

Article

From Student Support to Transformative Education: Reinterpreting University Mentoring Through the Lens of Education for Sustainability

Marián Queiruga-Dios ¹, Susana García-Cardo ^{1,2}, Miguel Ángel Queiruga-Dios ³
and Araceli Queiruga-Dios ^{4,*}

¹ Accompaniment Institute, Universidad Francisco de Vitoria, 28223 Madrid, Spain; marian.queiruga@ufv.es (M.Q.-D.); s.garciacardo@ufv.es (S.G.-C.)

² PhD Programme Education in the Knowledge Society, Universidad de Salamanca, 37008 Salamanca, Spain

³ Department of Specific Didactics, Universidad de Burgos, 09001 Burgos, Spain; maqueiruga@ubu.es

⁴ Department of Applied Mathematics, Universidad de Salamanca, 37008 Salamanca, Spain

* Correspondence: queirugadios@usal.es

Abstract

Mentoring is widely recognized as a strategy for supporting students' academic and personal development, yet its role in the Education for Sustainability (EfS) remains poorly understood. Meanwhile, universities have expanded sustainability policies, governance structures, and curricular initiatives, although these institutional commitments do not necessarily translate into transformative educational experiences. This study introduces the Mentoring Readiness for Sustainability (MRS), a conceptual framework describing a university's capacity to align strategic commitment, organizational structures, educational practices, and relational culture so that mentoring can support EfS. This study combined conceptual framework development with documentary analysis of institutional sustainability evidence from 76 Spanish universities. Institutional indicators were interpreted through the proposed MRS framework to explore organizational configurations associated with sustainability-oriented mentoring. The findings reveal considerable variation in the institutionalization of sustainability, with strategic and structural dimensions generally more developed than educational integration. They also suggest that institutional sustainability should not be equated with institutional readiness to foster transformative mentoring. The study contributes a novel conceptual construct linking Education for Sustainability, higher education mentoring, and organizational readiness, providing a foundation for future research to operationalize and validate MRS and examine its relationship with student agency and transformative learning.

Keywords: Mentoring Readiness for Sustainability; Education for Sustainability; higher education; transformative learning; organizational readiness; institutional sustainability; academic mentoring



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1. Introduction

Higher education is increasingly expected to play a central role in responding to the interconnected environmental, social, and economic crises shaping contemporary society. Climate change, biodiversity loss, growing inequalities, and resource depletion have reinforced the view that universities should not only generate scientific knowledge but also prepare graduates capable of understanding complexity, making ethically informed

decisions, and contributing to sustainable societal transformation. Consequently, EfS has progressively evolved from a curriculum-centered initiative into a comprehensive institutional project that seeks to integrate sustainability across teaching, research, governance, and community engagement [1–3].

This evolution has produced an important conceptual shift. Early approaches largely focused on incorporating environmental content into university curricula, whereas more recent perspectives emphasize the development of agency, systems thinking, critical reflection, and competence for action as fundamental educational outcomes [4–6]. Sustainability is increasingly understood not as a body of knowledge to be transmitted but as a transformative educational process through which students learn to engage with uncertainty, negotiate competing values, and participate responsibly in addressing complex socio-ecological challenges [3,7].

Within this broader transformation, universities have substantially expanded their institutional commitment to sustainability. Strategic plans aligned with the Sustainable Development Goals (SDGs), dedicated sustainability offices, green campus initiatives, interdisciplinary research centers, and curricular reforms have become increasingly common across higher education systems [8,9]. Systematic reviews similarly document the growing integration of sustainability into university governance and educational policies, highlighting a gradual transition from environmental education toward institution-wide approaches to Education for Sustainability [10]. These developments represent significant progress in institutionalizing sustainability within higher education. Although universities have considerably strengthened their institutional commitment to sustainability, institutionalization should not be equated with educational transformation. Strategic plans, governance structures, sustainability offices, and SDG-related policies demonstrate organizational commitment but do not necessarily ensure that sustainability becomes part of students' lived educational experiences. Between institutional commitment and transformative student learning lies an organizational and pedagogical space that remains comparatively underexplored. Existing sustainability frameworks describe how universities organize sustainability, but they provide limited insight into the institutional conditions through which sustainability commitments become meaningful educational relationships. This conceptual gap constitutes the starting point of the present study.

Mentoring represents one possible relational mechanism through which institutional sustainability may become educationally meaningful for students. Importantly, mentoring is not assumed to produce sustainability outcomes on its own. Rather, its educational potential depends on the organizational conditions under which mentoring is embedded within the institution. Traditionally, mentoring in higher education has been associated with student transition, academic integration, psychosocial support, persistence, and professional development [11–13]. Comprehensive reviews have consistently described mentoring as a developmental relationship supporting students' academic success, psychosocial adjustment, and personal growth [11,12]. More recent studies have expanded this perspective by demonstrating that mentoring promotes reflective learning, identity formation, employability, and students' capacity to navigate increasingly complex academic and professional environments [13,14]. Comparative studies conducted in Spanish universities further show that mentoring programs have evolved from isolated support initiatives toward broader institutional systems of student accompaniment [15].

Mentoring is not the only relational educational practice capable of supporting Education for Sustainability. Tutoring, academic advising, coaching and communities of practice may also contribute to students' development. However, mentoring is distinguished by its sustained developmental orientation, reciprocal dialogue, identity formation, ethical reflection and promotion of student agency over time [13]. These characteristics align particularly

closely with the transformative aspirations of Education for Sustainability, which extend beyond knowledge acquisition towards reflection, responsibility and competence for action. For this reason, mentoring is conceptualized here as the focal relational mechanism through which institutional sustainability commitments may become educationally meaningful.

Despite this growing body of research, mentoring has rarely been examined from the perspective of Education for Sustainability. Most studies continue to conceptualize mentoring as an intervention aimed at improving academic performance, student well-being, or retention rather than as a pedagogical mechanism capable of fostering sustainability competencies, ethical reasoning, and transformative agency. Conversely, research on EfS has paid relatively little attention to mentoring as one of the relational processes through which institutional sustainability commitments may become educationally meaningful. These two research traditions have therefore developed largely in parallel, despite sharing a common concern with student development, institutional transformation, and long-term societal impact.

This separation reveals a deeper conceptual limitation than the simple absence of mentoring within Education for Sustainability frameworks. Existing sustainability models primarily describe institutional arrangements, whereas mentoring research focuses on interpersonal educational processes. These perspectives operate at different analytical levels. Consequently, the literature currently lacks a framework capable of explaining how institutional arrangements create the organizational conditions under which mentoring may contribute to transformative sustainability education. The missing element is therefore not mentoring itself, but institutional readiness for sustainability-oriented mentoring.

This study argues that such a framework is necessary. Sustainability cannot be understood exclusively as a matter of institutional governance, nor mentoring solely as an interpersonal educational relationship. Accordingly, this paper does not propose mentoring as an additional dimension of institutional sustainability. Instead, it introduces the Mentoring Readiness for Sustainability (MRS) as an emergent institutional capability describing the extent to which existing strategic, structural, and educational arrangements create favorable organizational conditions for sustainability-oriented mentoring. In this sense, MRS operates at a different analytical level from institutional sustainability itself: rather than describing what universities have implemented, it describes their organizational readiness to mobilize mentoring as a mechanism for Education for Sustainability.

To address this gap, this paper introduces MRS, defined as the institutional capacity of a university to align its strategic commitment, organizational structures, educational practices, and relational culture so that mentoring can function as a mechanism for Education for Sustainability. Rather than measuring mentoring quality or institutional sustainability independently, the MRS captures the organizational readiness required for mentoring to contribute to transformative sustainability education.

The empirical analysis does not seek to validate MRS or establish causal relationships between institutional sustainability and mentoring practices. Rather, it explores whether observable institutional evidence can be systematically interpreted through the proposed conceptual framework, thereby providing an initial empirical approximation to the construct.

The current paper makes three principal contributions. First, it introduces MRS as a new institutional construct that connects the existing publications on mentoring, EfS, and organizational readiness. Second, it proposes a conceptual model hypothesizing how institutional sustainability may create organizational conditions conducive to sustainability-oriented mentoring. Third, it offers a first empirical approximation of the construct using institutional evidence from Spanish universities, laying the foundations for future operationalization and validation.

Accordingly, this study should be interpreted as theory-building research. Its primary objective is to develop and illustrate a new conceptual framework rather than to test causal relationships between institutional sustainability and mentoring outcomes, addressing the following research questions:

RQ1. To what extent do Spanish universities exhibit institutional conditions consistent with the Mentoring Readiness for Sustainability?

RQ2. Which observable institutional domains are most strongly represented in current institutional sustainability initiatives?

RQ3. How can the Mentoring Readiness for Sustainability contribute to understanding the relationship between institutional sustainability and transformative Education for Sustainability?

2. Mentoring Readiness for Sustainability: Towards a New Institutional Framework

2.1. *Why Existing Sustainability Frameworks Do Not Explain Mentoring*

Over the past decade, EfS has evolved from approaches primarily concerned with environmental awareness and the incorporation of sustainability-related content into university curricula towards a broader educational paradigm aimed at preparing graduates capable of addressing complex socio-ecological challenges. Contemporary perspectives emphasize that higher education should foster systems thinking, ethical reasoning, critical reflection, collective responsibility, and competence for action rather than simply transmitting sustainability knowledge [1,2,6]. Consequently, sustainability is increasingly understood as a transformative educational process requiring changes not only in curricula but also in institutional culture and educational practice.

This evolution has also modified the way institutional sustainability is conceptualized. Contemporary frameworks adopt whole-institution approaches in which sustainability is embedded across governance, strategic planning, teaching, research, campus management, and community engagement [8,9]. Several studies have documented substantial progress in this direction, particularly through the adoption of sustainability strategies, sustainability offices, interdisciplinary initiatives, SDG implementation plans, dedicated organizational structures, and curricular reforms [9,10]. These developments have significantly strengthened universities' institutional commitment to sustainability.

However, an important conceptual gap remains. Most existing frameworks successfully describe universities' conduct: sustainability policies, governance arrangements, environmental management, and curriculum. They pay considerably less attention to how these institutional commitments become meaningful educational experiences. Consequently, institutional sustainability should not be equated with the institutional capability required to translate sustainability commitments into relational educational practices. Organizational readiness theory offers a complementary perspective by emphasizing the collective capability of institutions to implement change successfully rather than merely describing their organizational structures.

These two perspectives are complementary rather than competing. Institutional sustainability frameworks explain what universities have implemented in support of sustainability, whereas organizational readiness explains whether organizations possess the collective capacity to translate these institutional arrangements into new forms of educational practice. Neither perspective, however, explicitly addresses how sustainability commitments become embedded within the relational educational processes through which students construct meaning, develop agency, and engage critically with sustainability challenges.

Organizational readiness theory provides two complementary ideas that are particularly relevant for the present framework: collective commitment to implementing institutional change and collective capability to enact that change successfully. MRS adopts this emphasis on institutional capability but applies it to a different object of analysis. Whereas organizational readiness theory addresses preparedness for organizational change in general, MRS focuses specifically on the institutional capability required to translate sustainability commitments into relational educational practices through mentoring. Consequently, MRS should not be understood as a general readiness construct but as a domain-specific organizational capability situated within Education for Sustainability.

Mentoring represents one relational educational process through which sustainability commitments may become educationally meaningful. A substantial body of the literature shows that mentoring contributes to academic integration, reflective learning, professional identity and student agency [11–15]. Nevertheless, mentoring has been interpreted predominantly as a mechanism for improving student success, whereas Education for Sustainability research has concentrated mainly on curriculum redesign, governance, service-learning and sustainability competencies [9,16,17]. Consequently, the literature still lacks a framework capable of explaining how institutional sustainability arrangements create organizational conditions under which mentoring may contribute to transformative Education for Sustainability. It is precisely this conceptual space that the present study seeks to address.

This separation reveals a deeper conceptual limitation than the simple absence of mentoring within Education for Sustainability frameworks. Institutional sustainability and mentoring operate at different analytical levels. The former describes institutional arrangements, whereas the latter concerns relational educational practice. What remains largely unexplored is the organizational capability through which institutional sustainability arrangements create favorable conditions for mentoring to become an educational mechanism supporting transformative Education for Sustainability. It is precisely this conceptual space that the present study seeks to address.

2.2. *Mentoring Readiness for Sustainability: A New Institutional Construct*

To address this conceptual gap, this study introduces the Mentoring Readiness for Sustainability model. MRS is defined as the institutional capacity of a university to align its strategic commitment, organizational structures, educational practices, and relational culture so that mentoring becomes a mechanism for Education for Sustainability and transformative student learning. As such, the construct operates at the interface between institutional sustainability and educational practice, providing a framework for understanding how sustainability commitments may be translated into students' learning experiences through mentoring.

Traditional mentoring research typically evaluates mentor characteristics, mentoring relationships, or student outcomes. Likewise, institutional sustainability assessments generally focus on governance, policies, or environmental performance. MRS occupies an intermediate analytical level by examining the institutional conditions that enable mentoring to connect sustainability commitments with educational practice—i.e., MRS focuses on the organizational conditions that support sustainability-oriented mentoring.

The construct draws upon three complementary theoretical traditions that together provide its conceptual foundation. First, it draws on Education for Sustainability, which emphasizes agency, systems thinking, ethical reasoning, and competence for action as central educational outcomes [3–5]. Second, it incorporates evidence from mentoring research demonstrating that sustained mentoring relationships promote reflection, identity development, autonomy, and critical engagement [13,15]. Third, it is informed by organizational readiness theory [18], adapting the concept of readiness from organizational

change to the specific context of sustainability-oriented educational transformation. Thus, MRS integrates these three perspectives into a common conceptual framework that links institutional sustainability with relational educational practice.

Within this framework, four complementary organizational domains contribute to the emergence of MRS. Strategic readiness refers to the explicit institutional commitment to sustainability expressed through strategic plans, SDG integration, institutional leadership, and long-term policies; structural readiness encompasses the organizational infrastructure supporting sustainability, including governance arrangements, sustainability offices, institutional committees, and formal coordination mechanisms; educational readiness describes the extent to which sustainability is integrated into teaching, curriculum development, research, and educational innovation, thereby creating opportunities for meaningful student learning. These three domains represent observable institutional conditions that can be identified through documentary evidence. Finally, relational readiness refers to the institutional capacity to cultivate mentoring cultures characterized by trust, dialogue, ethical reflection, reciprocity, and student agency. This domain differs from the previous three because it reflects organizational culture and educational relationships rather than formal institutional structures. Consequently, relational readiness cannot be directly inferred from institutional documentation and remains a latent component of the framework. The present study therefore examines the institutional evidence associated with the strategic, structural, and educational domains, while recognizing that the relational domain requires complementary empirical approaches involving mentors, students, and institutional practice.

Taken together, these four domains define MRS as an organizational capability that emerges from their alignment. Universities may demonstrate strong strategic commitment while lacking educational integration, or they may develop innovative educational practices without sufficient institutional coordination. Consequently, MRS is conceived as an emergent institutional capability arising from the interaction among these dimensions rather than from the presence of any single organizational feature. Therefore, it provides a conceptual framework for interpreting how combinations of institutional conditions may facilitate the integration of mentoring into Education for Sustainability. The present study does not claim that the presence of these observable institutional domains is sufficient to infer MRS. However, they represent organizational conditions theoretically associated with its emergence, while Relational Readiness remains to be operationalized through future empirical research.

The conceptual model proposed in this study is summarized in Figure 1. The model proposes that institutional sustainability may provide the organizational context from which the Mentoring Readiness for Sustainability can emerge. MRS, in turn, enables sustainability-oriented mentoring capable of fostering student agency, ethical reasoning, systems thinking, reflection, and competence for action, ultimately contributing to transformative Education for Sustainability and reinforcing institutional learning processes. The directional relationships represented in the figure express the theoretical logic of the framework and should be interpreted as conceptual propositions that require future empirical examination.

The following conceptual propositions summarize the theoretical logic of the framework and are intended to guide future empirical research rather than to be tested in the present study:

1. The proposed framework suggests that universities exhibiting greater alignment between strategic, structural, educational, and relational dimensions may be better positioned to develop higher levels of MRS.

sure MRS directly or to validate a measurement instrument. Instead, it examines whether observable institutional evidence reflects organizational conditions that, according to the proposed framework, may enable mentoring to function as a mechanism for EfS. This methodological approach combines conceptual development with documentary institutional analysis, a strategy commonly employed when introducing emerging theoretical constructs that require progressive empirical refinement [19,20].

The documentary analysis included all 76 officially recognized Spanish universities (public and private) operating at the time of data collection. The institutional list was obtained from the official register of Spanish universities. Documentary searches were conducted using a standardized protocol applied consistently across all institutions. The searches examined official university websites together with publicly available strategic plans, sustainability plans, governance documents, institutional regulations, organizational charts, research portals, official degree curricula, course catalogues, and sustainability reports whenever available. Because the objective of the study concerns institutional readiness rather than individual perceptions, documentary evidence constitutes an appropriate source for examining how universities formally organize and communicate sustainability within their institutional architecture. Each university represents the unit of analysis.

Documentary information was collected between January and February 2026.

Institutional indicators were defined a priori from the conceptual framework presented in Section 2. Each indicator was coded dichotomously (0 = no explicit documentary evidence identified; 1 = explicit documentary evidence identified) according to the operational definitions presented in Table 1. Coding referred exclusively to the presence of documentary evidence and was not intended to assess the quality, maturity or effectiveness of institutional practices. Consequently, a value of 0 should not be interpreted as evidence that a given institutional practice was absent, but only that no explicit documentary evidence satisfying the predefined operational definition could be identified in the institutional sources examined.

The documentary coding was performed by one researcher using predefined operational definitions. Coding consistency was maintained through the use of predefined operational definitions, explicit coding criteria summarized in Table 1, and the systematic application of the same documentary search and coding protocol across all universities.

The framework identifies four interrelated dimensions: Strategic Readiness, referring to institutional commitment through sustainability strategies and explicit references to the SDGs; Structural Readiness, represented by governance arrangements such as vice-rectorates, sustainability offices, committees, and dedicated organizational units; Educational Readiness, reflected in curricular integration, sustainability training, academic chairs, and research groups; and Relational Readiness, understood as the institutional capacity to foster mentoring relationships that promote dialogue, reflection, trust, and student agency. Because relational readiness cannot be inferred reliably from documentary institutional evidence, it is treated in this study as a theoretical dimension whose empirical operationalization requires future research involving institutional leaders, mentors, and students.

Table 1 summarizes the relationship between the conceptual dimensions of the MRS and the considered institutional indicators during the analysis.

Relational Readiness represents a latent organizational domain that cannot be inferred from institutional documentation alone. Its empirical operationalization requires complementary evidence obtained from mentors, students, institutional case studies and analyses of mentoring practice. Consequently, this study does not claim to measure MRS directly but only the observable institutional domains theoretically associated with the proposed framework.

Table 1. Operationalization of the observable institutional domains associated with the Mentoring Readiness for Sustainability (MRS).

Domain	Institutional Indicator	Operational Definition	Documentary Source	Coding Criteria
Strategic Readiness	Sustainability strategy or institutional sustainability plan	The university has an officially approved institutional strategy, plan or policy explicitly addressing sustainability	Strategic Plan/ Sustainability Plan	0 = absent; 1 = present
	Sustainable Development Goals (SDGs)	Explicit institutional commitment to the SDGs through strategic documents or institutional webpages	Strategic Plan/ Institutional Website	0 = absent; 1 = present
	Agenda 2030	Explicit reference to Agenda 2030 as part of institutional planning	Strategic Plan/ Institutional Website	0 = absent; 1 = present
	Institutional sustainability policy	Formal institutional policy regulating sustainability-related activities	Institutional Regulations/ Strategic Documents	0 = absent; 1 = present
Structural Readiness	Sustainability office or unit	Permanent administrative unit responsible for sustainability	Organizational Structure	0 = absent; 1 = present
	Sustainability committee	Institutional committee or working group responsible for sustainability governance	Organizational Structure/ Governance Documents	0 = absent; 1 = present
	Sustainability governance structure	Formal appointment of institutional authorities responsible for sustainability (e.g., vice-rectorates, delegates, coordinators or equivalent positions)	Rectorate/ Vice-Rectorate Webpages	0 = absent; 1 = present
	Sustainability reporting	Publication of institutional sustainability reports or equivalent public accountability documents	Sustainability Reports	0 = absent; 1 = present
Educational Readiness	Sustainability in the curriculum	Explicit integration of sustainability into official degree curricula through learning outcomes, compulsory or elective courses, or curricular pathways	Official Degree Curricula	0 = absent; 1 = present
	Sustainability courses	At least one officially published undergraduate or postgraduate course explicitly focused on sustainability	Official Course Catalogue	0 = absent; 1 = present
	Sustainability research groups	Officially recognized research groups primarily focused on sustainability	Research Portal	0 = absent; 1 = present
	Academic chairs or institutes	Chairs, institutes or centers explicitly dedicated to sustainability	Research Institutes/ Chairs Webpage	0 = absent; 1 = present
	Educational innovation projects	Official institutional programs promoting sustainability-oriented educational innovation	Teaching Innovation Office/ Institutional Projects	0 = absent; 1 = present
Relational Readiness	Mentoring culture	Organizational capacity to cultivate trust, dialogue, reciprocity and student agency through mentoring relationships	Not Applicable	Not coded in the present study

Note. All documentary evidence was collected exclusively from official university websites and publicly available institutional documents. Observable indicators were coded dichotomously (0 = no explicit documentary evidence identified; 1 = present). The analysis was designed to identify institutional conditions associated with the proposed conceptual framework and should not be interpreted as a direct measurement of the Mentoring Readiness for Sustainability.

The analytical process consisted of three sequential stages. First, institutional documents were systematically examined to identify explicit evidence associated with sustainability governance, educational activities, and organizational arrangements. Second, the identified indicators were classified according to the three observable dimensions of the proposed framework using a deductive analytical strategy derived from the conceptual model while preserving institutional diversity in the interpretation of documentary evidence. Finally, descriptive analyses were conducted to identify institutional patterns and organizational configurations associated with different levels of sustainability institutionalization. The purpose of these analyses was not to compare institutional performance or establish causal relationships, but to explore how existing sustainability evidence can be reinterpreted through the conceptual lens of the Mentoring Readiness for Sustainability.

The methodological contribution of this study lies precisely in this reinterpretation. Previous assessments of university sustainability have generally focused on governance, campus management, curriculum, or SDG implementation. In contrast, this study asks whether these institutional characteristics reveal organizational conditions that could enable mentoring to become a driver of transformative sustainability education. Consequently, institutional indicators are interpreted not as measures of sustainability performance but as evidence of organizational readiness for sustainability-oriented mentoring.

Several limitations define the scope of the empirical findings. First, the analysis relies exclusively on publicly available institutional documentation and therefore captures formal organizational commitments rather than the lived experiences of mentors or students. Second, institutional visibility should not be equated with institutional effectiveness, as universities may differ substantially in the extent to which documented sustainability initiatives are implemented in practice. Third, this study does not claim to validate the Mentoring Readiness for Sustainability as a measurement model. Rather, it provides a first empirical approximation to establish theoretical foundations for future research. Subsequent studies should operationalize the relational dimension of MRS using qualitative and quantitative evidence collected directly from mentoring programs and should examine the construct across different national higher education systems.

4. Results

The empirical analysis examined institutional sustainability evidence from 76 Spanish universities to explore whether existing organizational arrangements could be interpreted through the conceptual framework of MRS. Rather than evaluating universities' sustainability performance, the analysis sought to identify institutional conditions that may facilitate the integration of mentoring into EfS. The results reveal substantial heterogeneity across institutions and suggest that sustainability should be understood as a multidimensional organizational configuration rather than as a homogeneous institutional characteristic.

Figure 2 presents the distribution of the principal sustainability indicators identified in the institutional documentation. Nearly all universities provide explicit evidence of sustainability-related initiatives, indicating that sustainability has become an established element of institutional discourse. Governance structures, particularly vice-rectorates or delegated leadership positions responsible for sustainability, also appear frequently, suggesting that many institutions have moved beyond isolated environmental initiatives toward more formal organizational arrangements. In contrast, indicators associated with curriculum integration, sustainability training, institutional strategies, dedicated organizational units, and research structures appear less consistently across universities.

These differences reveal that sustainability is not institutionalized uniformly across the higher education sector. Institutional commitment appears strongest at the strategic and governance levels, whereas evidence of educational integration is considerably more

uneven. This pattern suggests that many universities have successfully incorporated sustainability into institutional planning while making less systematic progress in embedding sustainability within teaching, learning, and educational practice. Consequently, institutional sustainability should not be interpreted as a binary condition in which universities either are or are not sustainable. Rather, the findings indicate different degrees and forms of institutionalization, reflecting diverse organizational trajectories.

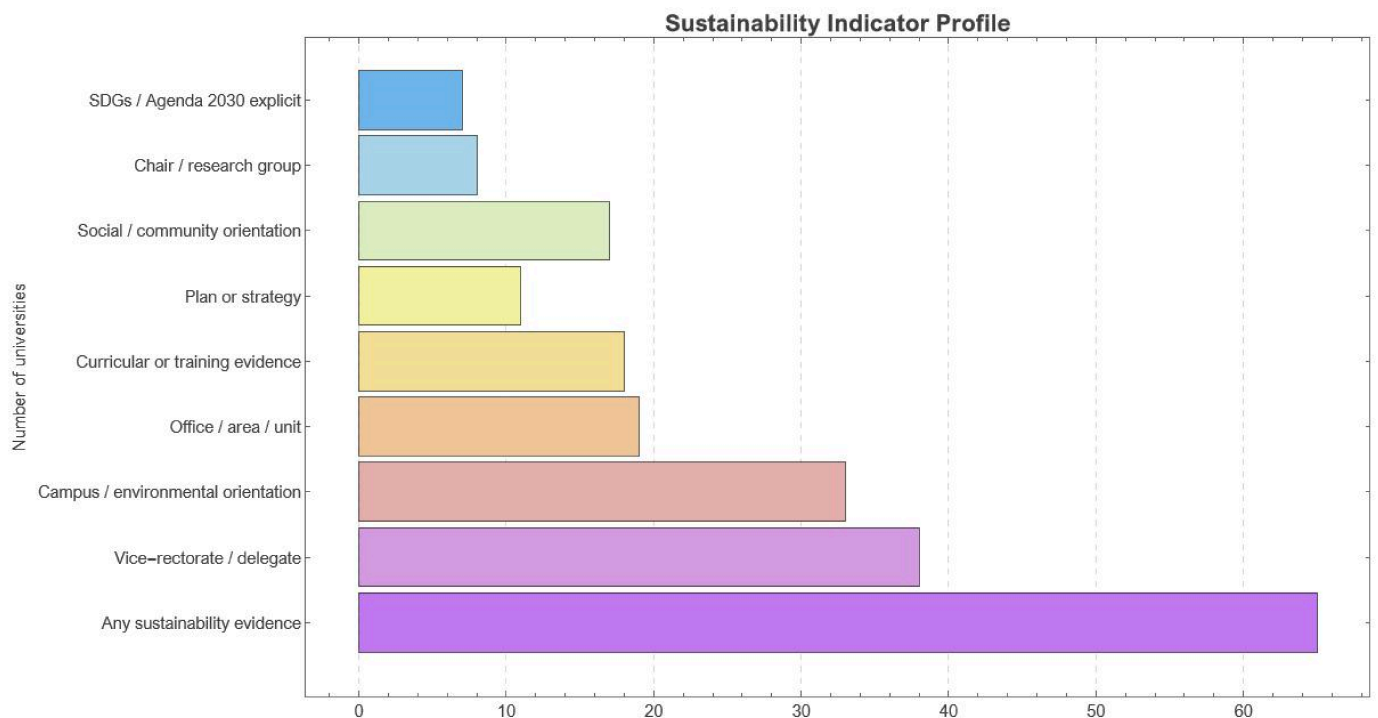


Figure 2. Sustainability Indicator Profile Across Spanish Universities.

This distinction becomes more evident when individual indicators are examined collectively rather than independently. Universities exhibiting similar levels of institutional visibility often differ substantially in the balance between governance structures and educational initiatives. In some institutions, sustainability is primarily represented through organizational leadership, strategic documents, or dedicated offices. In others, curricular initiatives and educational activities are comparatively more visible despite less developed governance arrangements. These observations suggest that institutional sustainability cannot be adequately understood through isolated indicators but requires a broader interpretation of how different organizational dimensions interact.

To explore these interactions, universities were conceptually positioned according to two complementary dimensions: the visibility of institutional sustainability structures and the extent to which sustainability appeared to be embedded within educational activities.

Some universities occupy positions characterized primarily by administrative visibility, where sustainability is strongly represented through governance structures but less evident within educational initiatives. Others exhibit a more educational orientation, incorporating sustainability into teaching and learning despite comparatively limited institutional infrastructure. A third group combines strong governance with substantial educational integration, representing institutions whose organizational characteristics appear more consistent with the conditions proposed in the MRS framework. Finally, some universities display comparatively limited evidence across both dimensions, suggesting lower levels of institutional integration of sustainability.

The significance of these configurations lies less in the position occupied by individual universities than in what the overall pattern reveals about institutional readiness. Universities with comparable sustainability commitments may nevertheless differ considerably in their capacity to translate those commitments into educational practice. This observation challenges the widespread assumption that institutional sustainability automatically generates transformative learning opportunities. Instead, the findings indicate that the relationship between sustainability policies and educational practices is mediated by broader organizational conditions that vary across institutions.

Viewed through the conceptual framework developed in this article, the documentary evidence is consistent with the conceptual distinction between institutional sustainability and MRS. The indicators identified in institutional documentation provide observable evidence of three dimensions of MRS: strategic readiness, structural readiness, and educational readiness, but they do not capture relational readiness, which remains largely invisible within documentary sources. Universities may possess sustainability strategies, governance structures, and educational initiatives without necessarily creating the relational conditions through which mentoring can foster dialogue, ethical reflection, critical thinking, and student agency.

This distinction has important implications for interpreting institutional sustainability. Existing assessments typically focus on the presence of sustainability plans, governance mechanisms, curricular initiatives, or environmental management systems. While these elements undoubtedly reflect institutional commitment, the present analysis suggests that they represent organizational preconditions rather than evidence of educational transformation. Sustainability-oriented mentoring requires not only institutional structures but also relational capacities capable of connecting institutional commitments with students' everyday learning experiences.

Accordingly, the findings should not be interpreted as a validation of the Mentoring Readiness for Sustainability. Instead, they provide a first empirical approximation demonstrating that existing institutional sustainability evidence can be systematically reinterpreted through the proposed conceptual framework. The results show that universities differ not only in the visibility of sustainability initiatives but also in the organizational configurations that may enable mentoring to contribute to transformative Education for Sustainability. In this sense, the empirical analysis illustrates the analytical usefulness of interpreting institutional sustainability, highlighting the need for future empirical operationalization and validation of the proposed conceptual framework of MRS while simultaneously highlighting the need for future research capable of operationalizing and validating its relational dimension through direct investigation of mentoring practices and educational cultures.

Because the objective was conceptual development rather than hypothesis testing, the empirical analysis was intentionally interpretative. The documentary evidence was not used to verify the proposed framework but to examine whether it provided a coherent lens for organizing observable institutional sustainability evidence.

5. Discussion

This study set out to examine whether institutional sustainability can be interpreted not only through governance structures, strategic plans, or curricular initiatives, but also through the institutional conditions that enable mentoring to become a mechanism for EfS. Rather than evaluating mentoring effectiveness or assessing the maturity of sustainability policies independently, the study explored the institutional space where both domains intersect. The findings suggest that this intersection is neither automatic nor sufficiently explained by existing frameworks. Instead, they point to the existence of an intermediate

institutional layer that has received little attention in previous research: the organizational readiness required for mentoring to support transformative sustainability education.

The principal theoretical contribution of this paper is therefore the introduction of MRS as a new institutional construct. MRS is not intended to replace existing approaches to institutional sustainability or mentoring research. Rather, it complements them by identifying the organizational conditions that enable mentoring to translate institutional sustainability commitments into meaningful educational experiences. In this sense, the findings support the argument that sustainability should not be understood solely as an institutional attribute or strategic objective, but also as a relational educational process requiring specific organizational capacities.

The literature on Education for Sustainability has progressively moved beyond environmental education toward broader conceptions of transformative learning, agency, systems thinking, and institutional change [2,3,10]. Systematic reviews consistently argue that universities must integrate sustainability across governance, curriculum, research, and community engagement rather than treating it as an isolated educational initiative [8,10]. However, this literature has devoted comparatively limited attention to the pedagogical mechanisms through which institutional sustainability is translated into students' educational experiences. Our findings suggest that mentoring represents one such mechanism, but only when institutions possess the organizational conditions necessary for mentoring to assume this transformative role.

A first important finding concerns the distinction between institutional sustainability and institutional readiness. Universities included in the study exhibit considerable variation in the visibility of sustainability strategies, governance structures, dedicated offices, and curricular initiatives. Nevertheless, these institutional indicators do not necessarily imply equivalent capacities to integrate mentoring into sustainability-oriented educational practices. This observation reinforces previous arguments that sustainability cannot be evaluated solely through organizational structures or policy commitments [9]. Institutional sustainability provides an essential foundation, but it does not by itself explain how sustainability becomes educationally meaningful for students. MRS seeks to conceptualize precisely this missing institutional layer.

This distinction also helps clarify the relationship between sustainability governance and educational transformation. Previous work has emphasized the importance of whole-institution approaches, arguing that sustainability should permeate all dimensions of university life, including leadership, teaching, operations, research, and community engagement [8]. Our findings do not challenge this perspective. Instead, they suggest that mentoring may constitute one of the relational mechanisms through which whole-institution approaches become visible in students' educational trajectories. Consequently, MRS should be understood not as an alternative to whole-institution models but as a construct that complements them by incorporating the relational dimension of sustainability-oriented education.

A second contribution concerns the conceptualization of mentoring itself. Most mentoring research has focused on interpersonal relationships, mentor competencies, student adjustment, retention, or academic performance [13]. These studies have demonstrated that mentoring contributes to students' academic integration, psychosocial development, and reflective learning. Similarly, comparative analyses of mentoring programs in Spanish universities have shown considerable diversity in institutional models and accompanying practices [15]. However, mentoring has rarely been interpreted as an institutional mechanism capable of supporting Education for Sustainability.

Our findings suggest that such an interpretation is both plausible and theoretically productive. Sustainability-oriented mentoring extends the traditional functions of men-

toring beyond academic guidance or personal support. Within this perspective, mentors become facilitators of reflection, ethical dialogue, critical thinking, and student agency in relation to complex societal challenges. This interpretation is consistent with recent developments in EfS, which emphasize competence for action rather than knowledge transmission alone [3,5]. Mentoring therefore becomes part of the educational infrastructure required to foster transformative learning rather than simply another student support service.

At the same time, the study highlights an important tension between institutional aspirations and organizational capacity. Universities frequently articulate ambitious sustainability commitments through strategic plans, SDG frameworks, governance structures, or specialized units. However, the existence of these institutional arrangements does not necessarily ensure that sustainability permeates educational relationships. This observation resonates with previous critiques suggesting that the incorporation of sustainability into higher education often remains concentrated at the policy or curricular level without substantially transforming teaching and learning processes [10]. Our results extend these arguments by suggesting that mentoring may represent one of the missing mechanisms connecting institutional discourse with educational practice.

An equally important implication concerns the interpretation of organizational readiness. The construct proposed here builds upon organizational readiness theory [18] but adapts it to the specific context of higher education and Education for Sustainability. Organizational readiness traditionally refers to an institution's collective preparedness to implement change. MRS narrows this perspective by focusing specifically on the institutional conditions that enable mentoring to contribute to transformative sustainability education. This distinction is important because it shifts the analytical focus from organizational change in general toward educational mediation as a specific institutional capability.

The empirical findings also suggest that readiness should not be interpreted as the simple accumulation of institutional resources. Universities displaying similar sustainability infrastructures may differ substantially in the extent to which mentoring is embedded within their educational culture. Conversely, institutions with fewer formal sustainability structures may nevertheless possess relational cultures that facilitate mentoring practices aligned with sustainability values. These observations reinforce the multidimensional character of MRS and support the proposition that institutional readiness emerges from the interaction among strategic, structural, educational, and relational dimensions rather than from any single indicator.

From a methodological perspective, this study should be understood as providing a first empirical approximation to MRS rather than a formal validation of the construct. The institutional indicators analyzed here allow the identification of organizational conditions associated with sustainability, but they do not constitute a validated measurement scale. In particular, the relational dimension remains only partially observable through publicly available institutional information. Future research should therefore investigate and validate the four dimensions of MRS through complementary empirical approaches, including qualitative interview studies exploring institutional mentoring cultures, survey-based scale development involving mentors and students, and mixed-methods designs integrating organizational documentation with participants' experiences. Such work would enable comparative analyses across national higher education systems and facilitate the development of institutional benchmarking tools.

The study also has practical implications for university leadership. Institutions seeking to strengthen Education for Sustainability often prioritize strategic planning, governance reforms, or curricular innovation. While these actions remain essential, our findings suggest that equal attention should be devoted to the relational infrastructures through which sustainability is experienced by students. Mentoring should therefore be considered part

of universities' educational architecture rather than an auxiliary student support service. Integrating mentoring into sustainability strategies may enhance students' opportunities to engage critically with complex societal challenges while strengthening institutional coherence across governance, curriculum, and educational practice.

Several limitations should nevertheless be acknowledged. First, the study relies on documentary institutional evidence and therefore captures the visible manifestations of sustainability rather than the lived educational experiences of students and mentors. Second, the analysis focuses exclusively on Spanish universities, limiting the international generalizability of the findings. Third, the MRS is introduced here as a conceptual and analytical construct rather than as a validated measurement model. Consequently, the article does not claim to measure institutional readiness directly but to establish the theoretical foundations upon which future empirical validation can be built.

These limitations also define a clear research agenda. Future studies should examine whether higher levels of MRS are associated with differences in mentoring quality, student agency, sustainability competencies, or institutional capacity for transformative education. Longitudinal studies could investigate how MRS evolves as universities modify their sustainability strategies or mentoring systems, while international comparative research could explore how different higher education systems shape institutional readiness for sustainability-oriented mentoring.

Ultimately, this article argues that the relationship between sustainability and mentoring should be reconsidered. Universities have invested considerable effort in developing sustainability strategies, governance structures, and curricular initiatives. However, transforming institutional commitment into educational transformation requires more than policy implementation. It requires institutional conditions that enable relational educational practices capable of connecting sustainability with students' everyday learning experiences. The Mentoring Readiness for Sustainability provides a conceptual framework for understanding this institutional capacity and offers a new perspective from which universities can examine the educational coherence of their sustainability agendas.

6. Conclusions

This article has argued that the relationship between sustainability and university mentoring requires a different conceptual perspective. While previous research has extensively examined institutional sustainability strategies and the educational benefits of mentoring as separate domains, considerably less attention has been paid to the organizational conditions that allow mentoring to contribute to Education for Sustainability. Addressing this gap, the study introduced the Mentoring Readiness for Sustainability (MRS) as a new institutional construct describing a university's capacity to align its strategic commitment, organizational structures, educational practices, and relational culture so that mentoring can support transformative sustainability learning.

The documentary evidence indicates that sustainability has become widely institutionalized across Spanish universities through governance arrangements, strategic plans, dedicated organizational units, and educational initiatives, although these developments remain heterogeneous across institutions. However, these developments are unevenly distributed across institutions and do not necessarily indicate equivalent capacities to translate sustainability commitments into students' educational experiences. The findings therefore support the central premise of this study: institutional sustainability and institutional readiness for sustainability-oriented mentoring should not be regarded as equivalent concepts.

The study also provides a first empirical approximation to MRS by showing that existing institutional sustainability evidence can be systematically reinterpreted through

the proposed conceptual framework. Rather than functioning as a measurement model, the framework offers a new analytical perspective for understanding how organizational conditions may facilitate (or constrain) the integration of mentoring into Education for Sustainability. In doing so, the article shifts the discussion from assessing what universities have implemented to examining whether they possess the institutional conditions necessary for mentoring to become a driver of transformative education.

The research questions guiding this study can now be answered. First, the documentary evidence suggests heterogeneous institutional configurations consistent with different observable domains of MRS. Second, strategic commitment and governance structures are generally more visible than educational integration, suggesting that sustainability has progressed further as an institutional priority than as an embedded educational practice. Third, interpreting these organizational configurations through the lens of MRS demonstrates the value of distinguishing between institutional sustainability and the institutional capacity to translate sustainability commitments into relational educational processes such as mentoring.

From a theoretical perspective, the principal contribution of this study is the introduction of MRS as a bridge between three bodies of the literature that have largely evolved independently: Education for Sustainability, higher education mentoring, and organizational readiness. By integrating these perspectives, the proposed framework offers a conceptual basis for examining mentoring not simply as a student support service but as part of the educational infrastructure required for transformative sustainability learning.

The study also has practical implications for university leaders and policymakers. Universities seeking to strengthen their sustainability agendas should complement strategic planning and governance reforms with deliberate investment in the relational dimensions of education. Developing sustainability-oriented mentoring systems requires more than institutional policies; it demands organizational conditions that enable mentors to foster dialogue, ethical reflection, critical thinking, and student agency. Consequently, mentoring should be considered an integral component of institutional sustainability strategies rather than an ancillary student service.

Several limitations should be acknowledged. The empirical analysis is based exclusively on institutional documentary evidence and therefore captures formal organizational commitments rather than mentoring practices or students' lived experiences. Furthermore, the study is limited to Spanish universities and does not attempt to validate MRS as a measurement instrument. The proposed framework should therefore be regarded as a conceptual model supported by an initial empirical approximation rather than as a fully operationalized construct.

These limitations define a clear agenda for future research. The next stage of investigation should focus on developing and validating instruments capable of measuring the four dimensions of MRS, particularly its relational dimension, which cannot be inferred from documentary evidence alone. Comparative international studies, longitudinal analyses, and research incorporating the perspectives of institutional leaders, mentors, and students will be essential for examining the explanatory power of the construct and its relationship with sustainability competencies, student agency, and transformative educational outcomes.

Ultimately, the contribution of this article extends beyond mentoring itself. It proposes that universities should be evaluated not only by the sustainability policies they adopt or the structures they create, but also by their capacity to transform those institutional commitments into meaningful educational experiences. The Mentoring Readiness for Sustainability offers a conceptual framework for understanding this institutional capability

and provides a foundation for future research on how higher education can translate sustainability ambitions into transformative educational practice.

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Abbreviations

The following abbreviations are used in this manuscript:

EfS	Education for Sustainability
ESD	Education for Sustainable Development
MRS	Mentoring Readiness for Sustainability
SDG	Sustainable Development Goals

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