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Article

Learning Unit: "Tourism and Environment", dual, socioformative, and sustainable education for international tourism and environmental management

Unidad de Aprendizaje: "Turismo y medio ambiente", educación dual, socioformativa y sostenible para el turismo internacional y la gestión ambiental

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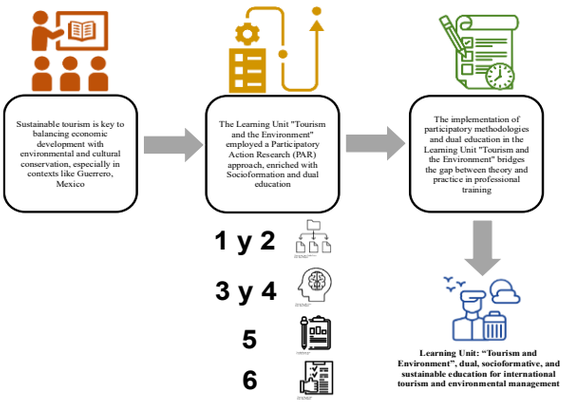
Abstract

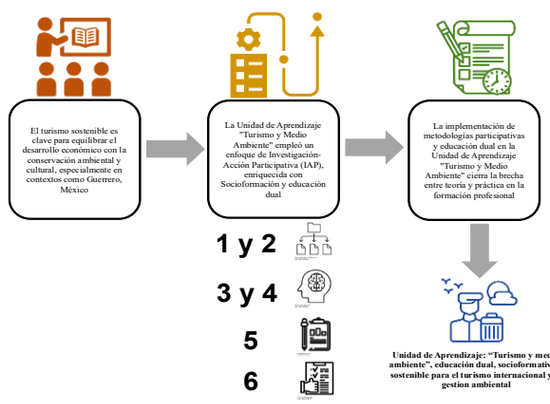
Sustainable tourism represents both a challenge and a key opportunity in professional training, especially where environmental management and economic development converge. This research focuses on the innovative design of the "Tourism and the Environment" Learning Unit, integrating socioformation and dual education to address the demands of sustainability in the tourism sector. Using a Participatory Action Research [PAR] methodology, an academic program was developed to bridge theory and practice, fostering technical, social, and ethical competencies essential for environmental management. Through workshops and training sessions, practice-oriented content was designed, focusing on regenerative tourism, applied technologies, and climate change. The participatory approach identified gaps in previous programs, leading to a design validated by educators. The conclusions emphasize that active and socioformative methodologies enhance learning relevance in local and global contexts, offering a replicable model to train professionals equipped to tackle the challenges of sustainable tourism.

Resumen

El turismo sostenible es un desafío y una oportunidad clave en la formación profesional, especialmente donde convergen la gestión ambiental y el desarrollo económico. Esta investigación aborda el diseño innovador de la Unidad de Aprendizaje "Turismo y Medio Ambiente", integrando socioformación y educación dual para responder a las demandas de sostenibilidad en el sector turístico. Con una metodología de Investigación-Acción Participativa [IAP], se desarrolló un programa académico que conecta teoría y práctica, formando competencias técnicas, sociales y éticas esenciales para la gestión ambiental. Mediante talleres y capacitaciones, se diseñaron contenidos prácticos enfocados en turismo regenerativo, tecnologías aplicadas y cambio climático. El enfoque participativo identificó vacíos en programas previos, resultando en un diseño validado por docentes. Las conclusiones subrayan que las metodologías activas y socioformativas fortalecen el aprendizaje en contextos locales y globales, ofreciendo un modelo replicable para formar profesionales preparados para los retos del turismo sostenible.



Dual education for sustainable tourism management, environmental management in tourism development, sustainable tourism practices in education



Educación dual para la gestion del turismo sostenible, gestion ambiental en el desarrollo turístico, prácticas de turismo sostenible en la educación

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Introduction

Sustainable tourism has become a crucial component on the global agenda due to its potential to balance economic development with environmental and cultural preservation. In countries like Mexico, which boasts a vast wealth of natural resources, responsible tourism management is fundamental to ensure that these resources are maintained for future generations. According to the World Tourism Organization [WTO, 2022], sustainable tourism seeks to reduce negative impacts on the environment and local communities, fostering a development model that respects ecological limits.

The importance of this topic lies in the growing pressure on natural resources due to the increase in mass tourism [Niño-Gutiérrez et al., 2023], especially in coastal destinations and protected areas. Such is the case in Mexico, where regions like the Riviera Maya and Acapulco face significant challenges related to environmental degradation caused by unregulated tourist development [Rodríguez-Robayo & Berkes, 2020]. This scenario has created an urgent need to implement environmental management strategies that guarantee the conservation of the country's natural heritage, as well as the long-term sustainability of its tourism industry.

The central problem lies in the disconnect between tourism management academic programs and the specific needs of Latin America, resulting in insufficient training to address the environmental and cultural challenges of tourism in the region. Although there are robust theoretical frameworks, such as sustainable tourism and territorial planning, and participatory methodologies like socioformation, the lack of integration of these approaches into educational programs limits the ability of future professionals to manage tourism responsibly.

This issue is further exacerbated by the lack of studies that adapt didactic planning to local realities, creating a gap in the development of competencies relevant to the Latin American context. This mismatch not only affects the quality of professional training but also limits the capacity of communities and organizations to implement sustainable tourism models that protect the region's natural and cultural heritage.

The context of this issue is framed by the General Tourism Law and the General Law of Ecological Balance and Environmental Protection [DOF, 2024], which provide the legal framework for tourism planning in Mexico. These laws establish the foundations for the conservation of natural and cultural heritage through proper territorial planning and the rational use of resources. However, the challenge lies in the effective implementation of these regulations, which has led to a series of environmental problems, ranging from water pollution to biodiversity loss in areas of significant tourist interest [García-Cruz & Gutiérrez, 2021].

Parallel to this, dual university education officially began in Germany in 1969 with the enactment of the Federal Vocational Training Act. In 2009, Mexico's National Council for Professional Technical Education [CONALEP] established a cooperation agreement with Germany's Federal Institute for Vocational Education and Training [BIBB].

In 2016, Switzerland advanced dual education through the State Secretariat for Education, Research, and Innovation [SERI], launching the "Swiss Alliance for Dual Education." In 2019, Mexico approved the new General Education Law, with Articles 44 and 45 referring to dual education with training both in schools and workplaces [SEP, 2019].

In 2022, the Secretarial Agreement Number 20/10/2022 came into effect, providing guidelines that conceptualize and define higher education options [SEP, 2024]. In 2024, the Autonomous University of Guerrero adopted this dual model through a pilot implementation in the Tourism Management and Mathematics Teaching degree programs. The essential elements of higher-level dual education in Mexico are expressed as follows: *a]* training plan, *b]* student-centred approach, *c]* teacher supervision, *d]* curricular impact, *e]* competency certification, *f]* necessary conditions in the economic unit, *g]* formalization of agreements, and *h]* theoretical-practical phases [timing].

The primary objective of this work is to document the content of the "Tourism and Environment" Learning Unit for the fifth semester of the Tourism Management Bachelor's Degree at the Autonomous University of Guerrero.

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This unit is a cornerstone of academic training for future tourism professionals, addressing the challenges and opportunities of integrating sustainable practices in destination management.

The analysis focuses on how students acquire the competencies necessary to understand and apply the principles of environmental sustainability in the tourism context, contributing to the development of a more responsible and environmentally conscious industry.

This work aims not only to present the curricular aspects of the unit but also to offer a critical reflection on its relevance and impact on students' comprehensive education amidst the growing demand for tourism strategies aligned with sustainable development principles.

Theoretical framework, innovation in higher education for sustainable tourism management, the focus of this theme lies in how universities are adapting their academic programs to train innovative professionals who are aware of the environmental challenges in the tourism sector. Emphasis is placed on the integration of socioformation and other emerging pedagogical approaches that promote the development of critical, creative, and adaptive competencies to address the challenges of sustainable tourism and dual education [Tobón, 2017; Ramírez-Montoya et al., 2022].

Innovation in analytical programs with a Theoretical-Practical [Dual] Approach, the development of analytical programs with a dual approach is fundamental for training professionals capable of addressing the dynamic challenges of the tourism sector. In the Tourism Management Bachelor's Degree at the Autonomous University of Guerrero [UAGro], this process of educational innovation responds not only to the need to update content and pedagogical approaches but also to the goal of training individuals with critical, creative, and adaptive skills that allow them to lead in a globalized and competitive environment.

The integration of technological tools, sustainable approaches, and the strengthening of digital competencies are some of the key aspects to ensure that graduates are prepared to face the challenges of 21st-century tourism.

According to Lozano-García & Tello-García [2022], innovative educational programs must adapt to current labour market demands, especially in sectors like tourism, which are constantly evolving due to social, environmental, and technological changes.

Context of higher education in Mexico, in Mexico, innovating academic programs has been a priority over the past decade, particularly in fields like tourism management, where the country is positioned as a globally significant destination. Recent reforms driven by the 21st Century Educational Model [SEP, 2021] have underscored the importance of competency-based education, flexible learning, and the use of digital technologies. These reforms aim to meet the demands of both national and international contexts, fostering the development of professionals who are not only technically skilled but also socially responsible and committed to sustainable development.

This approach seeks to address the demands of both national and international contexts by promoting the education of professionals who are not only technically competent but also responsible citizens committed to sustainable development. Ramírez-Montoya et al. [2022] emphasize that higher education in Mexico has started integrating pedagogical models that prioritize innovation and problem-solving—an essential shift to tackle global challenges in areas like tourism and sustainability.

In recent years, various studies have explored the relevance of analytical programs and the need to innovate methodologies in higher education, particularly in undergraduate programs. Research by Hernández-Mendoza & Solano-Cueto [2021] evaluated the impact of updating content and pedagogical approaches in university curricula in Mexico. Their findings concluded that, although efforts exist to adapt these programs to labour market demands and technological advancements, traditional models still dominate and fail to fully address the current challenges of the tourism sector.

Castellanos-Reyes [2022] has proposed the inclusion of new methodologies, such as project-based learning and gamification, to encourage active student participation and foster competencies better aligned with 21st-century needs.

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However, the adoption of these innovations has been slow, highlighting the need for a deeper transformation in didactic planning and the structure of educational programs. This lag demonstrates the urgency of integrating cutting-edge pedagogical strategies to ensure that graduates are equipped to face contemporary challenges in tourism and sustainability.

Despite these advancements, there is a notable lack of studies and publications analysing the innovation of analytical programs from a Latin American perspective that comprehends and values the region's cultural particularities. While the need to transform educational models has been widely discussed, few works address how these transformations should reflect the social, economic, and cultural realities of Latin America.

In this context, the experience of tourism management in regions like Guerrero, where social and economic challenges intertwine with cultural and natural wealth, underscores the urgency of incorporating educational approaches that consider these dynamics. Moreno-Villavicencio [2023] highlights that many models imported from Europe or North America fail to account for the unique dynamics of Latin American societies, resulting in educational programs that are not always relevant or effective for the regional context. This issue is further reflected in the dominance of academic literature on higher education innovation originating from foreign studies, emphasizing the need for approaches that integrate local worldviews, values, and needs. In contexts such as the Tourism Management Bachelor's Degree at the Autonomous University of Guerrero, these reflections are particularly relevant for designing educational programs that not only address the challenges of sustainable tourism but also empower students through comprehensive training that mirrors local realities and potential.

In this context, socioformation has gained traction as an emerging approach aimed at overcoming these limitations by integrating social and cultural aspects into professional training. According to Tobón [2017], this pedagogical model emphasizes solving social problems and developing comprehensive competencies, fostering a more contextualized learning experience aligned with the needs of the Latin American environment where dual education is implemented.

Despite its growing popularity, particularly in Mexico and other countries in the region, there are still few studies exploring how socioformation can transform didactic planning in universities.

While progress has been made in applying this model in some educational sectors, such as teacher training, its implementation in the renewal of analytical programs in fields like tourism management remains insufficiently documented. This represents a significant gap in the current literature that must be addressed to promote a meaningful transformation in higher education.

Methodology

I. *Work sessions in Acapulco [July 1–18, 2024*]. Three work sessions were conducted involving all faculty members of the Faculty of Tourism at UAGro.
II. *Formation of working groups*. Groups were formed with faculty members sharing similar expertise to structure specific Learning Units. For the "Tourism and Environment" Learning Unit [UAp], experts in related topics were invited.
III. *Training and learning unit design*. Faculty members participated in training sessions focused on designing multiple Learning Units.
IV. *Provision of base materials*. Materials such as the theoretical framework, regulatory guidelines, and examples of similar programs were provided to guide the process.
V. *Theoretical-practical approach synthesis.* A synthesis was created, highlighting the theoretical-practical approach in higher education for tourism.
VI. *Guided discusión.* A guided discussion identified strengths and weaknesses in the current curriculum.
VII. *Plan 2022 review*. Two in-person sessions were held to review the 2022 curriculum plan, followed by a virtual third session.
VIII. *Introduction to Dual Education principles*. An introduction to the principles of dual theoretical-practical education was provided to participants.
IX. *Practical workshops*. Two practical workshops were held to fill out the template for the Learning Unit program.

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X. *Key program components*. During the third session, participants worked on the key components of the program: objectives, competencies, content, and evaluation.

XI. *Standardized program template*. A completed template consolidating all information was provided in a standardized format.

XII. *Proposal sharing*. The "Tourism and Environment" Learning Unit program proposal was shared with educational authorities for feedback and approval.

Results

Focusing on the relationship between tourism and the environment, the literature review topics in the "Tourism and the Environment" Learning Unit address the interactions between tourism management and environmental sustainability, emphasizing recent and relevant trends in higher education and professional development [Niño-Castillo et al., 2020].

Sustainable tourism and natural heritage conservation: This theme highlights sustainable tourism management to protect natural resources [Niño-Gutiérrez, 2022], covering concepts such as ecotourism, biodiversity conservation, and protected area management [Gössling & Higham, 2020].

Higher education and sustainable tourism: This section analyzes innovative approaches in tourism professional training, emphasizing methodologies that promote sustainability, such as problem-based learning and situated learning [Hernández-Mendoza & Solano-Cueto, 2021].

Impact of tourism on local ecosystems: Studies reviewed explore the positive and negative effects of tourism on vulnerable ecosystems, focusing on risk management and the implementation of responsible practices [Rodríguez-Robayo & Berkes, 2020].

The Tourism Management Bachelor's curriculum sections reviewed include context, issues, needs, competencies, and graduate profiles. These are vital for addressing the eight sections of the program format, including: *i]* Learning Unit identification details [Table 1]; *ii]* Contribution to the graduate profile; *iii]* Competencies; *iv]* Pedagogical-didactic guidelines; *v]* Didactic sequences; *vi]* Learning resources; *vii]* Teacher competencies; and *viii]* Evaluation criteria for teacher competencies.

Box 1

Table 1

Identification of the Learning Unit

Code of the Learning Unit	
School [s]	
Faculty/ School/ Campus	Faculty of Tourism
Educational Program	Bachelor's Degree in Tourism Management
Knowledge Area of the Learning Unit within the Educational Program	Administration and Accounting
Modality	On-site ☐ Blended ☐ Distance Learning ☐
Stage of Training	ITS ☐ EFP-NFBAD ☐ EFP-NFPE ☒ EIyV ☐
Period	Annual ☐ Semestral Based ☒ Quarterly ☐
Type	Mandatory ☒ Elective ☐ Selective ☐
Prerequisite Learning Unit[s]	▪ Research Methodology ▪ Tourism Legislation ▪ Sustainability for Tourism Development Study of the Tourism Market
Required Previous Generic Competencies	▪ Information and Communication Technologies [ICT] ▪ Familiarity with the General Law of Ecological Balance and Environmental Protection Familiarity with the General Tourism Law
Number of credits	***6***

Source: own elaboration

Planning with real-time allocation based on the number of in-class and independent hours is crucial to ensuring meaningful and balanced learning for students. This approach effectively structures time for both direct instruction and autonomous activities, maximizing the impact of the educational process. Its importance can be outlined in the following aspects:

1. *Balance between theory and practice,* a design that accounts for in-class and independent hours ensures students can apply the concepts learned in the classroom through exercises, assignments, and projects outside of it. This approach helps students connect theory with practical experiences, consolidating their learning.

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2. *Promotion of autonomy,* proper planning of independent hours fosters the development of self-management skills essential for academic and professional performance. Activities such as content review, practical exercises, or project preparation encourage responsibility and critical thinking.

3. *Optimization of time,* a well-distributed schedule prevents task overload and ensures students have adequate time to delve deeper into topics. This also helps educators evaluate progress continuously, identifying potential difficulties in a timely manner.

4. *Development of key competencies,* appropriate hour distribution ensures sufficient time is dedicated to activities that reinforce technical, social, and ethical competencies. These competencies are developed through tasks that strengthen skills such as critical analysis, problem-solving, and independent research.

5. *Alignment with educational objectives*, real-time planning ensures that activities inside and outside the classroom align with course objectives, guaranteeing that students meet the program's expectations. This is particularly relevant in educational contexts requiring students to be prepared for real-world scenarios.

6. *More accurate evaluation,* by planning independent hours, educators can design more balanced evaluation strategies that reflect both classroom learning and students' autonomous efforts. This allows for a comprehensive measurement of academic performance. In conclusion, real-time planning not only optimizes the teaching-learning process but also ensures that students have a clear and organized structure to manage their time. This is indispensable in an educational model aimed at forming competent, autonomous professionals committed to their academic and personal development [Table 2].

Box 2

Table 2

Number of hours of the Learning Unit

Number of hours	Hours of student work under academic supervision	Hours of independents student work	Total hours
Per Week	***4***	***2***	***6***
Per Semester	***64***	***32***	***96***

Source: own elaboration

The Learning Unit "Tourism and Environment" is an essential component of the curriculum for the Tourism Management Bachelor's Degree at the Faculty of Tourism, Autonomous University of Guerrero, strategically positioned in the fifth semester of the educational program. Its inclusion addresses the need to train professionals capable of integrating principles of sustainability and environmental management into the development and administration of tourist destinations.

Within the context of a renewed educational plan, this unit tackles key topics such as the conservation of natural heritage, the mitigation of environmental impacts caused by tourism, and the implementation of regenerative practices in tourist destinations. Additionally, it aims to strengthen technical and social competencies, enabling students to lead sustainable tourism initiatives in both local and global settings.

Positioned at the core of the program, this unit acts as a bridge between the theoretical foundations acquired in previous semesters and the practical application needed to face contemporary challenges in the tourism sector. Through a theoretical-practical approach, supported by dual education and active methodologies, students are equipped with the tools to analyse, propose, and implement environmental management strategies that contribute to the sustainable development of tourist destinations.

In summary, "Tourism and Environment" not only reinforces the comprehensive vision of the educational program but also positions graduates as agents of change capable of meeting the demands of the labour market and the Sustainable Development Goals [Table 3].

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Box 3

Table 3

Learning Unit Competency

Knowledge	Skills	Attitudes and values
Recognizes and values Mexico's natural heritage	Reflects on the sustainable tourism use of natural resources based on the application of qualitative and quantitative techniques	
Identifies the steps for planning the environmental and tourism management of a natural resource	Develops a territorial tourism zoning plan	Responsibility and Social Inclusion
Identifies opportunities and proposes improvement actions in the sustainable tourism management of natural heritage	Designs a basic tourism-environmental management process for the sustainability of a tourism product based on a natural element	

Source: own elaboration

The Learning Unit "Tourism and Environment" aims to develop key competencies in students, divided into knowledge, skills, and attitudes-values. Regarding knowledge, students are expected to understand the principles of sustainability applied to tourism, identify the environmental impacts of tourism activities, and master the regulations related to environmental management.

Among the skills, the focus is on the ability to design sustainable strategies for tourist destinations, apply technological tools for environmental management, and conduct critical analyses of sustainable tourism cases. In terms of attitudes and values, the unit fosters a commitment to conserving natural heritage, social responsibility toward local communities, and professional ethics in implementing sustainable practices.

These competencies ensure comprehensive training, preparing students to lead in the tourism sector with a responsible and sustainable approach [Table 4].

Box 4

Table 4

Didactics Sequences

Competency Element	Sessions	Hours with the facilitator	Independent hours
Recognizes/relates the different processes of managing natural heritage resources	**8**	**16**	**8**
Builds a territorial tourism planning plan	**12**	**24**	**12**
Designs a basic tourism-environmental management process for the sustainability of a tourism product based on a natural element	**12**	**24**	**12**
Total	**32**	**64**	**32**

To achieve the Applied Didactic Competencies in the Learning Unit "Tourism and Environment," it is necessary for students and the facilitator to engage in the following:

A. Design of sustainable strategies: Students develop tourism management plans to minimize environmental impacts in local destinations.
B. Use of applied technologies: Students utilize digital tools, such as geographic information systems, to assess and monitor tourism resources.
C. Problem-solving: Students analyze real cases of environmental conflicts in tourist destinations and propose practical solutions.
D. Collaborative work: Students participate in multidisciplinary teams to develop regenerative tourism projects in local communities.
E. Critical analysis: Students evaluate public policies related to tourism sustainability and their impact on regional development.
F. Field practices: Students visit protected areas to identify environmental issues and design conservation proposals.

The most significant finding of the study lies in the feasibility and effectiveness of integrating a dual education model, based on participatory and socioformative methodologies, into higher education in tourism, specifically in the "Tourism and Environment" Learning Unit.

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This model bridges the gap between theory and practice by providing students with tools to address real challenges in the tourism sector, such as environmental sustainability and responsible destination management.

The study demonstrates that this approach not only increases student motivation and engagement but also strengthens key competencies, such as designing sustainable strategies, using applied technologies, and solving environmental problems. Moreover, it highlights the importance of adapting educational programs to both local and global realities, positioning graduates as agents of change capable of leading in a competitive labour market aligned with the Sustainable Development Goals [SDGs].

The main limitation of the study lies in the fact that the development of the dual education and socioformation program applied to the "Tourism and Environment" Learning Unit was carried out within a specific context, limited to the Faculty of Tourism at the Autonomous University of Guerrero. This specificity may restrict the generalization of the results to other educational institutions with different sociocultural, economic, or technological realities. Finally, the implementation of the model faces challenges related to technological infrastructure, resistance to change in certain academic sectors, and the need for greater engagement with stakeholders in the tourism sector—factors that could affect the full adoption of the model in other contexts.

A general suggestion for the dual and socioformative program of the "Tourism and Environment" Learning Unit is to strengthen strategic connections with the local and regional tourism sector, including partnerships with businesses, communities, and governmental organizations related to environmental management and sustainable tourism. Such connections would allow students to participate in real projects, gaining practical experience and enhancing their competencies in a professional environment.

Additionally, it is recommended to incorporate emerging technologies, such as geographic information systems, artificial intelligence, or big data analysis tools, to enable students to develop technological skills applicable to environmental management in tourist destinations.

Finally, implementing a continuous evaluation system would be valuable to measure the program's impact on students' training and its application in the professional field, ensuring its relevance and adaptability across different contexts.

Continuing this line of research is crucial to consolidating, expanding, and comprehensively evaluating the impact of the dual and socioformative educational model in the training of tourism professionals. The initial research offers promising results in terms of student motivation, acquisition of practical competencies, and bridging the gap between theory and practice; however, it is necessary to delve deeper into several key aspects:

- *Long-term evaluation*: Conducting longitudinal studies will allow for an analysis of how graduates apply the competencies acquired in real work contexts and whether these effectively contribute to sustainability in the tourism sector.
- *Adaptability to other contexts*: Investigating how this model can be implemented in different educational institutions with diverse sociocultural, economic, and technological realities will validate its versatility and encourage its broader adoption.
- *Integration of emerging technologies*: Research should explore how to incorporate tools such as artificial intelligence, big data, or augmented reality into the dual model framework, enhancing its relevance in an increasingly technologized tourism sector.
- *Collaboration with the productive sector*: Expanding partnerships with key stakeholders in tourism, such as companies and communities, will ensure that the model addresses real labor market needs and promotes sustainable solutions.
- *Sociocultural and environmental impact:* Assessing how this educational model contributes to the sustainable development of tourist destinations and strengthens students' social and environmental responsibility.

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Continuing this line of research will not only enrich academic literature on dual education and socioformation but also drive the development of professionals better prepared to lead the challenges of 21st-century tourism in a global and sustainable context.

Conclusions

The collaborative design and documentation of the "Tourism and Environment" Learning Unit program demonstrate that the implementation of participatory methodologies and dual education can bridge the gap between theory and practice in professional tourism training. Through structured meetings and focused training, faculty and experts identified weaknesses in existing programs and co-created an innovative proposal aligned with both local and global needs. This approach not only fosters the development of technical and social competencies in students but also promotes a more contextualized education that addresses the challenges of sustainability and environmental management in the tourism sector.

The methodology, based on Participatory Action Research [PAR], combined with systematization and validation techniques, ensured the relevance and applicability of the program designed for the "Tourism and Environment" Learning Unit. Results from the pilot implementation reveal a significant increase in student motivation and their ability to apply theoretical knowledge in real-world contexts. This model is not only replicable in other higher education institutions but also underscores the importance of integrating local perspectives and active methodologies to strengthen the connection between academia and the tourism industry. By doing so, it effectively addresses labour market demands and aligns with the objectives of sustainable development.

Declarations

Conflict of interest

The author of this article declares that there are no financial, personal, academic, or professional conflicts of interest that could have influenced the research, results, or interpretation of the data presented in this study. All procedures and analyses were conducted independently and objectively, without the influence of external entities that could compromise the integrity of the scientific work performed.

Author contribution

Niño-Gutiérrez, Naú Silverio: The author of this article has played an integral role in all phases of the research, from the conception and design of the study to the collection, analysis, and interpretation of the data. The combination of these contributions ensures that the work presented is not only a significant contribution to the field of tourism and environment but also a reflection of the author's commitment to rigorous research and the advancement of knowledge in this area.

Availability of data and materials

Availability of data: The collected data as well as supplementary materials accompanying the publication of this research are accesible to other users. Trough request to the author.

Availability of materials: The author specify that the materials are freely available for the users to use without any restrictions or conditioned associated with Access to them.

This means that the materials, such as data sets, or other resources, can be accessed and utilized by anyone interested in the research without requiring permission or facing any limitations.

This commitment to open Access promotes transparency, reproductibility, and collaboration in research, allowing others to verify findings, replicate experiments, or build upon the work without barriers.

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Abbreviations

PAR= Participatory Action Research
PBL= Project-Based Learning
UAGro= Autonomous University of Guerrero
WTO= World Tourism Organization

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Annex

Learning Unit: Tourism and the Environment

1. Identification of the Learning Unit

Code of the Learning Unit	

School [s]	
Faculty/ School/ Campus	Faculty of Tourism
Educational Program	Bachelor's Degree in Tourism Management
Knowledge Area of the Learning Unit within the Educational Program	Administration and Accounting
Modality	On-site ☐ Blended ☐ Distance Learning ☐

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Stage of Training[1]	ITS ☐ EFP-NFBAD ☐ EFP-NFPE ☒ EIyV ☐		
Period	Annual ☐ Semestral Based ☒ Quarterly ☐		
Type	Mandatory ☒ Elective ☐ Selective ☐		
Prerequisite Learning Unit[s]	▪ Research Methodology ▪ Tourism Legislation ▪ Sustainability for Tourism Development ▪ Study of the Tourism Market		
Required Previous Generic Competencies[2]	▪ Proficiency in Information and Communication Technologies [ICT] ▪ Familiarity with the General Law of Ecological Balance and Environmental Protection ▪ Familiarity with the General Tourism Law		
Number of credits:	*6*		
Number of hours	**Hours of student work under academic supervision**	**Hours of independents student work**	**Total hours**
Per Week	*4*	*2*	*6*
Per Semester	*64*	*32*	*96*
Prepared by	***Preparation Date***	***Modified by***	***Modification date***
Dr. Naú Silverio Niño-Gutiérrez	***July 16, 2022***	***Dr. Naú Silverio Niño-Gutiérrez***	***July 19, 2024***

Source: own elaboration

2. Contribution of the learning unit to the graduate profile

In the Learning Unit "Tourism and the Environment," which belongs to the Professional Training Stage within the Core of Specific Professional Training, it contributes to building skills for developing environmental management in sustainable tourism processes involving natural resources within public, private, and social organizations, aiming at achieving tourism sustainability and viability.

3. Learning Unit competency

Develop a tourism-environmental management plan based on the General Tourism Law and the General Law of Ecological Balance and Environmental Protection, aimed at enhancing the sustainable tourism use of natural heritage and management within public, private, and NGO organizations, with a focus on responsibility and social inclusion.

Knowledge	**Skills**	**Attitudes and values**
Recognizes and values Mexico's natural heritage	Reflects on the sustainable tourism use of natural resources based on the application of qualitative and quantitative techniques	Responsibility and Social Inclusion
Identifies the steps for planning the environmental and tourism management of a natural resource	Develops a territorial tourism zoning plan	
Identifies opportunities and proposes improvement actions in the sustainable tourism management of natural heritage	Designs a basic tourism-environmental management process for the sustainability of a tourism product based on a natural element	

The above will be developed based on the following integrative axes [thematic content]:

a. Introduction to Tourism-Environmental Management of natural heritage
b. Interpretation of the Territorial Tourism Zoning Model
c. Design of a Participatory Action Research Project in Sustainable Tourism-Environmental Contexts

4. Pedagogical-Didactic Guidelines

4.1 Pedagogical guidelines

Based on the pedagogical orientations and principles of the Educational Model of the Autonomous University of Guerrero, the educational process and the development of university students' competencies must be fostered through a comprehensive education. This approach should be student-centered, focused on learning, flexible, competency-based, relevant, innovative, and socially committed.

- The teacher serves as a facilitator of meaningful learning to develop competencies.

[1] **ITS**: Institutional Training Stage; **EFP-NFBAD**: Professional Training Stage-Core of Professional Training by Disciplinary Area; **EFP-NFPE**:Professional Training Stage-Core of Specific Professional Training; **EIyV**: Integration and Liaison Stage.

[2] Competencies Expected for the Student to Master in Order to Successfully Develop the learning Unit

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The professor must act as a facilitator of meaningful learning for the construction of competencies and to promote in students the development of critical thinking, skills, and values that enable them to act consistently with their context.

- The self-managed and proactive student.

The student is responsible for taking on a self-managed and proactive role in learning and developing their competencies. To achieve this, they must cultivate the three dimensions of knowledge: **knowing how to be**, **knowing how to know**, and **knowing how to do**, across various contexts of action, with an ethical mindset, sustainability, critical perspective, and respect.

4.2 Didactic guidelines

In alignment with the above, **the didactic orientations and strategies for implementing the learning, development, and assessment of competencies** in this learning unit must be carried out collaboratively by the teacher and the student through interconnected activities. That is, the training activities conducted by the student with the teacher and those carried out independently must integrate the three dimensions of knowledge that define competencies. This integration aims to ensure that the learning process extends beyond the educational context into the professional and workplace context, with an ethical approach.

- Learning activities and competency assessment

The learning, development, and competency assessment activities will be conducted based on a methodology centered on the student and their learning, rather than on teaching. Learning environments—whether face-to-face or virtual, group or individual—will be created to foster the development and investigative capacity of the participants.

Carrying out learning and assessment exercises: *systematic and well-argued presentations to the group of the evidence defined in the didactic sequences [essays, conceptual, cognitive, or mental maps, and the portfolio] for critical group and individual evaluation*

It is essential to implement processes of self-assessment, peer assessment, and hetero-assessment [facilitator's judgment]. Additionally, diagnostic and formative evaluations must be conducted.

Without losing sight of the relationship between **evaluation, accreditation, and grading,** the level of proficiency achieved in the development of the learning unit's competency will be expressed in a numerical grade.

The grade should be understood as the synthetic expression of the evaluation and the level of competency development in the learning unit.

5. Didactic sequences

Below is the summary of the didactic sequence that makes up the program:

Competency Element	Sessions	Hours with the facilitator	Independent hours	Total hours
Recognizes/relates the different processes of managing natural heritage resources	**8**	**16**	**8**	**24**
Builds a territorial tourism planning plan	**12**	**24**	**12**	**36**
Designs a basic tourism-environmental management process for the sustainability of a tourism product based on a natural element	**12**	**24**	**12**	**36**
Total	**32**	**64**	**32**	**96**

6. Learning resources

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7. Teacher's profile and competency

7.1 Profile

The teacher delivering the "Tourism and the Environment" learning unit should have the following:

- Bachelor's degree in Tourism, Geography, or Environmental Sciences
- Master's degree in Tourism, Geography, or Environmental Sciences
- Ph.D. in Tourism, Geography, or Environmental Sciences
- 3 years of professional experience in teaching and scientific research

7.2 Teaching competencies

1. Organizes their continuous professional development throughout their career.
2. Mastery and structuring of knowledge to facilitate meaningful learning xexperiences.
3. Plans the facilitation of learning processes based on a competency-based approach, situating these processes within disciplinary, curricular, and broad social contexts.
4. Effectively, creatively, innovatively, and appropriately applies learning processes in their institutional context.
5. Evaluates learning processes with a formative approach.
6. Creates environments that foster autonomous and collaborative learning.
7. Contributes to generating an environment that facilitates the healthy and holistic development of students.
8. Participates in continuous improvement projects at their school and supports institutional management.
9. Communicates ideas effectively.
10. Incorporates technological advancements into their practice and effectively manages information and communication technologies in their teaching.

8. Evaluation criterio for Teacher competencies

It is proposed to apply the institutional performance evaluation format for teachers.

9. Dual training plan

Performance	Job position	Theoretical knowledge	Learning strategy	Evaluation strategy

NOTE: See Section 2. Learning Unit Programs, related to the development of the UAp programs, in the book Implementation of EFI with the Competency-Based Approach [Methodological Guidelines], UAGro 2014.

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