Developing Environmental Sustainability through Student Engagement:

A Case Study of Val de Loire Universities

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Abstract. Advancing environmental sustainability in higher education requires not only institutional commitment but also the development of key competences among students. Within this perspective, the European Commission's *GreenComp* framework provides a shared reference for sustainability learning, defining twelve competences across four areas of action. This study focuses on three of these (political agency, collective action, and individual initiative), examining how they are reflected in the strategies and practices of five French universities in the *Val de Loire* region. More precisely, it investigates to what extent institutional and student-led approaches within higher education contribute to the development of these competences. The findings reveal that while universities increasingly recognise their role in promoting sustainability, institutional support often remains limited by financial and human resource constraints. Student associations, despite their small number and fragile continuity, serve as important actors in cultivating engagement, collaboration, and ecological awareness within the university community. However, their participation rarely extends to decision-making processes, thereby limiting the development of political agency. Overall, the study highlights that fostering sustainability competences in higher education depends on stronger institutional backing and closer integration between institutional policies and student-led initiatives.

Keywords: Environmental Sustainability, Student Engagement, French Universities.

1 Introduction

Achieving sustainability, understood in this paper as prioritising the needs of all life forms and of the planet while ensuring that human activity remains within planetary boundaries (Bianchi et al., 2022, p. 12), requires not only technological innovation but also cultural, social, and behavioural transformation, particularly within institutions of higher education (Giovannini et al., 2020). As Bianchi et al. (2022, p. 25) highlight, individuals can collectively shape new paradigms for global sustainability through their personal initiatives, active engagement, and collaboration within their communities. Yet, such individual actions cannot emerge in isolation: they need to be nurtured by

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enabling contexts and supportive measures that are conceived by, with, and for both people and the planet (Bianchi et al., 2022, p. 10). This recognition has prompted experts to delineate the specific competences required to advance sustainability (Brundiers et al., 2021), which can be broadly defined as the capacity to embody sustainability values, engage with complex systems, and take or request action that restores and maintains ecosystem health while enhancing justice and envisioning sustainable futures (Bianchi et al., 2022, p. 12).

Among these initiatives is the European Commission's *GreenComp* framework, launched in 2022, which identifies twelve key competences structured around four interconnected areas. Moving beyond traditional academic knowledge, these competences highlight the importance of skills, attitudes, and values that are essential for personal fulfilment, active citizenship, and employability in the twenty-first century (Auzinger & Zarka, 2024, p. 3). One of the central areas of the framework, "acting for sustainability," which represents three of the twelve competences, encompasses political agency, understood as the capacity to navigate political systems and to demand effective sustainability policies; collective action, or the ability to collaborate with others in pursuit of change; and individual initiative, which entails recognising one's own potential for sustainability and actively contributing to improving the prospects of both the community and the planet (Bianchi et al., 2022, pp. 2, 15).

Building on these three competences, this paper focuses its analysis within the environment of universities, as they function simultaneously as learning environments and as lived spaces that shape future citizens. However, if sustainability competences exist and are applicable to higher education institutes such as universities (Brundiers et al., 2021), their implementation ultimately depends on the commitment of individual institutions and their leaders to act as drivers of change (Bianchi et al., 2022, p. 12). The urgency of this challenge is underscored by a 2022 public survey in which education and training were ranked by 71% of respondents as the most important sector for enabling action on environmental sustainability, surpassing public authorities (56%) and the media (34%) (European Commission, 2022, p. 13).

The central question, therefore, is how to effectively integrate these competences into the structures, practices, and cultures of higher education institutes. As Bianchi et al. (2022, pp. 12–13) emphasise, learning for environmental sustainability seeks to nurture a sustainability mindset across the lifespan. Learners are thereby equipped with the knowledge, skills, and attitudes necessary to become agents of change, capable of shaping sustainable futures within planetary boundaries through both individual and collective action. In this regard, it should be noted that the development of sustainability competences is not confined to formal education; non-formal and informal learning are equally recognised as vectors for fostering sustainability. In response to this imperative, universities have begun to implement specific teaching programmes (e.g., Engineers for Europe, n.d.). While this action is an important pathway for embedding sustainability competences in higher education (e.g., Tumbas et al., 2015; Lozano et al., 2019; Brundiers et al., 2021; Leal Filho, 2021; European Commission, 2022; Auzinger & Zarka, 2024), an equally valuable yet often less studied dimension concerns the role of students themselves in "acting for sustainability."

Sustainability education seeks not only to impart knowledge but also to enable learners to embrace sustainability in their daily lives as students (Bianchi et al., 2022, p. 13; Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation, 2022, p. 63). In this perspective, the university campus should be envisioned not merely as a backdrop for instruction, but as a physical space that can function as a hub for critical discourse and creative solutions to pressing societal challenges. Research (European Commission, 2022, pp. 69–70) has shown that institutions fostering active student participation are more effective in advancing education for environmental sustainability than those adopting a purely administrative, top-down approach, where students are viewed as passive recipients (Kelsey, 2003). Student agency cultivates a sense of ownership towards sustainability (Gayford, 2008), which is essential for motivating positive action. In this light, student-led sustainability projects have been found to challenge existing hierarchies and to enhance both engagement and tangible outcomes (Vare, 2021). The need to amplify student engagement in sustainability is also reflected in initiatives such as the *Green Office Movement* (Green Office Movement, n.d.), which promotes student-led, staff-supported sustainability offices as catalysts for institutional change. The strategies recommended by this movement –ranging from workshops and sustainability events to interfaculty competitions and summer schools– illustrate the diverse ways in which students can be mobilised as sustainability agents within their academic contexts.

For these reasons, the present research focuses specifically on student engagement (for a definition, see e.g. Duguet & Morlaix, 2023, p. 122) as a key entry point into the transformative agenda of sustainability in higher education. By examining the initiatives of students within a selection of French universities, it seeks to highlight their role in advancing environmental sustainability and to explore how they contribute to reimagining campus life for the future.

2 Research Design

The objective of this research is to investigate whether and how student engagement contributes to the advancement of three key competences identified in the *GreenComp* framework, namely, collective action, individual initiative, and political agency, within the context of French universities. Collective action is understood as collaboration between individuals to drive change, here through the joint efforts of faculty members and students. Individual initiative refers to the capacity of students to recognise their own potential for sustainability and to contribute actively to improving prospects for their community and the planet. Political agency, while often conceptualised at the level of Member States or the European Union, is extended here to the university context: it refers to the capacity to influence the collective future by mobilising decision-makers to act for change (Bianchi et al., 2022, p. 26). In this sense, the study examines whether and how students engage in advocacy for sustainability within their university structures, seeking to influence institutional priorities and decision-making processes.

This investigation is necessarily delimited in scope. Rather than encompassing all French universities, it focuses on a case study from the Val de Loire region. The choice

to concentrate on five universities –the University of Angers, which serves as the focal point given its role as the French representative within the EU GREEN alliance, alongside the Universities of Le Mans, Nantes, Orléans, and Tours– was guided by both methodological and practical considerations. Given the qualitative nature of the research, which relies on in-depth document analysis and semi-structured interviews, a limited number of cases allows for the collection of rich and detailed data while maintaining analytical depth. The objective is not statistical generalisation but rather to draw lessons from a set of diverse and contextually grounded case studies. Moreover, constraints of time and resources made it necessary to delimit the sample to a manageable number of institutions, while still ensuring sufficient variety to enable meaningful comparison.

The decision to focus on the Val de Loire region rather than selecting universities from different parts of France rests on several arguments. Concentrating on a single geographical area allows for the analysis of institutions operating under comparable socio-economic and policy environments, while still exhibiting diversity in their characteristics. The selected universities vary significantly in size, ranging from approximately 12,500 students at Le Mans (Université du Maine, n.d.) to nearly 42,000 at Nantes (Université de Nantes, n.d.), with intermediate profiles at Orléans (around 19,800) (Université d'Orléans, n.d.), Angers (around 27,500) (Université d'Angers, n.d.) and Tours (around 31,700). They are also heterogeneous in their spatial configurations, with campuses located in both urban and more peri-urban contexts: for instance, the University of Nantes is situated in a major metropolitan centre, while Le Mans and Orléans are medium-sized cities with more compact campuses, and the University of Tours is characterised by its multi-site structure spanning both urban and suburban zones. The University of Angers occupies an intermediate position, combining two urban campuses with a satellite site in a smaller town. Such variation provides an opportunity to examine whether local contexts shape the implementation and perception of sustainability initiatives.

Finally, all selected institutions are public universities, thereby sharing a similar governance and funding structure, in contrast with private higher education institutions that operate under distinct organisational models and financing mechanisms. This focus ensures comparability and coherence within the French public higher education framework. Nonetheless, it must be acknowledged that the findings derived from these five institutions may not be fully generalisable to all French universities; rather, they aim to illuminate patterns and dynamics that could inform broader reflection on sustainability practices in higher education.

Within each of these universities, the study combines institutional perspectives to understand official policies and support mechanisms, with student associations perspectives to capture practices and lived experiences. Interviews are conducted with university leadership (e.g. Vice-Presidents in charge of sustainability and campus life; or Directors of Student Affairs or Campus Life; or sustainability officers attached to the Sustainable Development department), as well as with leaders of student associations engaged in environmental initiatives. The analysis focuses on collective forms of student engagement rather than individual initiatives, as the latter were described by university leadership as marginal.

The inquiry is structured around a set of guiding themes designed to elicit insights into strategies, practices, and perceptions of sustainability. Both institutional and student representatives are invited to reflect on the university's sustainability strategy and its implementation, the forms of support provided to student initiatives, the extent to which the campus operates as a "living laboratory" for sustainability, the challenges or barriers faced, the channels of dialogue between students and administration, and the impact of student engagement on campus culture. These questions ensure comparability across respondents while allowing space for contextual nuance.

The analysis proceeds in two steps. The first step focuses on mapping the "actions" themselves, understood both as the forms of institutional support provided to students and as the concrete initiatives undertaken by student associations. This dual perspective makes it possible to assess the extent to which collective action, individual initiative, and, where relevant, political agency are effectively mobilised within the university context. The second step then examines the "results" of these actions, with particular attention to their perceived success or limitations. Success is understood here both in terms of perceptions -how actions are evaluated by institutional and student representatives, and in terms of observable outcomes, such as the implementation of projects or changes in campus practices. In doing so, the study seeks not only to capture the range of activities undertaken but also to evaluate their impact on advancing sustainability competences and reshaping the culture of the campus.

3 Research Method

The study employs a qualitative methodology that combines multiple sources of data in order to capture both institutional perspectives and student experiences. Data collection proceeded in three complementary stages. First, a short questionnaire was communicated in advance of the interviews, designed to gather preliminary information on sustainability strategies, student initiatives, and perceived challenges. The questionnaires were distributed between August and September 2025. Second, semi-structured interviews were conducted between September and October 2025, allowing for flexibility while ensuring comparability across respondents. This format made it possible to adapt the discussion to the profile and expertise of each participant, while also providing the depth required to explore perceptions, motivations, and lived experiences. Participation in both the questionnaires and interviews was entirely voluntary. In accordance with standard research ethics practices, personal information was anonymised to ensure the confidentiality of participants. Finally, document analysis was undertaken, focusing on a range of materials including university charters, sustainability and campus life reports, and institutional strategic plans.

More precisely, the questionnaire and interviews were designed to address both top-down perspectives from institutional leadership and bottom-up perspectives from student associations. The questions were organised around two core dimensions: the forms of support provided by universities and the initiatives emerging from students, as well as the perceived impact and limitations of these actions. For university leadership and

administration, the questionnaire and interviews explored the existence of official sustainability and campus life strategies or policy documents; the financial and logistical support available to student initiatives; the university's potential role as a "living laboratory" for sustainability through pilot projects and local partnerships; the infrastructure put in place to promote sustainable practices (such as recycling facilities, sustainable food provision, or energy-efficiency projects); the indicators employed to measure the impact of these initiatives; and the communication channels used to facilitate dialogue between students and the administration. For student associations, the questions addressed the history and scope of their activities, the challenges encountered, collaborations with institutional leaders or with external actors, and finally, their perception of the influence of their actions on campus culture. The content of the interviews largely mirrored the themes covered by the questionnaire, while allowing greater depth, nuance, and flexibility in responses.

4 Results

This section presents the empirical findings of the study, structured around the two main perspectives investigated: institutional actors and student associations. The analysis follows the research design, moving from a descriptive account of official strategies and support mechanisms to the lived experiences and initiatives of students.

4.1 Institutional Approach

The institutional approach is divided into two parts in order to present, first, the formal strategies and mechanisms developed by universities to promote sustainability, and second, their perceived effectiveness and outcomes as reported by institutional actors.

Institutional Strategies and Mechanisms. *Official sustainability strategies.* At the national level, sustainability in higher education is framed by the *Loi Grenelle I* (2009) and the *Accord de Grenoble* (2019), which encourage universities to integrate sustainable development and social responsibility into their institutional strategies. In 2023, the *Ministère de l'Enseignement Supérieur et de la Recherche* requested that all higher education institutions adopt a *Schéma Directeur Développement Durable et Responsabilité Sociale* (hereafter "SD DD&RS") by the end of 2024.

Within the Val de Loire region, the University of Le Mans adopted its SD DD&RS in December 2024, the University of Orléans followed in July 2025, and the University of Nantes in September 2025. The University of Tours adopted in 2024 an *Agenda Stratégique de Transformation Écologique et Sociale*, fulfilling the same function as a SD DD&RS. The Universities of Angers was still finalising its SD DD&RS, expected to be completed by 2026. These documents generally include objectives related to energy transition, biodiversity preservation, social equity, and education for sustainable development. In parallel, all universities have also adopted a *Schéma Directeur de la Vie Étudiante et de la Vie de Campus*, which is relevant to this study as it contains

operational measures concerning student engagement and support mechanisms for campus life initiatives.

Support for student initiatives. Two main funding instruments apply across all universities: the *Fonds de Solidarité et de Développement des Initiatives Étudiantes* ("FSDIE") and the *Contribution Vie Étudiante et de Campus* ("CVEC") (Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation, 2022, p. 64). The FSDIE supports associative projects contributing to campus life, while the CVEC may fund individual initiatives. For instance, in 2024, approximately 6% of projects funded by the FSDIE at Nantes University were linked to environmental sustainability (Université de Nantes, 2024, p. 19). Administrative support generally consists of guidance provided by university services to help students or associations prepare funding requests (FSDIE or CVEC) and implement their projects. Logistical support, when available, includes the loan of materials, access to rooms or outdoor spaces, and communication assistance. Certain institutions also offer additional mechanisms: for example, the University of Tours allocates an extra 10% funding bonus to projects promoting ecological transition, and the University of Le Mans plans to launch a participatory budget dedicated to sustainability initiatives.

Role of the university as a "living laboratory.". Several universities have developed campus projects integrating both research and student participation. The University of Angers and the University of Le Mans have implemented planting programmes on campus and eco-gardens designed to foster biodiversity and community engagement. The University of Le Mans has also carried out an inventory of the trees present on its main campus, while the University of Angers has undertaken a broad biodiversity inventory project involving students in data collection and analysis. The University of Orléans has launched a biodiversity trail designed by biology students in collaboration with researchers and local partners.

At Nantes University, the "*Lab Citoyen*" functions as a participatory platform designed to collect feedback from the university community. Since September 2025, its focus has shifted away from supporting individual or associative initiatives towards facilitating consultation processes, enabling students to express their expectations and contribute to shaping institutional priorities. Nantes University also participates in an European Universities Alliance for Well-Being ("EuniWell") through a dedicated sustainability work package. Within this framework, the "*My Green Community*" project mobilises student tutors across campuses to raise awareness of ecological transition issues and to gather insights into the effectiveness of existing engagement mechanisms. More broadly, Nantes University defines itself as a "living laboratory" within its governance framework, extending this approach beyond student engagement to collaboration with external stakeholders (for example, through initiatives such as the *Ouverture* project).

Channels of dialogue with students. Communication between institutions and students takes diverse forms, both digital and non-digital. Digital channels include institutional mailing lists, university websites, and social media accounts. Non-digital channels include participation in student representative bodies, the employment of student tutors acting as intermediaries between the administration and their peers, sustainability com-

mittees, and events such as thematic workshops or awareness days organised on campus, as well as the mobilisation of teaching and administrative staff within faculties to relay information or encourage participation.

Perceived Effectiveness and Outcomes. *Perceived effectiveness of policies.* Across the universities studied, integrating sustainability principles into strategic planning is widely recognised as a positive development, although perceptions of effectiveness vary. Governance structures and coordination between administrative units improve the implementation of initiatives, and sustainability objectives are often supported by measurable indicators (such as the number of awareness events organised annually, the surface area of vegetated zones, or the percentage of waste recycled). The development of strategic documents is considered important not only for formalising objectives but also for fostering collaboration across multiple university services and providing a reference framework to guide action. These frameworks help distribute responsibilities across different components of the university and establish a clear scope for addressing ecological transition. Overall, such strategies contribute to institutional coherence. However, evaluation tools tend to focus on activities rather than outcomes, capturing the extent of initiatives undertaken but rarely measuring behavioural or cultural changes among students and staff.

Observed changes on campus. Positive developments are visible across the region's universities. Most institutions report growing student ecological initiatives, such as zero-waste campaigns, eco-design workshops, or clean-walks. Universities have also made visible progress in transforming their physical environments: new green spaces have been created, waste-sorting facilities expanded, and sustainable mobility promoted through cycling infrastructure or electric shuttles. It is also interesting to note that collaborations between student associations and university services have led to lasting changes, such as the introduction of shared gardens.

Beyond infrastructure, several respondents highlighted the emergence of a stronger "sustainability culture" within the campus community. Environmental considerations are increasingly integrated into communication, teaching, and even student governance, as evidenced by the growing presence of sustainability topics in general assemblies or student-led events.

Challenges and barriers. Despite significant institutional progress, several persistent obstacles limit the full realisation of sustainability ambitions across the universities studied. A first challenge concerns limited financial resources, a constraint shared by all institutions given that the main funding sources (FSDIE and CVEC) are nationally regulated and therefore capped. This financial limitation restricts the scope of student initiatives and the number of projects that can be supported annually.

A second equally widespread issue lies in the shortage of human resources dedicated to sustainability. For example, at the Universities of Angers, Orléans, and Le Mans, sustainability officers often combine their duties with other administrative or teaching tasks. This situation reduces the capacity for continuous project monitoring and strategic coordination, resulting in initiatives that rely heavily on individual commitment rather than sustained institutional support.

Another recurring difficulty relates to administrative complexity. Organising events or initiatives on campus can be particularly time-consuming for students, who must navigate numerous internal procedures, obtain authorisations, and comply with safety requirements. While institutional staff primarily follow established protocols, these bureaucratic hurdles can discourage engagement, especially for student associations managed by volunteers with limited time and experience.

Furthermore, several respondents pointed to communication challenges within universities themselves. Services in charge of Campus Life and Sustainability often face difficulties in coordinating with administrative units at the faculty or department level. Collaboration tends to occur primarily with departments located in the same physical area while other faculties remain only marginally involved. This compartmentalisation limits the coherence and reach of university-wide sustainability actions.

Finally, engaging and maintaining student participation remains a major challenge across all institutions. Several factors contribute to this difficulty: (i) students are often overwhelmed by the volume of communications sent by university administrations, which makes sustainability-related messages less visible; (ii) participation tends to decline when no tangible reward or recognition is offered, or when activities take place during lunch breaks or after class hours; (iii) student association leaders do not always respond to faculty representatives or administrative contacts, which hinders continuity in collaboration; and (iv) the high turnover within student associations poses an additional challenge, as initiatives often lose momentum once their founding members graduate, making it difficult to ensure long-term continuity.

4.2 Student Associations Approach

This subsection examines the perspectives and activities of student associations engaged in environmental sustainability across the five universities studied. It is divided into two parts: the first outlines the main types of initiatives and forms of collaboration developed by student associations, while the second analyses their perceived outcomes and challenges.

Student Initiatives and Forms of Engagement. Across the five universities studied, only a small proportion of student associations are dedicated to environmental protection or sustainability: around 7% at Nantes (Université de Nantes, n.d.), 6% at Le Mans (Université du Maine, n.d.), 4% at Tours (Université de Tours, n.d.), 2% at Orléans (Université d'Orléans, n.d.), and none at Angers (Université d'Angers, n.d.). Several previously active associations, notably in Angers and in Orléans, have ceased activity. Only two associations from the University of Tours, and two from the University of Nantes agreed to participate in the interviews.

Student-led initiatives typically focus on community-based and environmental actions, combining social solidarity and ecological awareness. Examples include *Collectif Solidaire* and *Épicerie Solidaire* at Le Mans, which promote resource sharing, food access, and circular economy practices; *Les Paniers de Tours* and *L'Assolidaire Tourangelle*, which distribute affordable local and organic produce; and *Ecologos 37*, which links environmental law and geography students through awareness campaigns

and gardening workshops. At Nantes, *Vélocampus* promotes sustainable mobility through its bicycle loan and repair services, while *Campus Vert* organises a range of workshops and leads awareness-raising initiatives on waste reduction and responsible consumption.

Collaboration patterns remain uneven. Most partnerships occur at the local level, involving small businesses, producers, or local authorities. For instance, *L'Assolidaire Tourangelle* cooperates with local bakeries for its solidarity fridge, while *Campus Vert* collaborates with the cooperative *ToutenVélo* to support its bicycle repair and maintenance workshops. Cross-campus or interfaculty collaborations are limited, as activities tend to remain confined to specific fields or student communities. An exception, however, can be found at the University of Nantes, where the student association *CNEN* plans to implement joint environmental protection initiatives with other associations from different campuses, such as *Les Petits Pieds Nantais*. Moreover, *CNEN* is taking slowly over the management of the community garden located on another faculty campus, previously overseen by another association, which struggles to remain active due to a lack of members.

Perceived Positive Outcomes. The perceived impact of student-led initiatives on campus culture remains moderate but meaningful. In Tours, *L'Assolidaire Tourangelle* has succeeded in mobilising students through its clean walks and solidarity-based food projects. Participation rates have increased following targeted communication efforts, and demand for sustainable food options continues to grow. *Ecologos 37* has fostered sustainability awareness within specific programmes, particularly among students in environmental disciplines. In Nantes, the *CNEN* has successfully influenced university practices by persuading the administration to adopt a more sustainable approach to campus maintenance. Beginning in the 2025 academic year, the university has agreed to implement a selective mowing policy. Similarly, the association *Campus Vert* has contributed to enhancing campus life by introducing biodiversity-friendly actions, such as birdhouse cleaning and the planned installation of an insect hotel and bat nesting boxes. It has also implemented a composting system supported by the distribution of bio-buckets to facilitate the collection of organic waste, with increasing numbers of students requesting them for use at home, demonstrating genuine engagement with composting and waste reduction. Participation in *Campus Vert* workshops has grown steadily, reflecting rising student interest, while more students are choosing to travel to campus by bicycle, indicating heightened awareness of sustainable mobility. The association also takes pride in contributing to the ecological transformation of the campus, notably through the planting of trees and legumes within green spaces.

Perceived Challenges. Several recurrent challenges were identified. As mentioned, financial constraints affect all universities, as national funding mechanisms such as the FSDIE and the CVEC are limited and therefore highly competitive. Administrative complexity also discourages student engagement: organising events often involves numerous procedural steps, from room booking to compliance with safety regulations. In

addition, student representatives deplore the absence of training on the legal and procedural obligations required to manage a student association.

Finally, student engagement itself remains difficult to sustain. Students are often overwhelmed by the volume of institutional communication, reluctant to participate in activities without academic or symbolic reward. The associations *Campus Vert* and *Ecologos 37* specifically noted that participation is uneven across disciplines, with most active members coming from the founders' department despite efforts to attract students from other programmes. The diversity of academic schedules, alternating study periods, and variable timetables further complicates coordination, as meetings and workshops must often be held during short intervals such as the lunch break. These observations are supported by a 2024-2025 survey conducted among students at the University of Nantes, which found that 42% of respondents identified lack of available time as the main barrier to student engagement (Université de Nantes, 2025). Moreover, in many associations, leadership turnover disrupts continuity, as few successors are available once founders graduate.

5 Discussion

This study sought to explore whether and how student engagement contributes to the advancement of three key competences identified in the *GreenComp* framework (political agency, collective action, and individual initiative). The findings shed light on the dynamics between institutional strategies and student-led initiatives within the five universities studied, revealing both encouraging developments and persistent challenges.

5.1 Institutional Support and Resource Constraints Restricting Individual Initiative and Collective Action

Across the five universities studied, a broadly consistent pattern emerges regarding the nature and limits of institutional support for student engagement in sustainability. Student associations generally benefit from some degree of financial assistance, primarily through the FSDIE and the CVEC, supplemented in some cases by occasional logistical help from campus services. Beyond these mechanisms, however, support remains constrained. University units responsible for sustainability and campus life typically operate with limited staff and budgets, restricting their capacity to provide sustained guidance or to establish long-term partnerships with students. Despite these limitations, institutional support proves decisive in transforming intentions into concrete actions. Where administrative services actively facilitate collaboration (through mentorship, coordination between departments, or access to facilities), students are better able to mobilise collectively and bring their projects to success. By contrast, individual initiatives remain relatively limited across the universities studied, which may suggest that the absence of sustained institutional support reduces students' capacity to engage independently in sustainability-related actions. This raises a broader question as to whether institutional support for student engagement in sustainability (especially dedicated

staff), while currently dependent on institutional priorities rather than legal obligations, should be formally embedded within higher education governance frameworks.

This convergence across the five universities reflects a structural issue rather than a local one. It echoes the broader patterns identified in literature (European Commission, 2022, pp. 26-27). The European University Association's *Greening in European Higher Education Institutions* survey (European University Association, 2021) similarly identifies funding shortages as the most widespread challenge to advancing environmental sustainability in universities. As Leal Filho et al. (2021) emphasise, when environmental sustainability is not a strategic priority at the institutional or governmental level, the resulting financial gap constrains both internal implementation and access to external funding.

From the perspective of the *GreenComp* framework, this dynamic has direct implications for competence development. Institutional support acts as a catalyst for collective action and individual initiatives, enabling cooperation, coordination, and continuity across projects.

5.2 Communication and Collaboration Limiting Student Political Agency

Communication between institutional leadership and student associations appears to be one of the most persistent challenges observed across the universities studied. Despite the existence of formal channels (such as student representation bodies, sustainability and student life offices, as well as digital communication platforms), dialogue often remains fragmented. Administrative services dedicated to sustainability and campus life face difficulty coordinating with departmental administrative units, which results in information gaps and a lack of continuity in student initiatives. From the students' perspective, engagement is further constrained by communication overload, demanding academic schedules, and the perception that participation yields limited recognition or reward. Consequently, student associations tend to operate in short cycles, often dissolving when founding members graduate, resulting in forms of engagement that remain short-term and unstable, while students rarely exert a meaningful influence on institutional decision-making.

Among the universities examined, the University of Nantes stands out as an interesting exception, demonstrating a comparatively stronger approach to structured collaboration and participatory feedback. Initiatives such as participatory platforms and the mobilisation of student tutors reflect an institutional effort to formalise dialogue and facilitate bidirectional communication between students and administrative bodies. These mechanisms contribute to transforming communication into more substantive forms of participation. This relative success may be linked to the university's greater administrative capacity and resource base, which enable the development of such participatory infrastructure.

These structured approaches illustrate a shift from a predominantly top-down model of communication towards a more participatory governance framework, thereby fostering more sustained engagement. This evolution is particularly significant in relation to political agency, which depends on students having access to decision-making processes, being recognised as legitimate stakeholders, and being able to exert influence.

In the absence of these conditions, students remain participants rather than decision-makers, limiting their capacity to act as agents of change.

Beyond internal communication, partnerships between student associations and external stakeholders (such as local authorities or businesses) also emerge as a valuable complement to institutional support. These collaborations provide associations with additional resources and logistical assistance. They also contribute to strengthening sustainability beyond the university itself, by connecting campus initiatives with broader regional dynamics and encouraging the diffusion of sustainable practices between universities and local communities. In this sense, collaboration with external partners enhances both institutional sustainability and the wider territorial transition towards sustainability. The effectiveness of such partnerships underscores the importance of collaboration as a driver of successful sustainability initiatives.

This observation echoes the European Commission's emphasis on cross-sectoral cooperation between formal, non-formal, and informal education systems to strengthen sustainability competences (European Commission, 2022, pp. 81-82). The same framework identifies community engagement (through partnerships between universities and their local environments) as a transformative vector for aligning educational, social, and environmental goals, while also enhancing students' experiential learning and civic development.

Within the *GreenComp* framework, effective communication and collaboration directly contribute to the development of individual and collective action competences, as students learn to coordinate efforts and mobilise shared resources. Conversely, the persistent fragmentation of dialogue and limited feedback structures restrict opportunities to exercise political agency, as students remain largely excluded from decision-making. Strengthening institutional communication and external collaboration practices, therefore, is not merely a managerial necessity but an opportunity to deepen competence development across multiple dimensions of student engagement.

5.3 Student Involvement Revealing Uneven Sustainability Competences

The analysis reveals significant variations in the scope and depth of student engagement across the five universities studied, which in turn shape the development of *GreenComp* competences. Where collaboration between student associations, university administrations, or external partners is effective, engagement translates into concrete outcomes and meaningful learning experiences. In such cases, students not only practise *collective action* through teamwork and shared project management, but also develop *individual initiative* by assuming responsibility for the design and implementation of sustainability activities.

In Nantes, student associations have achieved tangible impacts on campus practices, including selective mowing, biodiversity measures, and composting. These outcomes reflect the emergence of *political agency*, as students are able, in certain instances, to influence institutional decisions and practices. This interaction between institutional facilitation and student agency illustrates the mutually reinforcing relationship between organisational support and competence development.

By contrast, in Tours, Le Mans, and Orléans, engagement remains uneven and often confined to specific disciplines. While motivated individuals or associations initiate valuable projects, their continuity is undermined by leadership turnover and the fragmented coordination of schedules and administrative procedures.

Angers presents a distinct case. The absence of formal sustainability governance structures has coincided with a complete lack of student engagement in environmental protection or related initiatives. This highlights how institutional framing and recognition are essential preconditions for engagement: without them, opportunities for developing any of the *GreenComp* competences remain largely unrealised.

Overall, these discrepancies suggest that student engagement in sustainability is not primarily determined by university size or the proportion of environmentally oriented associations –Nantes, the largest university, and Le Mans, the smallest, both count similar proportions of such associations (approximately 6-7 %). Rather, differences stem from the degree of institutional openness to participatory mechanisms and the existence of platforms that integrate student action into broader governance frameworks. In this sense, the advancement of *GreenComp* competences depends less on the scale of engagement than on the quality of interaction between students and their institutional environment.

6 Conclusion

To conclude, despite the abovementioned challenges, the initiatives observed demonstrate emerging competences aligned with the *GreenComp* framework: *collective action* through group projects and partnerships, *individual initiative* through the creation and maintenance of associations, and *political agency* through efforts to advocate for sustainability within the university structure. Though small in scale, these forms of engagement contribute to embedding sustainability values within campus culture and signal the potential of stronger student-institution collaboration in fostering ecological transition.

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