows three UNESCO goals, namely SDG 12 (responsible production and consumption), SDG 4 (quality of education) and SDG 3 (good health and well-being). The results show that sustainability as a content framework enables the introduction of sustainable development into various basic teaching subjects. We found that the developed module can also be successfully used in the sense of implementing the pedagogical process with the participation of teachers and students from different countries, which significantly affects the more complex treatment of the content and enables students to gain a broader insight into the topic under discussion based on the exchange of opinions. The study found that students were motivated by the collaborative nature of activities taught using digital technology and were enthusiastic about practical problem-solving tasks. This approach allowed students to develop creativity and collaborative skills while engaging with authentic problems, which increased the relevance and applicability of the products developed. The SustainComp project demonstrates the potential of innovative educational practices to improve student engagement and learning outcomes in a global context. For the teachers, the experience provided an opportunity to try out different teaching methods. It was important to have a facilitator on site who was familiar with the workflows and methods of the remote teachers and who could guide and support the students throughout the process.

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