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GIRLS PROJECT: GENERATION FOR INNOVATION, RESILIENCE, LEADERSHIP AND SUSTAINABILITY. THE GAME IS ON!

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ABSTRACT. The GIRLS project, “Generation for Innovation, Resilience, Leadership, and Sustainability. The Game is On!”, is a collaborative European initiative aimed at promoting inclusion, diversity, gender equality, digital transformation, and the Sustainable Development Goals. Designed as a game-based learning experience, the project applies the principle of “learning by playing” to higher education, where traditional lecture-based approaches remain predominant. By integrating active methodologies such as research-based learning, game-based learning, competency-based learning, and service learning, the project encourages both students and educators to engage in experiential learning, creativity, and leadership development. Structured as stages of gameplay, from “The Board” to “Game Over!”, the project transforms the learning process into an interactive and motivating experience, fostering innovation, sustainability awareness, and the adoption of modern pedagogical practices in higher education.

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1. INTRODUCTION

Erasmus+ KA220 Higher Education (KA220-HED) projects are part of Key Action 2 of the Erasmus+ programme and focus on international cooperation between universities and other institutions. Their main purpose is to foster innovation, quality, and modernization in higher education through the development of joint curricula, new teaching methodologies, digital tools, and strategies that promote inclusion, sustainability, and internationalization within the university sector.

These are co-funded projects by the European Union, which require the participation of a consortium with at least three organizations from three different Erasmus+ programme countries, and usually last between 12 and 36 months. EU support covers the management and implementation of activities, as well as the dissemination of results, making these projects a valuable

opportunity to strengthen academic cooperation while enhancing students' employability and skills.

Throughout a project, organizations are generally able to carry out a wide range of activities. From more traditional ones to more creative and innovative approaches, organizations have the flexibility to choose the best combination that contributes to achieving the project's objectives, in line with its scope and proportionate to the partnership's capacities. For example:

- Project management: activities necessary to ensure proper planning, implementation, and monitoring of the projects, including smooth and efficient collaboration among project partners. At this stage, activities usually involve organizational and administrative tasks, virtual meetings between partners, preparation of communication materials, preparation and follow-up of participants in activities, etc.
- Implementation activities: these may include networking events, meetings, and working sessions to exchange practices and develop results. They may also involve the participation of staff and learners, provided that their involvement contributes to the achievement of the project's objectives.
- Dissemination and promotion activities: organization of conferences, sessions, or events aimed at sharing, explaining, and promoting the project results, whether in the form of tangible outputs, findings, best practices, or any other format.

Each year, the European Commission sets the priorities and common objectives that the Erasmus+ programme must pursue across different fields of education, training, youth, and sport. Therefore, in addition to strengthening the capacities of the organizations involved in the project, cooperation partnerships aim to contribute through their results to the achievement of the Programme's priorities.

Accordingly, projects are required to structure their work around one or more of these priorities and to select them at the application stage. When designing project proposals, it is also recommended to review the results of previously funded projects based on similar priorities in order to ensure consistency and avoid duplication, as well as to progressively build on existing results and contribute to the joint development of the different fields. Useful information on funded projects can be found in the Erasmus+ Project Results Platform.

In addition, to better link European priorities with the specific needs at national level, Erasmus+ National Agencies may highlight one or more of these European priorities as particularly relevant in their national context, in order to encourage organizations to focus their contributions on the selected areas in a given year.

The main objective of cooperation partnerships is to enable organizations to increase the quality and relevance of their activities, expand and strengthen their network of partner organizations, and enhance their capacity to work together transnationally, thus fostering the internationalization of their activities. This also includes exchanging or developing new practices and methods, as well as sharing and confronting ideas. Their purpose is to support the development, transfer, or implementation of innovative practices, as well as the execution of joint initiatives that promote cooperation, peer learning, and the exchange of experiences at a European level. The results are expected to be reusable, transferable, scalable, and, whenever possible, to incorporate a strong interdisciplinary dimension.

The aim of cooperation partnerships is to improve the quality of the work, activities, and practices of the organizations and institutions involved, reaching out to new actors who are normally not included in a given sector; develop the capacity of organizations to work at a

transnational and cross-sectoral level; address common priorities and needs in the fields of education, training, youth, and sport; foster transformation and change (at an individual, sectoral, or organizational level), leading to improvements and new approaches in proportion to each organization's context.

2. CASE STUDY: GIRLS PROJECT

The partnership that has carried out this project is composed of the Universidad de Salamanca (Spain) as coordinator, the Polytechnic University of Coimbra (Portugal), the Universidad Francisco de Vitoria (Spain), the Spanish National Research Council (CSIC, Spain), the Technical University of Civil Engineering of Bucharest (Romania), the Spanish Network of Entities Against Leukemia and Blood Diseases (AELCLÉS, Spain), Maristas Champagnat School (Spain), and Universidad Vasco de Quiroga (Mexico).

The GIRLS project was proposed by these partner institutions as an initiative to promote key European values and priorities such as inclusion and diversity, equality, digital transformation, and the Sustainable Development Goals (SDG). The project, entitled “GIRLS – Generation for Innovation, Resilience, Leadership and Sustainability. The Game is on!”, was designed as a game, based on the idea that one of the most effective ways to learn is through practical experience. In this case, through play [4, 19, 23, 25].

The structure and stages of the projects were included as can be seen in Figure 1.



FIGURE 1. Stages of the GIRLS project, structured as a game.

While many educators already use innovative active methodologies to engage students in their learning, this approach is still not widely adopted in higher education, where traditional lecture-based teaching remains dominant. GIRLS seeks to address this gap by encouraging the use of active methodologies in higher education and involving more educators in their application. The project will focus on four specific approaches, inquiry-based learning (IBL), game-based learning (GBL), competence-based learning (CBL), and service-learning (SL), which will be integrated into several activities. The overall structure of the project followed the logic of a game, with work packages designed as stages such as “The Board”, “The Rules of the Game”, “The Match”, and “Game Over!”.

The term service-learning, which is one of the pedagogical approaches used in the GIRLS project, was first coined in 1967, but it was not until the 1990s that it became established in American higher education. In Europe, SL is a relatively new methodology, and it was only seven years ago that the first European international conference on this methodology in higher education was held.

The GIRLS Project represented a novel and challenging approach within the Erasmus+ framework. Through its activities, it aimed to support lifelong learning and contribute to the educational, professional, and personal development of individuals in the fields of education, training, and youth. In line with the objectives of the Programme, the project contributed to sustainable growth, quality employment, social cohesion, innovation, and the strengthening of both European identity and active citizenship, which the authors believe will endure in the HEI partner institutions.

The objectives proposed for this project were as follows:

- OB1. Provide training in digital skills and innovative pedagogies.
- OB2. Bring universities closer to society.
- OB3. Promote sustainable development in higher education.
- OB4. Foster individual and organizational transformation and change, leading to improvements, new approaches, and institutional development.

The following outcomes were expected:

- For OB1: University teachers within the consortium will be trained in digital skills and innovative pedagogies, and this training will be extended to other professors from different universities and educational levels, making all generated materials openly accessible.
- For OB2: Through projects with associations, outreach activities, and initiatives in disadvantaged communities in developing countries, the project will strengthen the connection between universities and society. This directly aligns with SDG 17, as partnerships and networks will be created, which are essential for implementing the 2030 United Nations Agenda (<https://sdgs.un.org/2030agenda>). Teachers, students, and organizations will collaborate closely in a learning process that transforms into community service.
- For OB3: The project will integrate the SDG into higher education by proposing activities and providing resources to make this integration possible across different disciplines.
- For OB4: The aim is for the pursuit of innovation, resilience, leadership, and sustainability to start at the individual level and extend to institutions and governments. The project also seeks to promote genuine gender equality, not merely through activities labeled as equality initiatives, but by integrating equality into all project activities. In fact, the majority of the teams involved in the partner organizations are women who are highly aware of this issue.

These objectives were directly related to the priority “Stimulating innovative learning and teaching practices”, as they seek the application of interdisciplinary approaches and innovative pedagogies, promote lifelong learning in higher education, facilitate credit acquisition and micro-credentials, and incorporate sustainable development as a central theme of the project. They are also linked to the priority “Addressing digital transformation through development of digital readiness, resilience and capacity”, aiming for the digital transformation of institutions, enhancing their capacity and readiness to manage the transition to digital education. The project included the development of digital pedagogy, the mastery of digital tools by teaching staff, and the innovative creation and use of digital educational content. Finally, they relate to the priority “Inclusion and diversity in all fields of education, training, youth and sport”, as the project promotes social inclusion and reaches individuals with fewer opportunities by creating inclusive environments that foster equity and equality and address the needs of the broader community.

One of the innovative aspects of the GIRLS project was that the project itself has been designed as a game, in which the work packages were structured around game elements: the board, the rules of the game, the match, and game over! The consortium when presenting this proposal intended, through this approach, to begin applying active methodologies not only in the project’s activities but also in the design of all tasks carried out during the project. Additionally, the project would provide digital tools to higher education members, following the “learning by doing” approach. Each tool used was properly documented, and all necessary materials are available to ensure mastery of its use.

Another innovative aspect was the inclusion of an entity from a non-participating Programme country. The participation of Universidad Vasco de Quiroga allowed the project to address social, digital, and educational innovation aspects in a different context. This partner also had experience in community work. In Mexico, they have established what are called *pasantías*, a year of social service that graduate students must complete to serve the community. In this way, they give back to society what it has provided them in the form of free university education. The inclusion of this partner added significant value to the project, as university students and staff were able to learn from service-learning projects and SDG-related initiatives already underway, as well as propose new ones from a perspective different from the European context, since these communities face realities not present in Europe.

Finally, it should be noted that the core focus of the project was on the SDG and women. No specific objective was set for these aspects, as they were addressed transversally and form the underlying framework throughout the entire project.

3. DISCUSSION

We have analyzed a total of 980 projects based on the results available on the Erasmus+ Project Results Platform of the European Union, filtering specifically for Strategic Partnerships in Higher Education and for the calls from 2022 to 2025. This platform allows users to download an Excel file containing detailed information for each project, including the programme, the key action, the type of action, the project identifier, title, summary, and selected topics, as well as the coordinating institution and participating partners. By examining this dataset, we were able to gain a comprehensive overview of recent trends, topics, priorities, and the distribution of partnerships across countries and institutions, providing valuable insights for designing future projects and aligning them with both Erasmus+ objectives and emerging educational needs in higher education.

4.1. OB1. Provide training in digital skills and innovative pedagogies. The GIRLS project operationalised OB1 through a series of mutually reinforcing interventions that embedded active, technology-enhanced practice into course design and delivery. Problem-based learning, which requires teamwork and entrepreneurship, demands that students apply and demonstrate digital competencies in authentic, collaborative tasks. This approach also involves structuring staff development around designing and facilitating such activities [21]. The strategic use of student response systems increased participation and enabled real-time, data-informed feedback cycles, making digital skills visible for both students and instructors [10]. Flipped-classroom designs shifted content acquisition to digital environments and repurposed contact time for guided application and peer instruction [5]. A complementary e-learning pathway curated resources and sequenced activities to sustain practice and monitoring of digital competencies over time [3]. Finally, a partner workshop on technology-enhanced mathematics education consolidated these pedagogical approaches across institutions and supported their transfer to additional modules and contexts [26]. Taken together, these components delivered the OB1 training agenda by combining training methods for staff with structured learning opportunities for students, resulting in aligned outputs (e.g., courses, manuals, and app-based artefacts) and outcomes (documented student digital skills attainment, partner uptake, and satisfaction). Across pilots, partners reported consistent use of the approaches above, with representative evidence including participation/attendance records, learning-platform analytics, and assessment artefacts (here we may insert some numbers we already have... for example, the number of trained staff, courses using PBL/flipped formats, pass rates, and satisfaction percentages). Based on this, and supported by the cited literature [3, 5, 10, 21, 26], we conclude that OB1 was achieved, with demonstrable training in digital competencies and adoption of innovative pedagogies across partner institutions.

4.2. OB2. Bring universities closer to society. The GIRLS project advanced OB2 by integrating service-learning and community-engaged practices within higher-education programmes and internationalisation activities, thereby establishing structured, bidirectional channels between academic work and societal needs; notably, incorporating service-learning into mobility and partnership initiatives demonstrably connected universities with communities and stakeholders beyond the campus, fostering co-creation, civic responsibility, and knowledge exchange [20, 22, 27]. Across the portfolio, curricular interventions and dissemination activities linked disciplinary inquiry to real-world problems and beneficiaries: case studies translating academic research into responses to community health priorities [1]; projects in mathematics education creating accessible learning tools for visually impaired individuals [30]; applications of operational research explicitly organised as community service to support evidence-informed decision-making in local settings [13]; and course-embedded service-learning systematically aligning learning outcomes with authentic community briefs [2, 18]. Complementary scholarly and professional forums, such as conference contributions that articulated the nexus between mathematics, engineering, and service to the community, amplified transfer and uptake across partners and contexts [16], while reflective analyses highlighted how service-learning fosters engagement, solidarity, and a sustained sense of social responsibility among participants [24]. Together, these elements demonstrate that the project did not merely “reach out” but operationalised

university-society linkages through co-designed activities, accessible outputs, and reciprocal partnerships; the resulting artefacts, practices, and documented community interactions substantiate that OB2 was achieved, with universities demonstrably closer to society through service-learning, socially purposeful research, inclusive resource design, and public-facing dissemination [1, 2, 12, 16, 18, 20, 22, 24, 27, 30].

4.3. OB3. Promote sustainable development in higher education. The GIRLS project advanced OB3 by integrating sustainability principles into teaching, research, and community engagement in higher education, using learning landscapes to support students' commitment to sustainable development and to normalise sustainability-focused decision-making in real academic settings [4]. At the core of the discipline, curriculum-based modelling of solar energy offered concrete, data-driven engagement with renewable solutions and their trade-offs, enabling students to link theoretical analysis with practical energy transitions [29]. The project also proved that education for the Sustainable Development Goals can be sustained and meaningfully progressed even under restricted or conflict-affected conditions, thereby enhancing resilience and continuity in SDG-aligned learning [9]. Complementing these efforts, a service-learning project on sustainable energy access connected institutional expertise to community needs, transforming curricular work into measurable social benefits and demonstrating the transfer of sustainability skills beyond the classroom [13]. These activities put sustainable development into practice within higher education by aligning pedagogy, research, and societal partnerships around SDG-related challenges; the outputs (e.g., learning resources and modelling artefacts) and outcomes (e.g., demonstrable student skills, documented community applications) confirm that OB3 was achieved, with sustainability embedded in both educational processes and practical application across partner institutions [4, 9, 13, 29].

4.4. OB4. Foster individual and organizational transformation and change, leading to improvements, new approaches, and institutional development. The GIRLS project advanced OB4 by organising capacity-building around innovation, resilience, leadership, and competence development, thereby linking personal growth with institutional renewal. Conference and dissemination activities explicitly fostered innovation and resilience as drivers of change at both the individual and organisational levels [17]. The project's design embedded these same drivers – innovation, resilience, and leadership – as core, cross-cutting aims that guide practice and policy towards sustainable improvement [14]. Complementary scholarly outputs position GIRLS within a broader change trajectory in higher education, demonstrating how competence development and internationalisation work together to enhance curricula, foster a quality culture, and promote institutional learning [28]. Additionally, the project, in particular, has initiated new approaches that support organisational development across partner contexts [11]. At the level of representation, mentoring and accompaniment programmes translated these aims into tangible developmental pathways, strengthening staff and student competencies, agency, and reflective practice, which are precursors to lasting transformation [7, 8]. Competency-focused academic environments further reinforced this shift by aligning recognition, dialogue, and dissemination around what graduates and educators can demonstrably do, catalysing programme redesign and organisational commitment to evidence-based improvement [15]. These features show that GIRLS did not merely propose change but also operationalised it through coordinated interventions, supportive structures, and shared standards; the resulting adaptations in practice, adoption of new pedagogical and managerial approaches, and documented improvements in programmes and partnerships confirm that OB4 was achieved, with

clear contributions to both individual capability development and organisational growth across institutions [7, 8, 11, 14, 15, 17, 28].

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