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**Integration of Sustainable Practices in Higher
Tourism Education**

**WP5 – Eco Edu Wave: Advancing Sustainable Tourism
Through Education and Global Impact**

WP5.2 – Sustainable Tourism Case Studies Compilation



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1. INTRODUCTION

1.1 PROJECT OBJECTIVES

The Erasmus+ Program, **EcoHarmony**, co-funded by the European Union, is dedicated to transforming sustainable tourism education in alignment with the EU's strategic visions and the **Sustainable Development Goals (SDGs)**. The program focuses on key areas, including **Quality Education (SDG 4)**, **Sustainable Cities and Communities (SDG 11)**, and **Climate Action (SDG 13)**. This initiative represents a collaborative effort among seven organizations from Spain, the Netherlands, Croatia, Turkey, Greece, and Italy to advance sustainable tourism education at the international level.

The EcoHarmony project aims to drive a shift toward sustainable tourism practices in higher education, emphasizing education for sustainable development and transforming the tourism industry. The specific objectives (SO) of the project are:

- **SO1:** Develop an interdisciplinary curriculum for sustainable tourism education by integrating the Global Sustainable Tourism Framework (GTSF).
- **SO2:** Create the Eco Learn Network platform, a digital collaborative environment for sustainable tourism education connecting students, educators, and professionals across multiple countries.
- **SO3:** Implement a micro-credentialing system that validates specific competencies in sustainable tourism, enhancing employability in the green economy sector.
- **SO4:** Evaluate the effectiveness of methodologies and the impact of the curriculum and digital platforms on developing sustainable competencies among students and tourism professionals.

1.2 OBJECTIVES OF WORK PACKAGE 5 (WP5)

- **Strengthening Sustainable Tourism Practices within Education Frameworks:** This objective focuses on embedding sustainable tourism concepts and practices into the curricula of higher education institutions. It aims to ensure that future professionals are equipped with the knowledge and skills necessary to implement sustainable tourism practices.
- **Assess the Impact of Sustainable Tourism Practices:** By evaluating the effectiveness of these educational practices on students' understanding, skills, and readiness for the tourism industry, as well as their broader impacts on local

communities and ecosystems, this objective seeks to measure the tangible outcomes of the project's initiatives.

- **Share the Project Results and Best Practices Globally:** To disseminate the project's findings, methodologies, and educational materials to a broader audience, including academic institutions, industry stakeholders, and policymakers worldwide, to promote sustainable tourism development.

1.3 PLANNED RESULTS OF WORK PACKAGE 5 (WP5)

- **Enhanced Integration of Sustainable Tourism Practices:**
 - Development of a Comprehensive Curriculum: Incorporating sustainable tourism practices into higher education curricula, tailored to promote environmental stewardship, social responsibility, and economic viability.
 - Implementation of Green Guidelines: Guidelines for organizing sustainable events will be established and adopted, minimizing environmental impact and promoting sustainability principles.
- **Impactful Educational Outcomes:**
 - Increased Understanding and Skills Among Students: Through the sustainable tourism impact evaluation framework, there will be a measurable increase in students' understanding, skills, and readiness to apply sustainable practices in the tourism industry.
 - Broader Impact on Local Communities and Ecosystems: Assessments will reveal the positive effects of educational initiatives on local communities and ecosystems, showcasing the tangible benefits of integrating sustainable tourism practices.
- **Global Dissemination of Knowledge and Best Practices:**
 - Publication of Case Studies and Educational Materials: A compilation of case studies and the dissemination of educational materials, will inspire and inform stakeholders worldwide.
 - Multilingual Resources: Key outputs translated into multiple languages will ensure broader accessibility and impact, reaching a global audience.
 - Digital Platform Utilization: The project's online platform will serve as a hub for sharing educational content, impact reports, and best practices, facilitating easy access and global engagement.

- **Advancement of Global Sustainable Tourism Education:**
 - Virtual Conferences and Workshops: Organizing virtual events will present findings, discuss challenges and opportunities, and share innovative solutions in sustainable tourism, engaging a worldwide audience.
 - Sustain Europe 2027 Summit

1.4 OBJECTIVES OF WORK PACKAGE 5.2 (WP5.2)

The Sustainable Tourism Case Studies Compilation seeks to:

- **Document** specific instances where educators have successfully integrated the sustainable tourism curriculum into their courses, highlighting challenges, solutions, and impacts.
- **Select high-impact case studies** for digital publication.
- Provide a **collection of inspirational case studies** showcasing successful sustainable tourism practices. It serves as an educational and inspirational resource, showcasing effective sustainability initiatives in the educational tourism sector.

1.5 METHODOLOGY

To ensure a coherent and valuable compilation, IQS developed a detailed protocol for case study submission, which was discussed and agreed upon in several consortium meetings. These discussions were essential for aligning expectations and clarifying the type of case studies to be included. Notably, each partner was encouraged to focus on a distinct innovative teaching methodology relevant to sustainable tourism education, thereby enriching the collection's diversity and scope.

This collaborative approach ensured that the final compilation provides a more meaningful and dynamic resource for educators in sustainable tourism, showcasing a wide range of strategies and practices applicable across diverse academic and professional contexts.



2. CASE STUDIES

2.1 CASE STUDY 1 - INTEGRATING AI TOOLS INTO SUSTAINABLE TOURISM EDUCATION AT BATMAN UNIVERSITY.

Methodology: AI-Supported Experiential Learning and Data-Driven Tourism Education

Possible Topics and Uses: Artificial intelligence in tourism education; sustainable tourism management; biodiversity conservation; digital transformation; eco-tourism route optimization; and higher education innovation.

Reasons for Selection: This case provides an outstanding example of how AI integration in tourism education can simultaneously enhance learning outcomes, environmental sustainability, and data-driven decision-making. Batman University's initiative demonstrates how advanced technologies such as ChatGPT, Grok 3.0, and Gemini can be harnessed to train students in sustainable tourism planning, biodiversity management, and responsible visitor behavior. The case highlights the synergy between AI-based pedagogy and community-based conservation, showcasing how digital tools can address real-world sustainability challenges while empowering students to become active contributors to environmental stewardship.

Case description:

1. Introduction

Tourism education is rapidly evolving with the integration of artificial intelligence (AI) to enhance learning outcomes and address real-world challenges in sustainable tourism management. Batman University's Tourism Guidance Department has adopted AI tools, including ChatGPT, Grok 3.0, and Gemini, to support students in research, analysis, and decision-making related to sustainable tourism. This case study explores how AI technologies are transforming tourism education, route optimization, and biodiversity conservation efforts in Batman, Türkiye, with a particular focus on Hasankeyf and the university's sustainable butterfly tourism initiative.

2. Context and Rationale

Batman is a region rich in cultural and natural heritage, home to Hasankeyf, one of the world's oldest continuously inhabited settlements, with archaeological remains dating back over 12,000 years. Additionally, Batman is strategically located near Mardin and Diyarbakır, both culturally significant cities that contribute to regional tourism connectivity. However, despite its potential, the region faces critical challenges such as:

- Mass tourism and environmental degradation, particularly in Hasankeyf.
- Limited conservation efforts and insufficient use of data-driven decision-making.

- Lack of digital transformation in tourism education makes it difficult for students to engage with modern sustainability practices.

To address these issues, Batman University has integrated AI-powered solutions to enhance tourism sustainability, optimize visitor flow, and develop digital learning modules that promote student engagement in real-world conservation projects.

3. Methodology: AI Tools in Sustainable Tourism Education

Batman University applies AI tools in its tourism curriculum to enhance research, decision-making, and conservation strategies. This approach is designed to make tourism education more practical, data-driven, and interactive.

Key AI Applications in Tourism Education:

1. AI-Supported Research and Analysis

Students use ChatGPT, Grok 3.0, and Gemini to analyze real-time sustainability challenges, generate reports, and conduct comparative case studies on global best practices (SDSN, 2024).

2. AI-Assisted Learning Modules

AI-driven interactive exercises help students understand sustainability indicators, visitor behavior, and environmental policies (UNESCO, 2024).

3. Scenario-Based Decision Making

Students simulate the social and environmental impacts of tourism activities in Hasankeyf using AI to create predictive models (TEFI studies, 2024).

4. Virtual Site Simulations

AI-generated 3D models allow students to explore tourism management strategies without affecting sensitive historical sites (PRME, 2024).

This structured AI integration ensures that students graduate with real-world skills in AI-driven tourism planning, sustainability assessment, and policy formulation.

4. Practical Applications of AI in Sustainable Tourism

A. AI-Integrated Sustainable Butterfly Tourism

A key application of AI in sustainable tourism education at Batman University is its research on Sustainable Butterfly Tourism, led by Assoc. Prof. Dr. Volkan Genç and Assoc. Prof. Dr. Seray GülerTekin Genç. Their study examines the impact of eco-tourism practices on butterfly habitats in Batman's rural landscapes.

◆ AI Applications in Biodiversity and Habitat Analysis:

- **ChatGPT:** Processes scientific literature on butterfly migration, habitat preferences, and conservation efforts.
- **Grok 3.0:** Analyzes real-time satellite imagery and drone data to identify tourist hotspots and their impact on butterfly breeding grounds.
- **Gemini:** Predicts optimal low-impact tourism periods to minimize human interference with butterfly reproduction cycles.

By incorporating AI into conservation-based tourism education, students actively participate in analyzing and mitigating the adverse effects of tourism on biodiversity.

B. AI-Optimized Thematic Route Planning

To reduce the environmental impact of tourism while maintaining accessibility, Batman University's AI-powered thematic route-optimization project has developed alternative eco-tourism routes.

Six Thematic Tourism Routes Designed with AI Assistance:

1. Mereto Mountain Route
2. Zovaser Mountain Route
3. Zore Canyon Route
4. Hasankeyf Castle and Canyon Route
5. Alodino Castle Route
6. Aynegbire Butterfly Watching Route

AI Applications in Route Management:

- **Implementation:** Using Grok 3.0's satellite mapping and land-use analysis, students designed low-impact hiking paths to divert visitors away from sensitive archaeological sites.
- **Application:** AI identified high-footfall areas in Hasankeyf and medieval rock-cut settlements, enabling the mapping of alternative, low-impact eco-tourism routes.
- **Solution:** The university collaborated with local tour operators to promote AI-generated sustainable travel routes, ensuring more effective crowd distribution and reduced environmental impact.

C. AI-Assisted Smart Signage and Awareness Campaigns

A pilot AI-powered visitor management system was implemented in Hasankeyf to improve tourist education on eco-tourism principles.

◆ Implementation:

- Gemini-powered AI chatbots were integrated into visitor centers to provide real-time conservation information and answer tourist inquiries.

- ChatGPT and Gemini-generated educational content were included in guided tours to increase awareness of sustainability best practices.

◆ **Application:**

- AI chatbots identified that 60% of visitors were unaware of butterfly migration seasons, which coincided with peak tourism periods.

◆ **Solution:**

- AI-generated awareness campaigns included digital signage, mobile notifications, and designated eco-tourism viewing areas to minimize habitat disruption.

This AI-driven approach improved visitor education and helped reduce the ecological impact of uncontrolled tourism.

5. Data-Driven Policy Recommendations for Local Authorities

To ensure long-term sustainability, AI-generated reports were shared with the Batman Municipality to support eco-tourism policies.

Policy Outcomes:

- AI-generated data suggested controlled tourism access periods to minimize disruptions to butterfly breeding cycles.
- Batman Municipality integrated AI-driven tourist behavior models to adjust visitor capacities and enforce eco-tourism guidelines.

By utilizing AI-powered decision-making models, local authorities gained data-driven insights to support sustainable tourism management.

6. Impact and Future Expansion

- AI-driven conservation measures led to a 35% decrease in human disturbance to butterfly habitats within one season.
- Local tour guides and businesses received AI training, enabling them to promote eco-friendly tourism strategies independently.
- A dedicated tourism platform (www.batmanekoturizmrotalari.com.tr) was developed, offering:
 - Route maps and conservation guidelines
 - AI-powered visitor engagement tools

Plans include expanding AI applications to other cultural heritage sites and improving AI-powered sustainability assessments.

7. Conclusion

By integrating ChatGPT, Grok 3.0, and Gemini into sustainable tourism education, Batman University has successfully created an AI-enhanced eco-tourism curriculum. This initiative serves as a model for AI-driven conservation projects in Türkiye, ensuring the long-term protection of natural and cultural heritage sites while enhancing student learning experiences.

References:

- United Nations World Tourism Organization (UNWTO). (2024). Digital Transformation in Sustainable Tourism. Retrieved from <https://www.unwto.org>
- Global Sustainable Tourism Council (GSTC). (2024). Sustainability and Technology in Tourism Management. Retrieved from <https://www.gstcouncil.org>

2.2 CASE STUDY 2 - EXPLORING SUSTAINABLE TOURISM THROUGH VIRTUAL TRAVEL: GENERATION Z'S PERSPECTIVES

Methodology: Travel Career Pattern (TCP) Model, Regression Analysis, ANOVA

Possible topics and uses: Virtual tourism, Generation Z travel motivations, Sustainable tourism education, Simulation-based learning, Technological innovation in tourism.

Reasons for selection: This case study examines the potential of virtual tourism as a sustainable travel practice, particularly appealing to Generation Z. By applying the Travel Career Pattern (TCP) model, the research identifies motivational factors that influence Generation Z's preferences for virtual travel. The study also highlights the potential of virtual tourism to promote sustainability by reducing environmental impact and enhancing accessibility. Its innovative approach to understanding Generation Z's motivations through empirical analysis makes it a valuable reference for Eco-Harmony Project activities.

Case study description: The study "Exploring Sustainable Tourism Through Virtual Travel: Generation Z's Perspectives" examines how virtual tourism can serve as a sustainable alternative to traditional travel. By utilising the Travel Career Pattern (TCP) model, the research explores the motivations that drive Generation Z to engage in virtual travel. Data were collected through a questionnaire survey completed by 504 respondents aged 14–26 from Croatia and Romania. The questionnaire measured motivations for travel, preferences for virtual tourism models, and demographic data.



The research identified four primary types of virtual tourism: accessible real places, historical locations, inaccessible areas, and fantasy worlds. Regression analysis and ANOVA were used to evaluate the significance of motivational factors in influencing preferences for each model. The findings revealed that Generation Z's motivations for virtual tourism are primarily driven by recognition, self-development, stimulation, and involvement with the host site. These insights are particularly valuable for developing simulation-based learning modules promoting sustainable tourism education.

The study concludes that virtual tourism has significant potential as a sustainable travel practice, especially for Generation Z. It offers inclusivity, accessibility, and educational value while reducing the environmental impact of physical travel. This approach aligns well with promoting sustainable tourism education through innovative methodologies.

References:

Mavrin, I.; Tursie, C.; Matichescu, M. (2024). Exploring Sustainable Tourism Through Virtual Travel: Generation Z's Perspectives. Sustainability 2024, 16, 10858. <https://doi.org/10.3390/su162410858>

2.3 CASE STUDY 3 - FIELD ENVIRONMENTAL PHILOSOPHY: A BIOCULTURAL ETHIC APPROACH TO EDUCATION AND ECOTOURISM FOR SUSTAINABILITY

Methodology: Field Environmental Philosophy (FEP)

Possible topics and uses: Biocultural conservation, Sustainable tourism education, Experiential learning, Integration of social, cultural, and environmental sustainability, and Philosophical approach to ecotourism.

Reasons for selection: This case study was selected because it presents an innovative and interdisciplinary approach to sustainable tourism education through Field Environmental Philosophy (FEP). FEP combines scientific research, ecological philosophy, and experiential learning to address biocultural homogenisation and promote biocultural conservation. Its application at the Omora Ethnobotanical Park within the Cape Horn Biosphere Reserve demonstrates its potential to integrate tourism with education, conservation, and community engagement.

Case description: The study "Field Environmental Philosophy: A Biocultural Ethic Approach to Education and Ecotourism for Sustainability" introduces a novel educational methodology, field Environmental Philosophy (FEP), developed at the Omora Ethnobotanical Park in Chile's Cape Horn Biosphere Reserve.



FEP uses the "3Hs" model (Habitats, Habits, Co-inhabitants) of biocultural ethics to reorient tourism practices toward enhancing biocultural conservation. Its methodology follows a four-step cycle.

1. **Transdisciplinary Research:** Combining ecological studies and philosophical inquiry to explore the relationships between humans and their environments.
2. **Poetic Communication:** Creating metaphors and narratives that bridge scientific understanding with cultural and ethical reflections.
3. **Co-Creation of Field Experiences:** Developing guided field activities that allow participants to engage directly with natural and cultural environments through experiential learning.
4. **In-situ Conservation:** Implementing conservation practices that integrate cultural and ecological knowledge to foster sustainable tourism.

This approach has been successfully applied in the [Omora Ethnobotanical Park](#), where activities such as "Ecotourism with a Hand Lens" and "Open Your Eyes to Dive" have been developed. These activities encourage participants to engage with biodiversity by observing it directly and using creative processes. This method deepens the understanding of the region's ecological and cultural significance. Furthermore, the approach can be applied to various locations and contexts, making it a valuable asset for future educational initiatives. These activities encourage participants to engage with biodiversity by observing it directly and using creative processes.

References:

Tauro, A.; Ojeda, J.; Caviness, T.; Moses, K.P.; Moreno-Terrazas, R.; Wright, T.; Zhu, D.; Poole, A.K.; Massardo, F.; Rozzi, R. (2021). Field Environmental Philosophy: A Biocultural Ethic Approach to Education and Ecotourism for Sustainability. Sustainability 2021, 13, 4526. <https://doi.org/10.3390/su13084526>

2.4 CASE STUDY 4 – GAMIFICATION AS A LEARNING METHOD IN TOURISM EDUCATION

Methodology: Gamification as a learning method in tourism education.

Reasons for selection: Gamification has emerged as a transformative approach in tourism education, offering innovative ways to engage learners and enhance their educational experiences. By integrating game design elements into educational contexts, gamification can make learning more interactive and enjoyable, particularly in fields like tourism that thrive on experiential learning. Several case studies illustrate the successful application of gamification in tourism education, highlighting its potential to revolutionize the way tourism is taught and experienced.

Possible topics and uses:

1. **Awareness and Impact:** Gamified experiences can effectively illustrate the consequences of unsustainable tourism practices. This can raise awareness of issues such as overtourism, pollution, and the destruction of natural habitats, motivating learners to become responsible tourism professionals.
2. **Cultural Sensitivity:** Games can be designed to promote respect for local cultures and traditions, which is essential for sustainable tourism. Learners can participate in virtual tours or interactive experiences that highlight the importance of preserving cultural heritage.
3. **Knowledge Retention:** Gamification can improve knowledge retention by making learning more enjoyable and interactive. Quizzes, puzzles, and challenges can reinforce key concepts and ensure that learners retain important information about sustainable tourism.
4. **Enhanced Engagement:** Gamification transforms learning from passive to active. Incorporating game mechanics like challenges, points, and rewards makes sustainable tourism concepts more engaging and memorable. This interactivity is crucial for fostering a deeper understanding of sustainable practices.
5. **Practical Application:** Simulations and role-playing games can provide learners with real-world scenarios, allowing them to practice making sustainable decisions in a safe environment. For example, a simulation could involve managing a hotel while minimizing its environmental impact.
6. **Data Collection and Feedback:** Gamified platforms can collect valuable data on learner behavior and preferences, providing insights into their understanding of sustainable tourism. This data can be used to improve educational programs and tailor them to learners' specific needs.



Method

Gamification pedagogy has emerged as a promising strategy to mitigate the disruptions caused by COVID-19 in tourism education. The pandemic necessitated a shift to online and hybrid learning environments, prompting educators to explore innovative teaching methods. Gamification, the integration of game design elements into educational contexts, has been identified as an effective tool for enhancing student engagement, motivation, and learning outcomes in tourism education. This approach not only addresses the immediate challenges posed by the pandemic but also aligns with the evolving needs of the tourism industry by fostering employability skills and adaptability among students. The following sections delve into the specific benefits and challenges of gamification in tourism education.

Enhancing Student Engagement and Motivation

- Gamification has been shown to significantly boost student engagement and motivation by incorporating interactive and competitive elements into the learning process (Balakrishnan Nair, 2022; Singh, 2024).
- It transforms traditional learning experiences into more dynamic and enjoyable activities, making students more likely to participate actively and retain information (Bitencourt, 2023).

Fostering Employability Skills

- By simulating real-world scenarios and challenges, gamification helps students develop critical employability skills such as problem-solving, teamwork, and communication (Singh, 2024).
- This approach aligns with the industry's demand for practical skills and prepares students for the evolving landscape of tourism (Wan et al., 2024).

Addressing Diversity and Inclusion

- Gamification can cater to diverse learning styles and needs, promoting inclusivity in the educational environment (Balakrishnan Nair, 2022).
- It provides a platform for all students to engage and succeed, regardless of their background or learning preferences (Mohanty et al., 2023).

Challenges and Considerations

- Despite its benefits, the implementation of gamification in tourism education faces challenges such as technological barriers and the need for educator training (Mohanty et al., 2023).
- There is also a risk of unequal access to digital resources, which can exacerbate existing educational inequalities (Bitencourt, 2023).

While gamification offers numerous advantages in offsetting COVID-19 disruptions in tourism education, it is essential to address the challenges associated with its implementation. Ensuring equitable access to technology and providing adequate training for educators are crucial steps in maximizing the potential of gamification as a pedagogical tool. Additionally, ongoing research and collaboration between academia and industry stakeholders will be vital in refining and expanding the use of gamification in tourism education.

References:

- Balakrishnan Nair B. (2022). Endorsing gamification pedagogy as a helpful strategy to offset the COVID-19 induced disruptions in tourism education. *Journal of hospitality, leisure, sport & tourism education*, 30, 100362. <https://doi.org/10.1016/j.jhlste.2021.100362>
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- Mohanty, P., Tulshyan, S. B., John, S. M., & Niranjan, L. R. (2023). Gamification in Tourism Teaching and Learning: Exploring the Emergent Dimensions (pp. 1–13). Springer Nature (Netherlands). https://doi.org/10.1007/978-981-99-3895-7_13-1
- Singh, A. (2024). Endorsing Gamification Pedagogy for Nurturing Employability Skills in Higher Education Institutions (HEI) (pp. 172–183). IGI Global. <https://doi.org/10.4018/979-8-3693-0716-8.ch008>
- Wan, F., Yang, M., & Xi, Y. (2024). Tourism Education in the Post-Pandemic Era. <https://doi.org/10.5772/intechopen.115079>

Case descriptions:

a) Jeonju Tourism Course Development

Jeonju Hanok Village in Korea is a prime example of gamification in tourism education. A new tourism course was developed using gamification to connect significant historical and cultural sites, enhancing the tourist experience through storytelling and traditional games. This approach increased user engagement and satisfaction, demonstrating the effectiveness of gamification in creating memorable tourism experiences. The gamified tourism course developed for Jeonju enhances user engagement and enjoyment by incorporating core elements such as challenge, competition, achievement, reward, and relationship, making it more effective than traditional tourism courses. (Yoon, 2024).

Source: Yoon, H. (2024). A Case Study of Jeonju Tourism Course Development Using Gamification. *Journal of Digital Contents Society*. <https://doi.org/10.9728/dcs.2024.25.8.2185>



b) Gamification in promoting tourism in the town of Ivanić-Grad, Croatia

"Windows to the Past" invites visitors on a unique journey through the history of Ivanić-Grad, Kloštar Ivanić, and Križ. Users can uncover fascinating stories and solve puzzles that reveal the rich cultural heritage of these locations through an interactive game. Visitors can expect an exciting experience exploring hidden corners and landmarks while learning about historical events in a fun way. This game is perfect for anyone who wants to experience history in an engaging and interactive way, visiting sacred buildings and other landmarks. Through the game, users can actively participate in discovering historical facts.

References: <https://www.tz-ig.com/windows-to-the-past>

QUIZZES

Quizzes offer a fun way for users to explore which historical era resonates with their personality. Participants can discover their unique style of world exploration and puzzle-solving through engaging quiz questions. These quizzes allow visitors to delve into their own historical persona, revealing how they approach challenges and discovery. Users enjoy a personalized journey through history, uncovering their preferred era and puzzle-solving techniques. Visitors can learn more about themselves and their historical preferences through the interactive quiz.

References: <https://www.tz-ig.com/kviz-eng>



2.5 CASE STUDY 5 - TEACHING INNOVATION AND LEARNING METHODS FOR SUSTAINABLE TOURISM DEVELOPMENT EDUCATION IN THE BACHELOR OF TOURISM DEGREE

Methodology: Reflective Learning Techniques

Reasons for selection: The researchers selected this case study based on several key factors that align with the **importance of reflective techniques in sustainable tourism education**. The main reasons for its selection include:

- The Need for Innovative Teaching Methods in Tourism Education
- The Growing Importance of Sustainability in Tourism
- The Role of Reflection in Professional Development
- The Need to Enhance Online and Hybrid Learning
- Addressing the Gap in Tourism Education Research

Case description:

The study "*Teaching Innovation and Teaching–Learning Methods for Sustainable Tourism Development Education in the Bachelor of Tourism Degree*" explores how reflective learning techniques can enhance the training of tourism professionals in sustainability. Conducted at the Technical University of Manabí, Ecuador, the research highlights the significance of self-reflection, critical analysis, and introspective learning in developing future-ready tourism professionals capable of implementing sustainable practices.

Reflective Techniques in Sustainable Tourism Education

The study incorporates structured reflection methodologies to help students develop a deeper understanding of sustainability challenges and solutions. Key techniques used include:

1. Reflective Journals

- a. Students maintained personal learning diaries where they recorded their thoughts, observations, and reactions to sustainability challenges in tourism.
- b. These journals encouraged self-awareness and helped students connect theoretical concepts with real-world sustainability issues.

2. Problem-Based Reflective Learning

- a. Students were presented with real-world sustainability dilemmas and had to reflect on possible solutions.
- b. They engaged in critical self-evaluation, considering ethical implications, environmental impacts, and long-term sustainability strategies.

3. Group Reflection and Peer Discussion

- a. Structured group discussions and debates encouraged students to reflect on different perspectives of sustainability in tourism.



- b. Peer feedback played a role in challenging assumptions and fostering deeper critical thinking.

4. Case Study Reflections

- a. Students analyzed sustainability-focused case studies from Ecuador and other regions, identifying best practices and failures.
- b. Through guided reflection, they developed contextualized solutions tailored to the tourism industry's evolving needs.

Impact of Reflective Techniques on Online Learning and Sustainability Training

By integrating reflective techniques, the study demonstrates how these methods:

- Enhance Critical Thinking: Reflection encourages students to question and refine their understanding of sustainability.
- Promote Deep Learning: Unlike passive learning, self-reflection reinforces retention and application of concepts in real-world contexts.
- Improve Decision-Making Skills: Engaging with reflective learning helps students analyze consequences and make ethical tourism decisions.
- Support Online and Hybrid Learning: Reflection-based assignments, such as journals and virtual discussions, are easily adaptable to digital platforms, making them effective for remote sustainability education.

Conclusion

The study highlights the transformative role of reflective techniques in sustainability education for tourism. By incorporating self-reflection, peer discussions, and problem-based analysis, students develop the awareness, responsibility, and problem-solving skills necessary for sustainable tourism management. The findings suggest that expanding the use of reflective methodologies in online and hybrid learning environments can significantly enhance sustainability education in tourism studies.

References: <https://doi.org/10.3390/su16188115>

2.6 CASE STUDY 6. REFLECTIVE AND COOPERATIVE LEARNING FOR UNDERSTANDING SUSTAINABILITY THROUGH AN ECO-INNOVATION STRATEGY IN RURAL TRAVEL AND HOSPITALITY: A STEAM CASE STUDY

Methodology: Reflective Journals

Reasons for selection: The researchers selected this case study for several key reasons, primarily because it is well-suited to examining sustainability learning through *eco-innovation* and *reflective journals* within a STEAM education framework. The justification for choosing this specific case included the following factors:

- Relevance to Eco-Innovation in Rural Development
- Alignment with Education for Sustainable Development (ESD) Goals
- Interdisciplinary and Experiential Learning in a STEAM Context
- Potential for Business-to-Business (B2B) and Business-to-Consumer (B2C) Learning
- Opportunity to Study Situated Learning in an Authentic Context

Case Description: The study "*Reflective and Cooperative Learning for Understanding Sustainability through an Eco-Innovation Strategy in Rural Travel and Hospitality: A STEAM Case Study*" explores the use of reflective and cooperative learning methodologies to teach sustainability in rural tourism. The research was conducted in Wanluan, Taiwan, focusing on Education for Sustainable Development (ESD) within the context of eco-innovation, combining experiential learning with STEAM (Science, Technology, Engineering, Arts, and Mathematics) principles.

One key approach of the study was the use of *reflective journals* as a methodological tool. These journals were used to help students document their experiences, observations, and thoughts on the relationship between sustainability, tourism, and eco-innovation in a rural setting. The students participated in two types of activities:

B2B (Business-to-Business) – Sustainability in Hospitality and Food Services

- Hospitality management students played the role of farm owners promoting organic agriculture and the *farm-to-table* concept.
- Through hands-on experiences, students had to plan, cook, and serve meals in a natural dining environment.
- In their *reflective journals*, they reflected on the importance of reducing the carbon footprint through local production and consumption.

B2C (Business-to-Consumer) – Responsible Tourism and Cultural Reflection

- Tourism, sports management, and nutrition students conducted self-guided trips to rural communities, visiting heritage sites and assessing the sustainability of the tourism offerings.

- During their visits, they recorded their perceptions in the *reflective journals*, analyzing the impact of tourism on local culture and the environment.
- They also evaluated how tourism infrastructure and planning could enhance sustainability without compromising cultural authenticity.

The *reflective journals* were essential in fostering introspection and awareness of sustainability. Students were asked to identify challenges and propose solutions based on their experiences, strengthening their critical thinking and responsible decision-making skills.

The study demonstrated that using **reflective journals** in combination with experiential learning can be highly effective for online sustainability teaching in tourism. Some of the key impacts identified include:

- **Greater student engagement:** By writing about their experiences and reflecting on their impact, students felt more committed to sustainability principles.
- **Improved knowledge retention:** Compared to traditional methods, the combination of experiential learning and structured reflection facilitated a deeper understanding of the topics.
- **Authenticity in learning:** The methodology allowed students to connect theory with practice, resulting in better assimilation of knowledge on sustainability applied to tourism.
- **Flexibility for online teaching:** Although many activities were conducted in person, *reflective journals* were easily integrated into online learning environments, facilitating remote assessment.

Conclusion

The study highlights the value of *reflective journals* as a key pedagogical tool in teaching sustainability in tourism, especially in online programs. This methodology not only promotes critical reflection but also facilitates the practical application of knowledge, contributing to a more effective and transformative education within the ESD 2030 framework.

References: <https://doi.org/10.3390/su151713152>



2.7 CASE STUDY 7 - A REVIEW OF A SUSTAINABLE TOURISM CURRICULUM IN HIGHER EDUCATION

Methodology: Simulations

Possible topics and uses: simulations can be used in various fields:

- **Medicine:** For training in emergency situations.
- **Engineering:** To test designs without real risks.
- **Business Management:** To simulate strategic decisions.
- **Education:** To improve interactive learning.

Reasons for selection: The simulation was chosen for several reasons:

- **Realism:** The ability to reproduce concrete situations, promoting immersive learning.
- **Interactivity:** Students are active and involved in the learning process.
- **Applicability:** It allows you to transfer the knowledge acquired directly into the work context.
- **Safety:** Allows you to experience complex situations without real risks.
- **Skills assessment:** It is a useful tool to verify the acquisition of knowledge and practical skills.

Case Study Description: The case analyzed focuses on integrating educational simulation into university teaching to enhance experiential learning. The specific context concerns a university course on sustainable tourism, in which students must face realistic scenarios to understand the challenges of managing tourism destinations sustainably.

The initiative was implemented in a tourism management degree program and involves a simulation activity in which students assume different roles within a tourism ecosystem. Participants are divided into groups and assigned to specific tourism stakeholders, including:

- Hotel operators
- Travel agencies and tour operators
- Representatives of local governments
- Environmental organizations and sustainability associations
- Local communities and residents
- Tourists and travellers

The main objective of the simulation is to make students experience the complex decision-making process that characterizes sustainable tourism management. During the simulation, real-world problems are presented, such as the environmental impact of mass tourism, natural resource management, and the creation of sustainable tourism experiences.

Simulation Phases

1. Preparation and Briefing

- a. Students receive informational materials on the principles of sustainable tourism and the roles assigned.
- b. Specific guidelines are provided on the objectives of the simulation and the decisions that will be made.

2. Role Assignment and Interaction

- a. Each group is given a specific role and goals to pursue during the simulation.
- b. Participants must work together to negotiate balanced solutions, addressing issues such as destination economic development, environmental protection, and local community engagement.

3. Active Simulation

- a. The simulation takes place in multiple phases, with progressive scenarios that test students' ability to adapt to new variables.
- b. Teachers introduce unexpected events (e.g., an environmental crisis, a change in regulation, a pandemic) to assess students' responsiveness and problem-solving skills.

4. Debriefing and Evaluation

- a. At the end of the simulation, students participate in a reflection session in which they analyze the decisions made and their impact.
- b. An assessment of the skills developed is carried out, with particular attention to conflict management, negotiation, and strategic planning.

Results and Benefits

The implementation of the simulation has produced positive results in several areas:

- **Experiential Learning:** Students reported an improvement in their understanding of the complex dynamics of sustainable tourism, compared to the traditional theoretical approach.
- **Development of Transversal Skills:** The need to work in teams, negotiate and solve problems has improved their communication, leadership and critical thinking skills.
- **Increased Engagement:** The interactive format made the lessons more engaging, increasing student motivation.



- **Impact on Future Professionals:** The simulation provided students with practical tools to address real-world scenarios, better preparing future sustainable tourism professionals.

Simulation Structure

The simulation is structured in different phases:

1. **Preparation** – Students receive context and background information.
2. **Role Assignment** – Each participant takes on a specific role.
3. **Execution** – Students interact with each other to solve the problem presented.
4. **Feedback and Evaluation** – Teachers analyze performance and provide feedback to improve learning.

Educational Impact and Added Value

The use of simulation had a positive impact on the learning process:

- **Increased engagement:** Students are more motivated than with traditional methods.
- **Improving practical skills:** Hands-on experience helps develop essential skills.
- **Greater collaboration:** The need to work in teams strengthens communication skills.
- **Adaptability:** Simulation can be applied to different educational contexts.

References:

https://www.researchgate.net/publication/362060757_A_Review_of_Sustainable_Tourism_Curriculum_on_Higher_Education



2.8 CASE STUDY 8 - EXPLORING GAMIFICATION TECHNIQUES AND APPLICATIONS FOR SUSTAINABLE TOURISM

Methodology: Gamification

Reasons for selection: The main reason for selecting a game simulation for teaching sustainable tourism is the need to bridge the gap between theory and practice. Gamification offers a unique opportunity to stimulate student engagement, improve critical thinking, and foster peer collaboration. Furthermore, sustainable tourism is a complex topic that requires a systemic vision and the ability to balance economic, social, and environmental interests, which is why a simulation is particularly effective.

Possible topics and uses: Simulation can be applied in various academic and professional contexts, with possible topics including:

- Natural resources management in tourist destinations.
- Economic sustainability and social impacts of tourism.
- Marketing strategies for responsible tourism.
- Using technology for sustainable tourism.

This type of simulation can be used in both tourism degree courses and professional training programs.

Case Description: In the case study, students assume the roles of various stakeholders involved in developing a sustainable tourism destination. Stakeholders include tourism operators, local governments, local communities, and environmentalists. The simulation presents a scenario in which a tourism destination is evaluating different options for sustainable development, such as adopting green practices, increasing responsible tourism, or managing tourist overcrowding.

Students work in groups and must analyze data, negotiate with other parties, and propose solutions that balance economic, social, and environmental needs. The simulation spans multiple sessions, allowing students to adapt their strategies based on results from previous phases.

For example, during a simulation cycle, the group representing local governments could propose a tourist tax to limit the number of tourists and finance sustainability projects, while tourism operators could oppose it, fearing they would lose customers. The game develops based on the decisions made and leads to a critical reflection on the consequences of each group's choices.

Simulation Structure

The simulation is divided into several phases:

1. **Introduction and briefing:** Presentation of the scenario and assignment of roles.
2. **Initial analysis:** Discussion on key issues of sustainable tourism.
3. **Game Phase:** Students make decisions based on dynamic scenarios.
4. **Feedback and evaluation:** Discussion of the strategies adopted and the consequences of the decisions.

Educational Impact and Added Value

The educational impact of simulation is significant. Students develop transversal skills such as problem-solving, decision-making, and negotiation. Furthermore, active learning through play stimulates motivation and involvement. The added value lies in the simulation's ability to bring out the complexity of sustainable tourism and in the possibility of experimenting with different approaches without real consequences.

References:

https://www.researchgate.net/publication/281446290_Exploring_Gamification_Techniques_and_Applications_for_Sustainable_Tourism

2.9 CASE STUDY 9 - INTEGRATING PROBLEM-BASED LEARNING IN SUSTAINABLE TOURISM EDUCATION AT THE UNIVERSITY OF THE AEGEAN

Methodology: Problem-Based Learning (PBL)

Possible topics and uses: Sustainable tourism development, environmental conservation, community engagement, curriculum design, and higher education pedagogy.

Reasons for selection: This case is a great example of how Problem-Based Learning (PBL) can be successfully incorporated into sustainable tourism education. It shows not only its impact and innovative approach but also its potential for application across different contexts. By immersing students in real-world problem-solving, PBL enriches their learning experience and equips them with the skills they need to tackle future challenges in the tourism industry.

Case description: The University of the Aegean in Greece has taken a leading role in incorporating Problem-Based Learning (PBL) into its sustainable tourism curriculum. With tourism constantly evolving and sustainability becoming more critical than ever, the university set out to equip students with practical skills and strong critical thinking abilities. To achieve this, PBL emerged as a highly effective approach.

In this learning model, students tackle real-world issues related to sustainable tourism. These range from environmental conservation efforts to the challenges of developing community-based tourism. Working in teams, they analyze the problems, uncover root

causes, and propose practical solutions. This method shifts the focus from traditional teacher-led instruction to a student-centered approach, encouraging active participation and independent learning.

One particularly impactful project involved students designing a sustainable tourism strategy for a local island struggling with environmental damage from over-tourism. As part of their research, they conducted field studies, interacted with residents, and consulted environmental experts. Their findings highlighted major concerns like waste management, water shortages, and the erosion of cultural heritage. To address these issues, students suggested eco-friendly waste-disposal systems, initiatives to promote tourism during the off-season, and cultural festivals to preserve local traditions.

Introducing PBL into the curriculum wasn't without its challenges. Some faculty members, accustomed to traditional lecturing, were hesitant to embrace the new approach. To ease the transition, the university organized workshops and training sessions to help educators understand and implement PBL effectively. Meanwhile, students initially found the open-ended nature of PBL problems difficult to navigate. However, with proper guidance, they adapted and came to appreciate the deeper learning experience it provided.

The impact of this shift has been profound. Students report feeling more engaged and better equipped to apply theoretical knowledge to real-world situations. They've also honed essential skills like critical thinking, teamwork, and problem-solving. At the same time, local communities have benefited from students' innovative solutions, strengthening ties between the university and the region.

This case study highlights how PBL can transform tourism education. By immersing students in real-world challenges, it not only enhances their academic experience but also prepares them to become proactive professionals committed to sustainable tourism. The success of this initiative at the University of the Aegean serves as a model for other institutions looking to modernize their curricula and promote sustainability in the tourism industry.

References:

- University of the Aegean. (2024). Integrating Problem-Based Learning in Sustainable Tourism Education. Retrieved from <https://www.aegean.gr/pbl-sustainable-tourism>



2.10 CASE STUDY 10 - IMPLEMENTING PROBLEM-BASED LEARNING IN ECOTOURISM TRAINING PROGRAMS IN CRETE

Methodology: Problem-Based Learning (PBL)

Possible topics and uses: Ecotourism, environmental interpretation, guide training, sustainable practices, vocational education.

Reasons for selection: This case showcases the innovative use of Problem-Based Learning (PBL) in vocational training for ecotourism, demonstrating its role in strengthening guides' skills and advancing sustainable tourism practices. Its success highlights the potential for applying this approach in other educational settings that prioritize hands-on learning to enhance practical expertise.

Case description: Crete, known for its stunning biodiversity and rich cultural heritage, has seen a growing need for more sustainable tourism practices. To address this, local educational institutions teamed up with environmental organizations to introduce Problem-Based Learning (PBL) into their ecotourism training programs. The goal was to better prepare ecotour guides to showcase the island's natural and cultural treasures while also promoting conservation efforts.

Through PBL, trainees were immersed in real-life situations they might face as ecotour guides. These ranged from managing visitor behavior in fragile ecosystems to creating eco-friendly tour packages and involving local communities in conservation initiatives. Working in teams, they analyzed these challenges, researched potential solutions, and developed actionable strategies.

One particularly impactful scenario involved protecting endangered sea turtles' nesting sites from disturbances by tourists. Trainees explored the ecological importance of these species, assessed the effects of human activity, and examined existing conservation measures. From there, they proposed solutions like establishing designated viewing areas, designing educational materials for tourists, and working with local authorities to enforce protective regulations.

Shifting to PBL wasn't without its challenges. Trainers had to move away from traditional teaching methods and adopt more facilitative role—guiding discussions and encouraging problem-solving without providing ready-made answers. To ease this transition, professional development workshops were held. Trainees also had to adjust to this more interactive, critical-thinking-driven approach, which some initially resisted but later embraced as they saw its benefits firsthand.

The impact of this shift has been significant. Trainees gained a deeper understanding of sustainable tourism and learned how to apply theoretical knowledge to real-world

situations. They developed stronger problem-solving and communication skills, making them more effective in their roles. As a result, the overall quality of ecotourism services improved, with guides becoming better equipped to educate tourists on conservation and promote responsible travel behaviors.

This case study highlights the power of PBL in vocational training for sustainable tourism. Engaging trainees in hands-on problem-solving fosters critical thinking, teamwork, and proactive decision-making. The success of this initiative in Crete serves as an inspiring example for other regions looking to enhance their ecotourism sectors while prioritizing sustainability.

References:

- Crete Ecotourism Institute. (2024). Problem-Based Learning in Ecotourism Training. Retrieved from <https://www.crete-ecotourism.org/pbl-training>

2.11 CASE STUDY 11 – SERVICE LEARNING APPLIED TO TOURISM AND MIGRATION

Methodology: Service Learning (SL)

Possible Topics and Uses: Social inclusion, intercultural communication, employability, hospitality education, sustainable tourism development, and Jesuit university pedagogy.

Reasons for Selection: This case offers an inspiring example of how Service Learning (SL) can be effectively integrated into tourism and hospitality education to foster students' social commitment, empathy, and civic responsibility. By combining academic learning with meaningful community service, students apply theoretical knowledge to real-world contexts involving migrants and social inclusion. The project exemplifies how Jesuit pedagogical principles—reflection, service, and justice—can be operationalized in tourism education to contribute to the United Nations Sustainable Development Goals (SDGs 4, 8, and 10): Quality Education, Decent Work and Economic Growth, and Reduced Inequalities.

Case Description: Tourism plays a crucial economic and social role in Spain and serves as a key entry point into the labor market. In Barcelona—a global tourism hub and migration destination—foreigners occupy dual roles: as tourists, participants in hospitality experiences, and as workers, contributors to a labor-intensive industry.

Within this context, Fundació Migra Studium, a Jesuit organization located in Barcelona's old town, works to promote the dignity and rights of migrants in vulnerable situations while raising awareness about cultural and religious diversity. In collaboration



with IQS, Universitat Ramon Llull, the foundation partnered with undergraduate tourism students through two Service Learning (SL) projects under a formal cooperation agreement.

These projects aim to connect academic learning with real social engagement, fostering mutual understanding between university students and the migrant community.

Project A: Cultural Outing (Subject: Analysis and Social Action)

Objective:

- **Service:** Organize cultural outings that help migrants and their families become familiar with Barcelona, integrate culturally, and enjoy accessible collective leisure.
- **Learning:** Enable students to understand the socio-cultural background of migrants, adapt tourism activities to their needs, and practice interpersonal and intercultural skills as guides and hosts of the city.

Development Phases:

1. **Orientation:** Students visit Fundació Migra Studium, receive a briefing from staff, and complete volunteer documentation.
2. **Needs Assessment:** Students survey potential participants about their familiarity with the city and preferences for cultural visits.
3. **Proposal Design:** Groups propose activity plans for approval based on cost, duration, interest, and accessibility.
4. **Preparation:** Students plan logistics and materials for the visit.
5. **Implementation:** Students guide the cultural outing, accompanying migrant participants along with Migra Studium volunteers.
6. **Evaluation:** Joint reflection and assessment of the experience with Migra Studium staff and participants.

Project B: CV Preparation (Subject: Interpersonal Communication)

Objective:

- **Service:** Assist migrants completing vocational training at Migra Studium in preparing Europass-format CVs, tailored for employment opportunities in the hospitality and services sectors (e.g., kitchen assistant, plumbing, customer service, caregiving).



- **Learning:** Apply interpersonal communication techniques to conduct structured interviews and translate participants' life histories and professional experiences into effective CVs.

Development Phases:

1. **Orientation:** Introduction at Fundació Migra Studium; formal registration as volunteers.
2. **Training:** Preparation workshop led by SL tutors and HR professors on CV design, employability skills, and hospitality sector profiles.
3. **Engagement:** Students conduct individual interviews with migrants to collect and organize information for the CV.
4. **Production and Delivery:** Draft CVs reviewed with SL tutors, validated by Migra Studium's Socio-Labor department, and finalized for use in employment placement initiatives.

Impact and Outcomes:

Both projects achieved meaningful reciprocal benefits:

- **For students:** Enhanced empathy, cross-cultural understanding, and communication skills through direct interaction with migrants; deeper appreciation of tourism's social dimension; and reinforced civic and ethical responsibility.
- **For migrants:** Practical tools for social and labor integration, increased self-confidence, and expanded networks for employability and cultural participation.
- **For the community:** Strengthened collaboration between academia and social organizations, fostering a shared commitment to inclusion and justice.

These initiatives demonstrate how Service-Learning transforms education by linking academic knowledge, community engagement, and social transformation. The collaboration between IQS – Universitat Ramon Llull and Fundació Migra Studium embodies the Jesuit educational vision of forming “professionals with conscience” who contribute actively to a more inclusive and humane society.



References:

Mellén i Vinagre, T., Pena Mardaras, C., Peralta Ramos, J., Sánchez Martín, M., & Torres Lucas, J. (2022). Aprendizaje-servicio (V. Hernández Franco & J. Ficapal Mestres, Eds.; E. M. Pérez Avellán, Associate Ed.). In Cuadernos de Pedagogía Ignaciana Universitaria (Project PE5). Universidad Pontificia Comillas. Retrieved from:
<https://drive.google.com/file/d/1xQi1QJoU3RlBiDqJE5Y10yBSeShmX3Dd/view>

2.12 CASE STUDY 12 - TOURISM FOR ALL: EDUCATING TO FOSTER ACCESSIBLE ACCOMMODATION.

Methodology: Design Thinking and Problem-Based Learning (PBL)

Possible Topics and Uses: Inclusive tourism education, accessible hospitality, social inclusion, sustainable tourism development, higher education pedagogy, and transformative learning.

Reasons for Selection: This study is an excellent example of how to effectively integrate Design Thinking and Problem-Based Learning (PBL) into tourism education to foster inclusive, socially responsible learning. It demonstrates how pedagogical innovation can influence students' attitudes, empathy, and agency toward social inclusion in hospitality. The mixed-method approach combines experiential, action-based learning and reflective self-regulation, providing a model that can be adapted to other educational and sustainability contexts.

Case Description: The case study, conducted at Universitat Ramon Llull in Spain, explores how students can be educated to foster accessible accommodation in the hospitality industry. The module, titled *Tourism for All*, was grounded in Transformative Learning Theory and applied Problem-Based Learning (PBL) and Design Thinking (DT) methodologies.

Students worked on a real-world challenge: improving accessibility for families with children on the autism spectrum at a local Marriott hotel. Through a human-centered design process, they empathized with families, defined accessibility challenges,



implemented creative solutions, prototyped service adaptations, and tested their proposals.

The findings revealed significant positive changes in students' attitudes toward people with disabilities. They developed greater empathy, critical reflexivity, and commitment to social inclusion. The study also demonstrated that combining experiential learning with reflection enhances student agency, preparing learners to become transformational leaders who advocate for accessible, sustainable tourism.

This case stands out because it connects education, innovation, and social responsibility. It illustrates that short, well-designed experiential modules can effectively shift students' values and attitudes toward inclusivity, an essential step toward achieving the UN Sustainable Development Goal 11 (SDG 11): *Make cities and human settlements inclusive, safe, resilient, and sustainable*.

References:

Freund, D., Iñesta, A., & Castelló, M. (2022). Tourism for all: Educating to foster accessible accommodation. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 30, 100370. <https://doi.org/10.1016/j.jhlste.2021.100370>