Project-Based Learning for Student Success in Tourism and Gastronomy

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Abstract: Project-based learning (PBL) has become an increasingly relevant strategy for supporting student success in higher education, especially in programmes that value authentic, interdisciplinary, and practice-oriented learning. This article explores how PBL can contribute to student success through a set of projects developed in tourism- and gastronomy-related courses. The analysis focuses on the ways in which these projects supported the development of linguistic, technical, digital, and transversal competences in higher education contexts. The activities involved the organisation of an international gastronomic fair, the design of tourism- and gastronomy-based learning experiences, and the creation of pedagogical resources aimed at strengthening specialised vocabulary and communication skills. Across these experiences, PBL proved to be a student-centred approach that helped bridge theory and practice, while fostering teamwork, collaboration, critical thinking, creativity, and stronger engagement with meaningful tasks. The data also show that students gained a deeper understanding of course content, became more confident in applying knowledge in practical settings, and improved both oral and written communication. Further benefits included gains in digital skills, cultural awareness, motivation, and students' sense of preparedness for the labour market. At the same time, the projects exposed some of the practical challenges involved in implementing PBL, including time constraints, coordination across curricular units, and logistical demands. Overall, the article argues that PBL can be understood as a valuable institutional strategy for student success in twenty-first-century higher education, particularly in professionally oriented and interdisciplinary programmes.

Keywords: Project-Based Learning; Student Success; Higher Education; Tourism Education; Gastronomy; Foreign Languages

1. Introduction

Higher education is increasingly expected to foster disciplinary knowledge alongside communication, collaboration, creativity and the capacity to act in professional settings. These aims are particularly relevant to tourism and gastronomy, where students must communicate across languages and cultures, interpret food heritage and respond to practical organisational demands. In this article, student success refers to meaningful learning, engagement, skills development and perceived readiness for professional activity; it does not imply that academic progression or employment outcomes were directly measured.

Project-based learning offers a way to connect curricular learning with purposeful research and tangible outputs. Students research, plan, negotiate decisions, produce resources and communicate their work to audiences beyond the classroom. Its potential lies not simply in making teaching more active but in linking knowledge to accountable action. Research has associated PBL with engagement and academic outcomes, while stressing the importance of scaffolding, feedback and carefully designed tasks (Zen et al., 2022; Peng et al., 2022).

This study examines three complementary student activities developed in tourism- and gastronomy-related courses: the annual International Gastronomy Fair, with a different theme each academic year; the creation of materials to decorate and interpret the fair stands; and the preparation of an English-Portuguese-Spanish glossary with audio, focused on dishes presented at the fair. Although these activities belong to the same educational context, each requires distinct forms of inquiry, production and communication.

The research question is: How do these interconnected project-based activities create opportunities for student success in tourism and gastronomy higher education, and how do students perceive their contribution? The study combines documentary analysis of the pedagogical design with descriptive findings from student questionnaires to examine perceived benefits and implementation constraints. The results are interpreted as student perceptions rather than evidence of causal effects or objectively measured learning gains.

2. Literature Review

2.1 Student Success and Authentic Project-Based Learning

Recent reviews also highlight that the motivational benefits of active learning depend on sustained engagement, collaborative tasks and feedback (Costa and Reis, 2025), while a review of teacher support in higher education links engagement to students' motivation and learning environments (Prananto et al., 2025). A systematic

review of online PBL in teacher education identifies opportunities for professional learning alongside demands on staff support and technological resources (Uyen et al., 2023).

PBL is generally characterised by sustained work on a meaningful question or challenge, student autonomy, collaboration, feedback and a shareable product. In higher education, project work can provide opportunities to connect theoretical understanding with professional action. Studies of online PBL and scaffolding have examined its relationship with engagement and performance (Zen et al., 2022; Peng et al., 2022). However, project participation alone cannot establish learning gains: outcomes depend on the design of tasks, the quality of support and the evidence collected.

2.2 Language Learning, Multilingual Resources and Audience

A review of PBL applied to foreign languages learning links authentic tasks with language use, collaboration and confidence (Chao et al., 2025). More specifically, a tourism higher education study reports student-perceived benefits for specialised vocabulary, oral presentations and professional relevance, while also noting difficulties with language proficiency and project tasks (Rodríguez-Pallas and Montoya-Reyes, 2026). These findings support investigating the glossary and public presentations separately, rather than presuming equivalent learning effects.

Tourism and gastronomy students need to describe ingredients, dishes, culinary techniques and cultural meanings for diverse audiences. Preparing oral presentations can turn specialised vocabulary into purposeful communication. A trilingual glossary with audio further requires the selection of terminology, comparison of lexical equivalents and attention to pronunciation and accessibility. In this setting, multilingual production is both a learning process and a resource for the fair. Objective language gains would require direct assessment rather than relying solely on students' perceptions.

2.3 Creativity, Cultural Representation and Employability

Research on project-based experiential learning also connects authentic creative production with student engagement and collaborative skills (Hamidani et al., 2025). A review of PBL in undergraduate English language teaching underlines the importance of explicit assessment criteria, structured milestones and feedback, and cautions against assuming consistent outcomes across contexts (Sulistiyo et al., 2025).

The preparation of stand materials and the organisation of a public event require different but complementary competences. Visual design can make gastronomic research understandable and engaging, while event organisation involves logistics, teamwork, problem-solving and interaction with visitors. These are professionally relevant opportunities, but claims about employability must be distinguished from actual labour-market outcomes. Cultural representations also merit critical attention to accuracy, diversity and stereotyping.

2.4 Research Contribution

The distinctive contribution of the present study is to examine the relationship between the three student-produced outputs rather than presenting the fair, decoration and glossary as interchangeable activities. Their integration provides a useful lens for exploring how linguistic, cultural, organisational, creative and digital learning opportunities coexist within one PBL environment. Relevant earlier accounts of these teaching activities are acknowledged in the references and methods to ensure transparency without making previous publications the organising structure of the paper.

3. Methodology

3.1 Educational Setting and Project Design

The study examines project-based activities implemented in tourism- and gastronomy-related higher education courses. The International Gastronomy Fair is organised annually, with a different theme in each academic year. Students researched dishes, prepared their presentations, organised the event and engaged with the academic community. They also produced all decorative materials for the stands. In parallel, they created an audio-supported trilingual glossary (English, Portuguese and Spanish) connected to the dishes to be presented.

The activities were examined as interconnected strands of a single pedagogical experience, rather than independent experiments. Earlier publications describe the event and the glossary and, in some instances,

report questionnaire-based findings (Costa & Pérez Santos, 2024; Pérez Santos & Costa, 2024a, 2024b; Santos & Costa, 2024). The present article offers an integrated analysis across project strands and questionnaire administrations.

3.2 Study Design and Data Sources

This study adopts an exploratory, descriptive case-study design integrating documentary analysis of project activities with descriptive analysis of student questionnaire data. The dataset comprises the 2023 and 2024 International Gastronomy Fair questionnaires and a separate 2024 questionnaire on the trilingual audio glossary.

The analysed questionnaires yielded 14 valid responses to the 2023 International Gastronomy Fair questionnaire (17–20 July 2023) and 12 to the 2024 questionnaire (20 April–6 May 2024). A separate trilingual glossary questionnaire included 15 responses (3–7 May 2024). The International Gastronomy Fair questionnaires involved students enrolled in foreign-language curricular units related to catering and restaurant management, including English and Spanish. The 2023 dataset also included one enrolment in German II.

3.3 Questionnaire Instrument and Analysis

The questionnaire instruments differed in structure, response formats and thematic focus. The International Gastronomy Fair questionnaires combined questions on participants' background and prior familiarity with five-point Likert-type agreement items, ranging from "Strongly disagree" to "Strongly agree", and multiple-response questions addressing perceived benefits and implementation constraints. The glossary questionnaire included agreement items with response options ranging from "Disagree" to "Agree" and "Totally agree", including a neutral category, as well as open-ended questions.

Relatively to the International Gastronomy Fair questionnaires, item-level frequencies and percentages were calculated from the reported valid responses. Data from 2023 and 2024 were combined only for items described as having identical wording and equivalent response options. For agreement items, favourable responses combine "Agree" and "Strongly agree"; neutral and negative responses are shown separately.

3.4 Analytical Strategy and Limitations

The document analysis compared the three strands in terms of student tasks, outputs, intended competences and practical constraints. The questionnaire findings were then interpreted alongside those dimensions, with attention to language learning, teamwork, applying theory, engagement, digital competence and perceived professional relevance. Open-ended comments are used only illustratively; no formal qualitative coding or independent thematic analysis was undertaken. This distinction prevents conflating pedagogical opportunities, self-reported benefits and objectively verified outcomes.

As the questionnaires were analysed descriptively and responses could not be linked across the different activities, the findings are interpreted as student-reported perceptions rather than objective measures of learning outcomes. The results should therefore be considered in light of the study's exploratory design and the characteristics of the available questionnaire data.

4. Results and Discussion

4.1 The Three Project Outputs and Their Learning Demands

Table 1: Identifies the distinctive learning demands of each strand

Project Strand	Student Tasks	Potential Competence Opportunities
International Gastronomy Fair	Research dishes; prepare dishes to present to the community; organise the annual themed event; interact with the academic community	Gastronomic knowledge, oral communication, teamwork, event management
Stand materials	Research, design and prepare all materials decorating the fair stands	Visual communication, creativity, cultural interpretation, collaborative production

Trilingual glossary with audio	Develop dish-related terms in English, Portuguese and Spanish and prepare audio	Specialised vocabulary, translation choices, pronunciation awareness, digital production

These are opportunities afforded by the design, not measured learning outcomes. The different annual themes may have influenced the scope and difficulty of student work, a factor that should be considered when interpreting questionnaire results.

4.2 The International Gastronomy Fair: Learning Through Public Interaction

The International Gastronomy Fair moved student activity from research and preparation to a public-facing event. Students had to translate their knowledge of dishes into presentations and respond to the practical demands of organising an event for the academic community. This combination may support an understanding of gastronomy as a cultural and communicative practice rather than a set of isolated facts. Earlier descriptions identify practical constraints, including time, budget and kitchen equipment (Pérez Santos & Costa, 2024a).

4.3 Stand Decoration: Creative and Intercultural Communication

The preparation of stand materials provided students with opportunities to assume responsibility for the visual representation of dishes and culinary cultures, requiring them to make decisions regarding the selection, organisation and presentation of information. As a component involving the production of tangible artefacts, this activity constitutes a distinct learning task that complements oral presentations and warrants explicit consideration within the project's pedagogical design. However, the International Gastronomy Fair questionnaires did not assess stand decoration or visual design as separate learning outcomes. Although one respondent to the 2024 open-ended question suggested that the room decoration could have been more carefully prepared, this isolated observation should be interpreted as an individual perception rather than evidence of a broader pattern. Accordingly, the potential contribution of visual design to creativity and intercultural awareness can be identified as a pedagogical affordance of the project but cannot be established as an empirically demonstrated learning outcome on the basis of the available data.

4.4 The Trilingual Audio Glossary: Language Connected to Action

The English-Portuguese-Spanish glossary with audio is closely aligned with the dishes students were required to present. In the separate glossary questionnaire (n = 15), 13 respondents (86.7%) agreed or totally agreed that searching for terms motivated specialised vocabulary learning, and 14 (93.3%) reported that it supported vocabulary acquisition in a relaxed way. Thirteen (86.7%) considered audio helpful for pronunciation, and 14 (93.3%) considered it helpful for oral production. These findings describe perceptions rather than measured vocabulary retention or pronunciation improvement. Views about the digital platforms differed: 9 of 15 (60.0%) found Genially interesting, five were neutral and one disagreed; 14 of 15 (93.3%) considered Padlet useful for sharing glossaries and collaborative work.

4.5 Student Questionnaire Findings

The two Fair questionnaires yielded 26 valid responses in total (2023: n = 14; 2024: n = 12). Table 2 summarises selected items reported as equivalent across both years. Favourable responses combine "Agree" and "Strongly agree"; neutral and negative responses are retained separately. Percentages use the reported valid item denominator (n = 26). Pooling refers to response records across administrations and does not establish that these represent 26 distinct individuals.

Table 2: Descriptive distribution of selected International Gastronomy Fair questionnaire items, pooled across 2023 and 2024 (n=26 per item).

Questionnaire Dimension	Item (Abbreviated)	Valid n	Observed Distribution
Learning contribution	Interdisciplinary methodology contributed to my learning	26	Favourable 25 (96.2%); neutral 0; disagree 1 (3.8%)
Language	Developed competences in using foreign languages	26	Favourable 24 (92.3%); neutral 1 (3.8%); disagree 1 (3.8%)

Questionnaire Dimension	Item (Abbreviated)	Valid n	Observed Distribution
Teamwork	Developed teamwork competences	26	Favourable 23 (88.5%); neutral 3 (11.5%); disagree 0
Application of theory	Applied theoretical knowledge associated with the profession	26	Favourable 24 (92.3%); neutral 2 (7.7%); disagree 0
Communication	Developed oral communication competences	26	Favourable 20 (76.9%); neutral 6 (23.1%); disagree 0
Digital skills	Developed competences using digital tools	26	Favourable 21 (80.8%); neutral 4 (15.4%); disagree 1 (3.8%)
Event planning	Developed competences to organise and plan a gastronomic event	26	Favourable 21 (80.8%); neutral 5 (19.2%); disagree 0
Professional preparedness	Feel more prepared for the world of work	26	Favourable 19 (73.1%); neutral 7 (26.9%); disagree 0
Perceived employability	This experience will increase my employability	26	Favourable 19 (73.1%); neutral 6 (23.1%); disagree 1 (3.8%)

The most favourable Fair responses concerned the perceived contribution of the interdisciplinary methodology to learning (25/26; 96.2%), the application of theoretical knowledge (24/26; 92.3%) and foreign-language competence development (24/26; 92.3%). Teamwork was rated favourably by 23 respondents (88.5%), whereas oral communication received 20 favourable responses (76.9%) and six neutral responses. Perceived professional preparedness and perceived employability were less uniformly positive (19/26; 73.1% favourable for each). In a multiple-response benefits item, teamwork was selected 24 times, oral foreign-language development 22 times and written communication 15 times. Reported limitations included the €10 budget (14 selections), group work (12), foreign-language competence (9), kitchen equipment (8) and time (7); these categories were not mutually exclusive. Fifteen of 26 respondents (57.7%) rated the €10 budget for two dishes as “poorly adequate” or “insufficient” (2023: 8/14; 2024: 7/12). These findings should be read alongside previous reports of the educational activities, which may draw on overlapping respondent data.

4.6 Integrating Questionnaire Evidence with the Project Analysis

The International Gastronomy Fair survey addresses the interdisciplinary event as a whole and does not isolate the stand-material strand; the separate glossary questionnaire investigates vocabulary, imagery, audio and digital platforms.

Collectively, the results are consistent with the manuscript’s account of authentic project work as an opportunity to connect course content with communication, teamwork and practical production. The aforementioned data particularly support positive student perceptions of learning, language use, theory-to-practice links and collaboration, while showing that professional preparedness is less uniformly perceived and that resource constraints remain salient. The glossary questionnaire adds activity-specific evidence for perceived vocabulary and audio benefits, alongside more cautious responses about some digital tools.

4.7 Practical Challenges and Institutional Implications

The fair illustrates the resources needed for authentic PBL: coordination, time, equipment, financial support and structured management of group work. In the fair questionnaires, budget, teamwork and language demands recur as limitations; one 2024 comment also suggests improving the care given to room decoration. The glossary responses support retaining audio and collaborative sharing while providing clearer scaffolding for terminology and digital tools. A coherent institutional approach would set explicit learning outcomes for each strand, provide formative checkpoints, distribute responsibilities transparently, and assess both shared products and individual learning. These are implications of the observed design and perceptions, not experimentally tested effects.

5. Conclusions

The International Gastronomy Fair, the student-produced stand materials and the trilingual audio glossary offer related but analytically distinct opportunities for authentic learning. Among the 26 Fair questionnaire responses, favourable perceptions were particularly frequent regarding the contribution to learning (96.2%), application of theory (92.3%), foreign-language development (92.3%) and teamwork (88.5%). The separate glossary survey (n = 15) suggested perceived benefits of vocabulary activities and audio support, though satisfaction with digital tools varied. These are student perceptions and must not be interpreted as direct measures of competence improvement.

The results also identify limitations relevant to teaching design. Perceived preparedness and employability received less uniformly favourable ratings than the central learning items, and the Fair respondents frequently mentioned budget, group-work, language and equipment constraints. Although stand decoration may contribute to creative and intercultural learning, its outcomes were not directly isolated by the questionnaires. The findings therefore support differentiated guidance and evaluation for each project strand rather than assuming that all activities produce the same benefits.

The small, potentially overlapping respondent groups, unavailable response-rate denominators, unverified instrument validation and lack of objective pre/post measures constrain interpretation and generalisability. The descriptive results may also overlap with those presented in prior publications about the same initiatives; the contribution of this article lies primarily in examining the three outputs together. Future research should use validated measures, clearly documented sampling, activity-specific evaluation and direct assessments of learning and longer-term outcomes. Within these limits, the case illustrates the potential of carefully scaffolded PBL to connect disciplinary content with meaningful communication and professionally relevant tasks.

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Ethics Declaration

The authors state that ethics committee approval was not required for these educational questionnaire activities. Participant information, consent and data management procedures should be confirmed against the applicable institutional requirements before submission.

AI Declaration

In the preparation of this manuscript, AI-assisted tools were used to support the research and writing process. ChatGPT and Skywork supported language refinement and figure development; for this revision, Skywork was also used to aggregate descriptive frequencies from the supplied questionnaire spreadsheets and draft initial result interpretations. NotebookLM was used to assist with the organisation and synthesis of the literature reviewed. Grammarly was used to suggest improvements to grammar, spelling, punctuation and style.

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