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Universal Design for Learning in Higher Education

UDL Guidelines for Promoting Inclusive Pedagogy Responsive to Student Diversity

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Project of Relevant National Interest 2022
"D.A.N.T.E.-U. Design Accessibility Network to Enjoy University.
Design and Implementation of UDL-based university teachers Training online Platform"
(Project code 2022F5EZ43)

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To the young talents of the project,
whose enthusiasm and forward-looking vision
have inspired new horizons of knowledge
for a university of the future
one that welcomes, transforms, and enables growth and flourishing.

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Our special thanks go to Stefania Pinnelli, who welcomed this volume into the series she directs and has steadfastly supported the promotion and dissemination of the UDL perspective within higher education.

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Introduction

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1. Purpose of the volume

This volume is part of the initiatives promoted within the Project of Relevant National Interest, called *D.A.N.T.E.-U. Design Accessibility Network to Enjoy University. Design and Implementation of a UDL-based University Teachers Training Online Platform* (Project Code 2022F5EZ43), a nationally coordinated research program involving five universities (University of Salento as lead institution, together with the Universities of Padua, Perugia, Roma Tre, and Bolzano). It represents one of the first systematic research–intervention initiatives aimed at rethinking university teaching practices from an inclusive perspective. The project, which spans a two-year period, seeks not only to foster collective reflection on the nature and specificities of the academic context in relation to inclusion, but also to define operational scenarios and transferable action models capable of producing a lasting impact on the quality of the university experience.

In this perspective, the project aims to explore and promote a cultural and organizational transformation of university teaching, based on the assumption that the Universal Design for Learning (UDL) framework (CAST, 2006) can serve as a theoretical and methodological foundation to ensure equal opportunities for access, participation, and academic success for all university students. The adoption of UDL is not conceived merely as a collection of technical strategies for personalizing learning, but rather as a systemic approach designed to promote a university that is genuinely "for all and by all," one that values diversity as a resource and removes, in a preventive and structural manner, the barriers that hinder educational experience. This vision aligns with the principles of the Index for In-

clusion (Booth & Ainscow, 2011), which have long urged educational institutions to critically reconsider their cultural, organizational, and relational structures.

The foundational hypothesis of the D.A.N.T.E.-U. project is that integrating the principles of UDL with the quality indicators of the Index for Inclusion may constitute an innovative framework for redesigning the instructional and communicative structures of higher education. Such integration could positively influence crucial dimensions such as reducing student dropout, improving academic performance, fostering critical thinking, and enhancing the perceived self-efficacy of both students and teachers. If properly contextualized and supported by shared institutional commitment, the transformative potential of this model could lead to a comprehensive reconfiguration of the university experience—one in which inclusion becomes not an ancillary objective, but a foundational principle of pedagogical action.

2. A dual format, print and digital

In operational terms, the project takes shape through two main outputs: on the one hand, the development of a context-specific adaptation of the UDL Guidelines to higher education, presented and critically discussed in this volume with the aim of offering academics a solid theoretical and methodological framework; on the other, the creation of an online platform which, building upon the contents of this volume, expands its interactive dimension through multimedia materials (audiovisual contributions, podcasts, theoretical resources, and empirical studies) designed to foster dynamic, situated, and collaborative forms of learning.

From this perspective, the present volume does not merely describe a reference framework but rather constitutes an integral part of a broader process aimed at generating a new culture of university teaching, in which methodological innovation, scientific rigor, and the commitment to inclusion find a shared ground for dialogue and experimentation.

The dual format—print and digital—is conceived not only as a support tool for designing accessible and inclusive lessons that are sensitive to the plurality of student needs and characteristics, but also as an opportunity for continuous professional development and faculty growth within the academic community. This approach is oriented toward both tenured and early-career faculty members, promoting an ongoing methodological renewal. The platform also functions as an

open repository, capable of collecting and disseminating UDL-based teaching models, resources, and best practices—even from universities not directly involved in the project—thus serving as a progressive and cumulative educational device.

The ultimate goal of these resources, grounded in the epistemological framework of UDL, is to promote the development of an academic community composed of expert, self-regulated, and metacognitively aware students and teachers. On the student side, this may translate into expanded learning opportunities for non-traditional student populations, a reduction of barriers to social participation, increased satisfaction with university experiences, and qualitative and quantitative improvements in learning outcomes. On the faculty side, it may encourage a critical reflection on pedagogical practices, the development of advanced competences in inclusive use of digital technologies and Learning Management Systems (LMS), and the enhancement of personalized student support, in line with specific educational needs and the principles of universal design.

In this light, the present volume aims to provide both a theoretical and methodological framing of the UDL approach, contextualized within the specificities of higher education, and a critical analysis of the ongoing transformations within contemporary universities. These transformations, rather than stemming from a radical change in student demographics, can be interpreted as the outcome of a growing institutional awareness of needs, vulnerabilities, and challenges that have always existed but are now increasingly visible and socially significant due to evolving cultural sensibilities and heightened attention to educational rights and equity.

3. Structure of the volume

Turning now to the composition of the volume, its structure is developed on the basis of the UDL 3.0 Guidelines, in the updated version proposed by CAST (2024). These guidelines serve as the conceptual foundation of the work, which has been critically reinterpreted and contextually adapted to account for the specific characteristics of academic settings and university teaching practices. The structure of the volume has thus been designed with a dual purpose: on the one hand, to translate the UDL principles into an operational and immediately usable language for university teachers and researchers; on the other, to generate tools for reflection and self-assessment capable of supporting a cultural and organizational transformation in higher education teaching.

The volume opens with an introductory chapter by Andrea Fiorucci, whose role is to outline the epistemological and conceptual framework, guiding readers into the core of the dialogue between UDL, the Index for Inclusion, and the university context. This section presents the theoretical perspective underpinning the entire project, highlighting the need for a transdisciplinary dialogue that integrates international models of inclusion with the specific features of the Italian higher education system.

The central part of the volume is organized according to the threefold structure of the UDL principles. For each principle, the corresponding guidelines are presented along with interpretative commentaries that illustrate their potential application within university contexts. Each guideline is accompanied by practical recommendations for teachers, including implementation scenarios ranging from course design and content communication to assessment methods and student interaction. The aim is not to propose a prescriptive model, but rather a flexible framework, open to adaptation across different disciplinary areas and institutional contexts.

Following the presentation of the three principles, a reasoned glossary organized according to the UDL framework is provided. Its goal is to introduce and disseminate a shared psycho-pedagogical vocabulary among university faculty, including those from non-pedagogical disciplines. This section functions as a tool for conceptual literacy, designed to foster the appropriation of a common language and reduce the risk of misunderstanding or oversimplifying the theoretical and methodological complexity of the UDL approach.

The volume concludes with two operational contributions presenting three instruments developed to support processes of self-analysis and self-reflection for both teachers and students. Specifically:

1. a tool aimed at identifying the educational needs of non-traditional students, allowing university teachers to self-assess their teaching practices based on UDL criteria;
2. a student tool designed to encourage reflection on individual learning needs—partly related to the condition of being non-traditional students—and to self-assess their educational experience using UDL benchmarks;
3. a faculty tool based on a targeted selection of indicators from the Index for Inclusion, aimed at stimulating reflection on daily teaching practices rather than providing a comprehensive evaluation of the university as an institution.

It is worth emphasizing that the overall objective is not to measure the global effectiveness of academic institutions, but rather to encourage individual teachers to critically examine their own teaching practices—in terms of course design, content organization and communication, relationships with students, and strategies for accessibility and engagement. Through this reflection, each educator can contribute concretely to building a more inclusive academic environment as a whole.

4. Weaving Colours: A Visual Map of UDL in the Style of Kandinsky

The cover of the volume symbolically and visually represents the interweaving of the three principles of UDL through an abstract language inspired by the aesthetics of Wassily Kandinsky. The image, composed of curved and broken lines, circles, dots, and colour fields of varying intensity, evokes the idea of a dynamic map of knowledge and inclusive learning.

The visual structure, founded on the harmony between form and colour, translates into pictorial language the fluid interaction among the three UDL principles. They are not arranged in a rigid scheme but rather intersect and overlap, generating movement, balance, and emotional vibration.

Together, the three principles form a polyphonic composition of shapes and colours, where rationality and sensitivity merge, visually conveying the idea of an inclusive university as a vital, open, and ever-evolving space in which diversity becomes a source of harmony and innovation.

5. A utopian workshop for an accessible and inclusive university

The process of drafting and developing these guidelines has been far from simple—not only because of the intrinsic complexity of the UDL framework, which is by nature redundant, interconnected, and systemic, but also because such a perspective demands a slow, critical, and profound reflection on the entire organizational and pedagogical structure of the university. In many respects, UDL can be seen as a utopian vision of teaching—not as a set of unattainable goals, but as a projection of possible, though often unimagined, pathways, which open alternative horizons and orient educators toward transformation.

It is evident that not all UDL principles can be applied immediately, or fully,

within current academic systems—nor is that the objective. The utopian vocation of the model lies instead in promoting among teachers, students, and academic administrators a renewed awareness: the recognition that alternative pathways exist, that change is possible, and that there is an urgent need to pluralize academic procedures—in terms of access to content, engagement in learning pathways, and participation in university life. Both UDL and the Index for Inclusion do not define "virtuous" institutions in opposition to "noncompliant" ones; rather, they serve as compasses for guiding change toward the desirable, envisioning a university that—though still under construction today—can and must become increasingly inclusive and accessible.

The utopian dimension, understood as a projection toward an ideal social and political model—a *"non-place"* that may never be fully realized yet serves as a critical tension and a catalyst for action in the present—is reflected in several central issues raised by the UDL perspective. Among these are:

- the pluralization of languages as an antidote to all forms of linguistic and cultural hegemony;
- the recognition and respect for minority cultures, beyond traditionally dominant ones;
- and the long-debated issue of gender-inclusive language, which is gradually gaining ground in academic contexts through new written forms and conventions.

On this last point, the volume has deliberately chosen not to propose a single, rigid, or prescriptive solution, but rather to reflect the plurality of existing practices. Accordingly, it embraces different forms of inclusive writing, with the understanding that these are ongoing experiments rather than definitive answers—intended to foster reflection on the broader social issue of gender disparity and its impact on academic language. Some linguistic choices aim to make gender difference visible, such as full duplication or symmetrical constructions; others move toward neutralization, through collective nouns or passive constructions that shift attention from the agent to the action.

However, it was not deemed possible to systematically adopt forms of inclusive writing referring to non-binary individuals through substitute graphic codes, as these—though rich in political and symbolic value—often create barriers to textual accessibility. Such forms can be challenging for readers using screen readers or text-to-speech technologies (e.g., individuals with visual impairments or spe-

cific learning disorders), as well as for students from diverse linguistic and cultural backgrounds.

While acknowledging the significant social and political contribution of certain graphic markers such as the asterisk (*), at symbol (@), "u", and, more recently, the schwa (ə)—which, compared to previous conventions, has the advantage of being usable in both singular (ə) and plural (ɜ) forms, of possessing uppercase variants (Ǝ/Ə), and of being phonetically pronounceable—the decision was made not to employ them, in order to ensure a higher level of textual clarity and accessibility.

This choice once again underscores the utopian nature underpinning the work presented here: not *utopia as the unrealizable*, but as a critical tension emerging from social challenges, inviting us to consider different pathways toward their resolution.

In light of these reflections, the volume positions itself as an open and evolving device—not a prescriptive manual, but rather a laboratory of possibilities, embracing the utopian perspective as a critical lever for imagining the university of the future.

The following text is the outcome of a collective effort, the result of the joint work of five universities, which are described in greater detail in the subsequent sections.

The hope for those engaging with this work—whether students, teachers, or curious readers—is to become active participants in this utopian workshop for an accessible and inclusive university, to embrace its challenge, and to contribute to spreading its vision.

Part I.
Charting the Routes: The UDL Model as a Compass for an Inclusive University

Universal Design for Learning as a driver of inclusive transformation in Higher Education: toward New Cultures of Difference

Andrea Fiorucci
(University of Salento)

1. UDL in Higher education

Although Universal Design for Learning (UDL) was originally conceived and primarily implemented in school settings, in recent years an increasingly extensive and consolidated body of scientific literature has progressively extended its application and theoretical reflection to the university context. At the core of UDL principles lies an epistemological and interpretative approach based on openness to the personalization and diversification of teaching and learning processes. This approach manifests not only in methodological and procedural tools but also in attitudes and representations aimed at promoting a transformation of the university from an elitist and selective environment into a welcoming, democratic, and accessible context for an increasingly heterogeneous and diverse student population.

Although still slow and partial, the dissemination of UDL research and experimentation in higher education appears closely linked to the now unavoidable need to rethink the university itself—not as a self-contained, static, and self-referential institution, but as a dynamic ecosystem capable of engaging with the profound sociocultural changes that characterize contemporary societies. These transformations, made possible in part by the democratization of culture and education, have revealed the presence in university classrooms of a multiplicity of learning needs, sociocultural backgrounds, and conditions of access to knowledge, which require inclusive, flexible, conscious, and diversity-respecting instructional design.

Alongside this cultural openness, structural and organizational resistances per-

sist and slow down widespread adoption: the complexity of the university setting, characterized by often non-institutionalized course design timelines and a high degree of faculty autonomy, combined with the rapid pace of educational processes and the absence of shared models for instructional innovation, makes systemic implementation of UDL principles more difficult. This highlights the urgency of directing transformative interventions in higher education toward a strategic investment in faculty development, fostering training and mentoring processes aimed both at current faculty and, especially, at the next generation of academics.

Within this perspective, the DANTE-U Project of Relevant National Interest, of which these guidelines represent one of the most significant outcomes, has placed particular emphasis on the university context, identifying three main areas of challenge and innovation:

– valuing UDL in universities as an educational response to the growing diversity of the student population, which can no longer be reduced to the "standard" or "average" student;
– adopting UDL as a perspective capable of improving the quality of teaching and learning processes, promoting a reflective and inclusive approach for both students and faculty;
– applying UDL in the context of faculty development, understood as a strategic lever for professional growth and cultural transformation within the university.

These three thematic cores thus constitute the main areas of focus for providing a meaningful framework and interpretative horizon within which to situate the actions and project outcomes presented in the following sections.

2. The fragility of the average Student Model: from the norm to human variability in learning

For a long time, inclusion was interpreted within the boundaries of a predominantly compensatory paradigm, aimed at implementing simplification measures and corrective strategies to enable learners with special educational needs to approximate a normative educational model, ideally embodied by the "average/standard student." However, from a UDL interpretative perspective, it becomes

evident that such a view is not only reductive but also profoundly inadequate for understanding the complexity of contemporary learning contexts. UDL overturns the "deficit-oriented" logic, recognizing difference not as a deviation to be contained or corrected, but as a generative resource that, if properly valued, can drive innovation and quality for the entire academic community.

Given that UDL builds its theoretical architecture on the proactive and intentional design of flexible, dynamic, and universally accessible learning environments, it is clear that this perspective allows for overcoming the persistent notion of homogeneity among student profiles, ensuring equal opportunities for participation and academic success regardless of learners' biographical, cognitive, and experiential characteristics. In this sense, interindividual variability is no longer considered an exception to manage, but a constitutive condition of every educational process (Rose & Meyer, 2006; Fornauf & Dangora Erickson, 2020).

This approach becomes particularly significant when considered in light of the historically documented transformation of the university student population. As noted by Choy (2002), for a long time, university students shared common characteristics: direct access to higher education after a linear and successful school trajectory, origins in privileged socioeconomic contexts, stable residence in the university city, and full-time dedication to studies. Mass access to tertiary education and profound social, political, and economic transformations in the postwar period, however, have substantially altered this profile: students without privileged backgrounds have progressively become the norm (Devlin, 2010; Ogren, 2003).

The term non-traditional student, although conceptually fluid and contextually variable (Bell, 2012), is now widely used in the literature to refer to students who do not identify with the traits of the traditional student. This interpretative category is complex and multidimensional, encompassing a plurality of biographical, social, and educational conditions that significantly influence learning trajectories, participation processes, and the sense of belonging to the academic environment.

Among the main dimensions defining this category, the literature identifies: being first-generation (Thomas & Quinn, 2007; Romito, 2021), the need to balance work and study (Callender, 2008; Triventi, 2014), age over 25 (Christie, 2009; Norris, 2011), and residential status, which may involve commuting or living with family (Jarvis, 2005; Hauschildt et al., 2021).

Within the DANTE-U project, these key dimensions of non-traditionality were considered to interpret the various trajectories through which students experience and give meaning to university life:

- *Parenthood*. The dimension of parenthood challenges universities to accommodate and support students who experience maternity, paternity, or pregnancy during their studies. Such experiences affect time management, attendance, and continuity of learning, making the reconciliation of family responsibilities and academic commitments a crucial domain for inclusive and flexible policy design.
- *Work.* The student-worker condition represents one of the most common forms of non-traditionality, as it introduces variables related to the type and stability of employment, contractual arrangements, and time compatibility between work and study. Balancing these spheres generates complex dynamics that influence learning rhythms, participation in academic activities, and overall student well-being, requiring universities to adopt organizational and pedagogical models that promote flexibility, recognition of prior skills, and continuity in study paths.
- *Socio-linguistic-cultural disadvantage.* The socioeconomic, cultural, and linguistic level of the family of origin represents another axis of student diversity. Educational and cultural capital inequalities intersect with national or international origin, creating situations of disadvantage that may affect access, retention, and academic success. Added to these are language barriers, which can limit comprehension of disciplinary content, active classroom participation, and full inclusion in academic dynamics. Universities are thus called to develop support and mediation mechanisms that value diverse backgrounds and uphold the right to equitable study conditions.
- *Special educational and learning needs.* An additional layer of complexity concerns the presence of special educational needs, including disabilities or specific learning and attention disorders. These situations may involve varying degrees of emotional and relational vulnerability, alongside the potential use of assistive technologies for communication, mobility, or personal autonomy. Universities are therefore tasked not only with providing compensatory or technical support measures but also with fostering a culture of widespread accessibility, aimed at removing educational and organizational barriers and recognizing diverse ways of learning, participating, and representing oneself in the academic context.
- *Double enrollment.* Concurrent enrollment in multiple academic programs—such as different undergraduate degrees, postgraduate programs, doctoral studies, or artistic and musical institutions—represents another form of non-traditionality. This reflects complex educational choices and a high degree

of study and organizational commitment but may also expose students to overload and fragmentation of experience. Understanding these dynamics allows insight into the relationship between multidirectional learning, the sustainability of commitments, and personal efficacy perception.

– *Student-athletes.* Student-athletes represent a particular type of non-traditional students, as they must reconcile dual pathways of sporting and academic development, involving specific temporal, logistical, and psychological constraints. The dual career requires universities to provide recognition and support mechanisms that ensure compatibility between athletic commitments and higher education, promoting flexible organizational models, personalized pathways, and assessment sensitive to their needs.
– *Caregiving.* Student caregivers, defined as those engaged in ongoing or periodic care of family members, constitute an emerging variable in university inclusion, as it has significant implications for time management, attendance, individual study, and participation in extracurricular or international mobility experiences. This highlights the importance of academic policies attentive to role reconciliation and students' psycho-social well-being.
– *Commuting and off-campus status.* Commuting or living off-campus profoundly affects the quality of university life, presenting economic, logistical, and relational challenges that impact daily organization, time management, and integration into the academic community. Access to adequate housing, cost sustainability, and cohabitation dynamics influence not only retention but also students' sense of belonging and emotional stability.

Although the literature has documented the specific challenges faced by such students—from institutional barriers related to schedules and bureaucratic procedures, to situational barriers of an economic or organizational nature, and dispositional barriers linked to self-perception as learners (Bell, 2012)—universities still tend to structure themselves around an implicitly normative model favoring linear trajectories, thereby excluding or marginalizing non-standard biographical paths. Consequently, non-traditional students are often forced to negotiate their academic identity within frameworks that inhibit their potential, favoring passive adaptation rather than authentic expression and recognition of prior competencies.

However, adopting the UDL paradigm as a transformative framework reframes differences not as obstacles but as real-world data upon which to build inclusive learning environments. A university that seeks to overcome the rigidity of lec-

ture-based instruction and the standardization of pathways, structuring itself as an open, flexible context oriented toward the development of expert learners - autonomous, strategic, self-regulated, and intrinsically motivated - would be able to synergistically value both traditional and non-traditional students. This approach promotes not only equity but also educational excellence, as recognizing diversity becomes an enabling mechanism that allows all students to demonstrate high-level competencies along trajectories that, although sometimes non-linear, remain profoundly meaningful.

Ultimately, when student variability is acknowledged as a structural rather than exceptional condition, the integration of UDL and inclusive education extends beyond meeting the needs of the most vulnerable, emerging instead as a systemic strategy to ensure equity, well-being, and the development of human potential in all its forms, with particular attention to biographical profiles that, precisely because they diverge from the norm, are paradigmatic and transformative of contemporary complexity.

3. UDL: Principles and Guidelines

Based on contributions from cognitive neuroscience and developmental psychology, the UDL approach has gradually established itself in contemporary education as one of the most innovative and promising theoretical-practical models, due both to its conceptual robustness, grounded in empirical evidence, and to its capacity to promote widespread, transversal, and systemic educational interventions capable of impacting the entire instructional architecture (Murawski & Scott, 2021).

Inspired by the logic of architectural universal design, this approach pursues a dual objective: 1) on one hand, to support the development of "expert learners", who are not only able to acquire and process information, but also to transform it into functional, applicable, and transferable knowledge through metacognitive, reflective, and self-regulated processes; 2) on the other hand, to encourage educators to critically reconsider their pedagogical practice, guiding them toward the intentional construction of learning environments that, from the very design phase, incorporate multiple means of content representation, active student engagement, and diverse modes of knowledge expression.The theoretical framework of UDL, structured as a highly flexible and networked system, unfolds across three core principles, nine guidelines, and numerous practical recommendations,

recently reorganized (Figure 1 – CAST, 2024). It functions as a pedagogical matrix capable of supporting, in a systemic way, the creation of educational contexts in which interindividual variability is considered a structural starting point for re-thinking the entire teaching design.

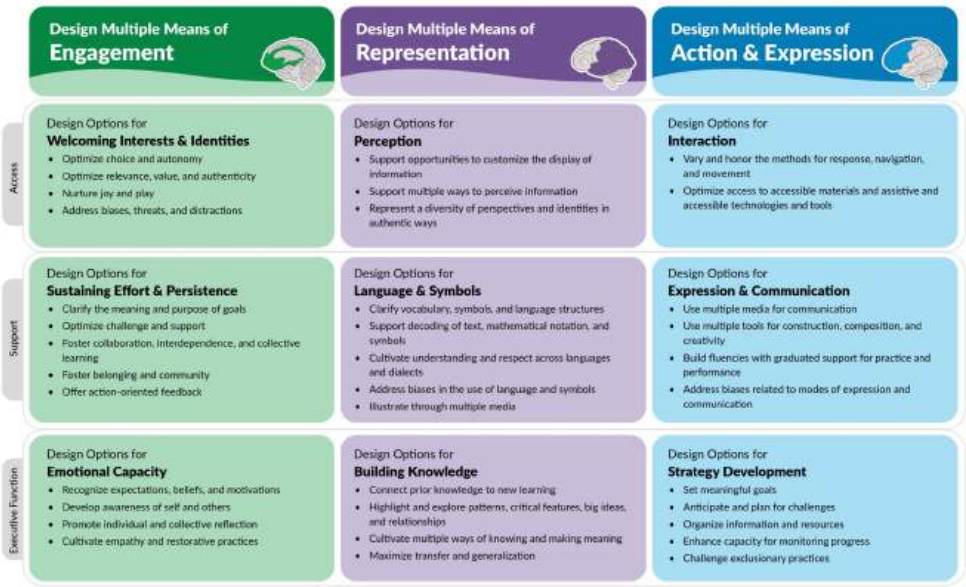

Figure 1. Universal Design for Learning Guidelines, Version 3.0 [graphic organizer]. Lynnfield, MA: Author

Within this framework, UDL proves particularly effective for both traditional and non-traditional students. Through its openness to flexibility, choice, and the intentional modulation of learning pathways, UDL provides students with the opportunity to express their competencies in creative, divergent, and self-reflective ways, while simultaneously strengthening their sense of agency and active engagement in educational processes.

Although UDL is not designed as a sector-specific model nor as a methodology intended for particular categories of students, but rather as a universalistic and aspirational approach aimed at valuing diversity in all its forms, for explanatory and instructional purposes we will, in the following sections, explore how the three guiding principles of the UDL framework, together with their sub-principles that articulate the corresponding guidelines, can be operationalized to enhance

the student learning experience, promoting personalized, challenging learning embedded within authentically inclusive relational contexts.

3.1 The Principle of Engagement

Promoting motivation and a sense of belonging among university students through informed choices and personalized challenges effectively summarizes the first UDL principle, articulated with particular attention to the needs of non-traditional students.

In the university context, engaging non-traditional students represents a critical challenge for creating truly inclusive learning environments. Students who are parents, workers, commuters, caregivers, athletes, enrolled in multiple programs, or coming from socio-culturally disadvantaged backgrounds navigate pathways characterized by complex biographical and organizational demands, which profoundly affect motivation, sense of belonging, and participation.

In light of this, UDL encourages the design of learning environments and pathways that, through the intentional deployment of differentiated and adaptable strategies, can foster interest, sustain long-term engagement, and promote self-regulation—all essential elements for deep and self-determined learning.

Through the three guidelines that articulate the Engagement principle, as outlined below, an operational framework emerges in which every student can be recognized and valued in their uniqueness, supported in becoming an expert, strategic, and determined learner.

– **Designing options to welcome interests and identities**

Recognizing and valuing the multiplicity of student identities and interests is essential for promoting authentic engagement in higher education. Traditional students, often more aligned with institutional temporal and organizational models, require pathways that acknowledge the variety of their cognitive, motivational, and cultural styles. Conversely, non-traditional students bring professional, familial, linguistic, or biographical experiences that, when properly integrated into the learning process, can constitute valuable educational and relational resources.

Designing options to welcome interests and identities therefore means creating environments in which each student can see themselves reflected in the con-

tent and activities, fostering authentic learning and a sense of belonging. This entails teaching that is open to the pluralism of languages and perspectives, where participation stems not from adherence to a single model but from the opportunity to bring one's own history, competencies, and meanings into the academic sphere.

– **Designing options to support effort and perseverance**

The Engagement principle requires instructional design to include strategies aimed at maintaining motivation over time, supporting the effort and perseverance of students with diverse educational trajectories and life circumstances. For traditional students, this may involve offering challenging tasks, constructive feedback, and clear progression pathways that generate satisfaction and a sense of competence. For non-traditional students, supporting perseverance is even more complex, as extra-academic variables (work, caregiving, commuting, financial vulnerability) may threaten continuity in engagement.

Designing options to support effort thus entails the adoption of flexible and adaptable tools, such as intermediate goals, personalized pathways, asynchronous modes, and formal recognition of acquired competencies. The combination of proportionate challenges and adaptive supports helps sustain motivation, fostering resilience and self-efficacy. In this perspective, perseverance is no longer understood as mere resistance to effort but as conscious and self-determined participation in a growth trajectory aligned with one's possibilities and aspirations.

– **Designing options for the regulation of emotions**

University learning is deeply intertwined with the emotional dimension, which influences the quality of engagement, self-confidence, and the capacity for self-regulation. Traditional students often experience anxieties related to performance, judgment, and peer comparison, whereas non-traditional students face more complex emotional dynamics, linked to the reconciliation of roles, isolation, feelings of inadequacy, or difficulties readapting to formal learning contexts.

Designing options for emotional regulation entails recognizing the centrality of affective experience and providing support tools that help channel emotional energy toward learning. Strategies such as formative feedback, metacognitive reflection moments, community-building practices, and the conscious use of communication technologies can facilitate the creation of a climate of trust and psychological safety.

3.2 The Principle of Representation

Within the UDL framework, the principle of Representation is based on the assumption that each student accesses, processes, and internalizes information differently, influenced by a multitude of cognitive, affective, cultural, and biographical factors that shape their individual learning style. This perspective is particularly relevant for non-traditional students, whose educational experiences are often characterized by heterogeneous trajectories, interruptions, skills acquired in non-formal or professional contexts, and life circumstances that profoundly impact the accessibility and meaningfulness of academic content.

For this student population, truly inclusive instructional design cannot be limited to material simplification or mere technical accessibility; it must encompass multiple representation strategies, integrating verbal, visual, graphic, auditory, and digital codes into a coherent and stimulating framework. The goal is to make content not only available but also cognitively and culturally accessible, allowing each student to relate to the languages and forms of university knowledge.

For example, working students, parents, commuters, caregivers, or those from socio-linguistically disadvantaged backgrounds require flexible representation pathways that accommodate different learning times and modes: multimodal materials available asynchronously, accessible video lectures, visual summaries and concept maps, interactive digital tools, and customizable audio or textual resources. These tools help overcome the rigidity of traditional transmissive models and enable participatory and self-directed learning, in which students can construct meaning based on their own experiential background.

Through the three guidelines that articulate the Representation principle, both traditional and non-traditional students can be supported in authentic learning, promoting equitable access, deep understanding, and the transformation of knowledge into generative competence, allowing each student to become an active and aware participant in their university education.

– **Designing options for perception**

No meaningful learning can occur if information is not perceivable clearly and in ways that align with students' characteristics, schedules, and life circumstances. This is particularly important for non-traditional students, who often need to manage learning in fragmented contexts due to work, family responsibilities, or logistical constraints. They therefore require flexible, multimodal, and adjustable instructional materials.

Providing perceptual options means offering multiple pathways to access content: adaptable digital texts, subtitled videos, downloadable podcasts, accessible slides, and materials in audio or visual formats, with possibilities for customization (text size, contrast, playback speed). Such solutions reduce cognitive load and enable students to integrate learning into their daily routines.

– **Designing options for language and symbols**

Language and symbols are primary mediators of academic knowledge, but they can also constitute significant barriers to comprehension and inclusion. For instance, non-traditional students from diverse socio-linguistic and cultural backgrounds may struggle with specialized terminology, disciplinary codes, or the communicative conventions of the academic environment.

Designing options for language and symbols involves deconstructing the rigidity of academic discourse, making content more accessible without diminishing its substance. This includes the use of disciplinary glossaries, concept maps, infographics, visual schemas, subtitles, translations, and spaces for linguistic clarification and dialogue. The integration of multimodal channels (textual, visual, symbolic, digital) helps students navigate meaning, reinforcing understanding through parallel and complementary codes. For non-traditional students, this approach promotes cultural access to knowledge, enhances a sense of belonging, and reduces the symbolic distance between academic knowledge and life experience. Language thus shifts from a potential tool of exclusion to a vehicle for cognitive equity, capable of embracing diverse learning pathways and identities.

– **Designing options for knowledge construction**

Perceptual and linguistic accessibility is only the entry point to university learning; the true educational goal is to guide students in active, personal knowledge construction, where content is understood, processed, and transferred to meaningful contexts.

For non-traditional students, this process is often influenced by prior experiences, professional skills, and social or familial roles that shape their perception of knowledge. Inclusive instructional design must recognize and leverage these non-formal and informal knowledge assets, transforming them into a springboard for academic learning.

Approaches such as active learning, problem-based learning, service learning, and the use of authentic cases enable the connection of theory to experience, strengthening motivation and self-efficacy. The university thus becomes a gener-

ative environment, where academic and experiential knowledge intertwine, allowing each student to construct meanings aligned with their personal biographical trajectory.

3.3 The Principle of Action and Expression

This principle is grounded in the recognition of interindividual variability in how students engage with learning environments, tackle cognitive challenges, and translate acquired knowledge into communicable forms. It explicitly refers to the activation of the brain's strategic networks, which are responsible for organization, planning, and the execution of actions, and therefore for the operational expression of learning.

This perspective is particularly relevant for non-traditional students, who bring a variety of experiences, skills, and communicative habits developed in professional, familial, or social contexts outside the academic sphere. For these students, the challenge often lies not in understanding content, but in translating knowledge and skills into forms of expression compatible with university codes and timelines. Standardized assessment practices, predominantly based on written output or oral presentation, risk penalizing these "alternative" forms of competence, rendering talents and situated learning less visible.

The UDL approach therefore encourages the multiplication of expressive and communicative pathways, giving each student the opportunity to choose the channel that aligns best with their cognitive and biographical identity. Working students or caregivers, for example, may find it easier to demonstrate competencies through applied projects, case studies, simulations, or multimedia narratives, leveraging their professional and relational experiences, while students from sociolinguistically diverse backgrounds may benefit from visual or performative assessment modes, emphasizing conceptual clarity and authenticity over mastery of specialized language.

– **Designing options for interaction**

In the university context, designing options for interaction is essential to ensure that all students—traditional and non-traditional alike—can not only acquire knowledge but also actively participate in knowledge construction, expressing competencies, experiences, and individual perspectives. For non-traditional students, who often balance academic study with work, family, or caregiving respon-

sibilities, interaction cannot be conceived as a singular, synchronous experience; instead, it must take the form of a flexible, dialogic ecosystem that adapts to diverse schedules, spaces, and life rhythms.

In this perspective, the intentional and critical integration of digital technologies is not merely a technical support but a lever for participation. Accessible e-learning platforms, asynchronous discussion forums, collaborative tools (such as Padlet, Miro, or Google Workspace), and immersive simulation environments enable students to interact with content, peers and faculties in personalized ways, fostering active, reflective, and co-constructed learning.

For working or commuting students, asynchronous access to resources and the ability to contribute via personalized digital outputs (videos, presentations, audio comments, or visual notes) expands participation and valorizes diverse expressive languages. Similarly, for students from heterogeneous socio-linguistic contexts, technology can serve as a mediating channel, reducing communication barriers and strengthening a sense of belonging and visibility. In this vision, interaction is not merely a means of exchange but a constitutive dimension of student subjectivity, a space where each individual can engage their skills, identity, and professional or cultural expertise to build community.

– **Designing options for expression and communication**

Designing options for expression and communication addresses the need to ensure equitable opportunities to represent and share knowledge, through multiple and complementary tools capable of valuing the diversity of cognitive and communicative profiles.

For non-traditional students, often bringing professional, relational, and intercultural experiences, the opportunity to express competencies via alternative communicative forms is a key factor in motivation and success. Alongside academic writing and oral discussion, it is crucial to provide multimodal channels such as podcasts, video presentations, infographics, digital learning artifacts, reflective portfolios, or collaborative projects. These tools not only broaden expressive possibilities but also allow students to translate personal experience into academic knowledge, strengthening the connection between theoretical knowledge and lived practice.

– **Designing options to develop strategies**

Within the UDL framework, fostering executive functions—the ability to plan, monitor, adapt strategies, and self-regulate—is a central dimension of the

Action and Expression principle. For non-traditional students, who often manage complex roles and responsibilities, these skills are essential to maintaining motivation, organizing study, and sustaining active participation over time. Instructional design should therefore provide tools and practices that facilitate self-regulation and strategic learning management: digital planners, shared study maps, digital portfolios, progress monitoring systems, and frequent formative feedback. These resources help students maintain direction in their learning trajectory, develop metacognitive awareness, and cultivate a growth mindset (Dweck, 2006).

For students dealing with commuting, caregiving, or work responsibilities, such tools allow effort to be distributed over time, preventing dropout and fostering resilience. In this perspective, faculties assumes the role of a strategic facilitator, who not only transmits knowledge but also guides students in constructing effective learning routines, managing cognitive load, and self-assessing their strategies.

In this sense, the UDL principle does not merely diversify modes of expression but aims to develop strategic, self-regulated learners capable of acting intentionally on their learning. For non-traditional students, this translates into transforming fragmented experiences into a coherent, goal-oriented pathway, where flexibility is paired with effectiveness and competence emerges as a form of personal and professional self-determination.

4. UDL as a Faculty Development approach

Socio-economic changes over recent decades have profoundly impacted the composition of the university student body, driving an irreversible shift from elite environments to global and diverse learning contexts inhabited by a wide range of traditional and non-traditional students, characterized by heterogeneous social and cultural backgrounds. These shifts manifest in complex subjective experiences and diverse life circumstances (e.g., parenting, employment, caregiving, disability). Consequently, as previously discussed, the university—historically perceived as an impregnable bastion of knowledge, or, as described in the literature, "as an instrument of social inequality and reproduction" (Stentiford & Koutsouris, 2022, p.1)—cannot avoid fully embracing its educational responsibility, reconsidering rules, content, methods, and course structures to better align with the unique life situations, disadvantages, or vulnerabilities of its students.

No longer a *turris eburnea* separated from its context (Bombardelli, 2016), the entire academic community must adapt to such variability. As early as 1998, UNESCO, through the *World Declaration on Higher Education for the Twenty-First Century*, emphasized the crucial role of universities in shaping potential pathways for change and development through diversified educational models and organizational, administrative, and pedagogical flexibility. Such approaches are essential to ensuring, on a basis of equity, access to higher education, persistence in studies, and active participation in academic life for every student (Coyne et al., 2012). In contrast, standardized, rigid, and conventional educational offerings—modeled on an "average" student archetype—fail to guarantee either quality or engagement, instead posing risk factors for failure, dropout, and exclusion.

Universities must therefore promote faculty development, supporting faculties in acquiring pedagogical, methodological, and digital teaching competencies, while also incentivizing processes and systems for evaluating teaching performance. Pedagogical-methodological contributions are crucial for driving such change (Serbati & Felisatti, 2022). Faculty development, often operationalized through Teaching and Learning Centers (TLCs), provides both the epistemological framework and organizational context for this transformation.

Recognized as an effective catalyst for change (Murawski & Scott, 2021), UDL aligns perfectly with a proactive and flexible pedagogical framework, where the universality of methodological proposals ensures recognition of differences and genuine accessibility in learning processes. Despite many faculties acknowledging the value of inclusive teaching strategies, the literature highlights a significant gap between theoretical awareness and practical application of UDL methodologies (Gawronski et al., 2016; LaRocco & Wilken, 2013; Lombardi et al., 2015; West et al., 2016).

Limited implementation of UDL is attributed to several challenges, including insufficient knowledge of UDL among faculty, lack of adequate training, and scarce resources for integrating inclusive strategies into university teaching (Dallas et al., 2016). Structural and institutional factors further affect adoption: insufficient support from the university, lack of suitable instructional materials, and limited time to redesign curricula for inclusivity are significant barriers (Lombardi et al., 2011; Lombardi & Murray, 2011; Raue & Lewis, 2011).

Despite this persistent gap between inclusive principles and transformative practices, literature identifies UDL adoption, combined with conscious use of accessible technologies, as a strategic lever for change. A crucial variable is faculty training, both pre-service and in-service, in inclusive education and UDL—an

essential condition to translate inclusion principles into sustainable, systemic teaching practices. Traditional academic training often focuses on disciplinary knowledge and research skills, frequently overlooking the "hot and invisible" pedagogical and relational dimensions of teaching. In this context, faculty development emerges as a key driver of teaching innovation and inclusion (De Rossi & Fedeli, 2022), contributing not only to higher teaching quality but, above all, to the creation of student-centered, inclusive learning environments.

Systematic, continuous faculty development—conceived as a foundational element—becomes a strategic lever for activating cultural and organizational change in academic institutions. This integrated training approach rests on three interdependent dimensions: pedagogy, personal and professional development of faculty, and the evolution of the academic organization as a whole (De Rossi & Fedeli, 2022; Lewis, 1996; Lotti & Lampugnani, 2020).

For inclusion to become a defining feature of the university's identity and mission, institutions must take active and distributed responsibility in designing and implementing structured educational policies that create accessible learning environments for all students. In recent years, there has been growing international interest in designing, implementing, and evaluating programs specifically aimed at including non-traditional students (Cunningham, 2013; Garrison-Wade, 2012; Getzel, 2008; Madriaga et al., 2010; Redpath et al., 2013). Literature analysis identifies three key directions confirming the strategic value of faculty development for promoting genuinely inclusive university environments:

1. *Being informed: awareness is the first step toward inclusion.* Faculty must possess updated knowledge of non-traditional students' rights and relevant curricular adaptation policies. Inclusion cannot rely solely on individual goodwill; it requires awareness of the legal and institutional framework governing inclusive policies. Well-informed faculties capable of recognizing and applying necessary curriculum adjustments help dismantle structural and cultural barriers (Fuller, Bradley & Healey, 2004).
2. *Being trained: developing professional skills to design flexible and inclusive teaching.* Training must translate into operational competence. Effective programs not only transfer knowledge but also cultivate practical skills and an inclusive mindset. Faculties who participate in UDL or inclusive education courses report acquiring tools to adapt programs, design accessible environments, and respond confidently to student needs. Importantly, these adaptations benefit the entire student population, not only non-traditional students, underscoring

the universalistic nature of inclusive teaching (Gorard et al., 2006; Pliner & Johnson, 2004). Several authors therefore advocate for mandatory inclusion training for all university faculty (Morina et al., 2015). However, in practice, faculties who most need such training are often the least involved, as these programs remain largely optional. Universities must reconsider training policies, integrating inclusion content into initial teacher education and designing interventions capable of engaging a broad, diverse audience.

3. *Being aware: training as a means of transforming attitudes.* Well-structured training has a profound impact on faculties' attitudes toward students. Research shows that increased sensitivity to non-traditional students' needs correlates with improved teaching practices, educational relationships, and professional engagement (Davies & Houghton, 2013; Lombardi, Murray & Gerdes, 2011; Murray & Gerdes, 2011; Schelly, Davies & Spooner, 2011). Emotional aspects of educational relationships are also central: in one study, students highlighted faculty availability, care, and positive attitudes as critical to their academic success (Stein, 2014). These findings reinforce the idea that, alongside effective methodologies, students need to feel welcomed and recognized as active participants in the educational process.

In conclusion, faculty development represents not only an opportunity for professional growth but a strategic investment to transform institutional culture. Awareness campaigns, mandatory training policies, and targeted inclusion programs can create a virtuous ecosystem in which knowledge, competence, and awareness integrate to foster a truly inclusive, accessible, and student-centered university-leaving no one behind.

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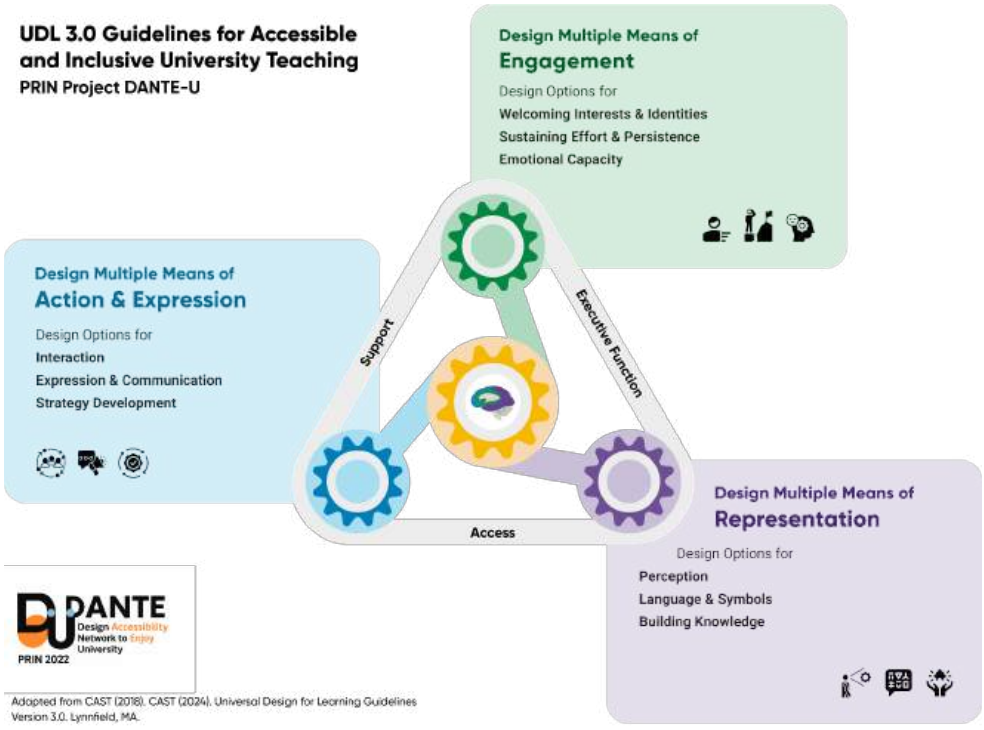
Part II.
UDL Guidelines for Accessible and Inclusive University Teaching



Designing Multiple Ways of Engagement

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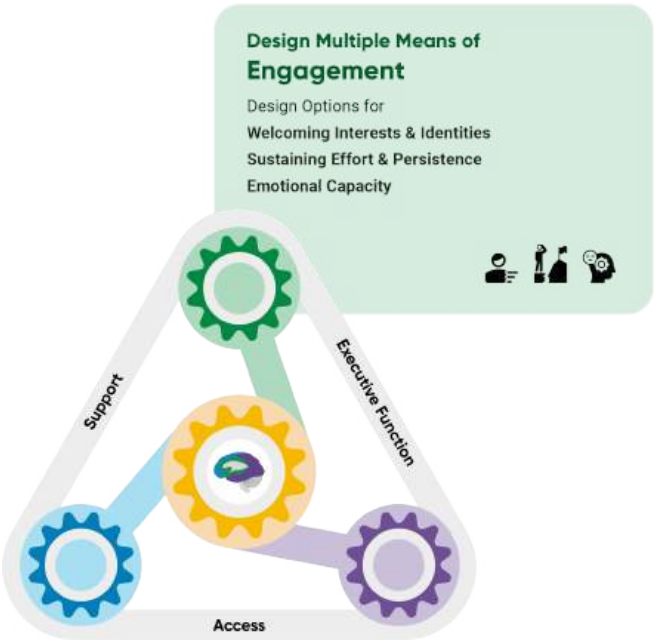

Designing diversified approaches to motivation and engagement means acknowledging that individual differences significantly influence how each person relates to learning. In the academic context, this principle highlights key aspects of the university experience, such as engagement, motivation, participation, and sense of belonging. These factors play a crucial role in shaping students' connection to

their educational pathway. Research in the field shows that students who are more engaged, motivated, and active are more likely to achieve academic success, with positive effects also on personal satisfaction, continuity of studies, and the reduction of dropout risk. Moreover, a strong sense of belonging and inclusion within the university environment supports students in maintaining focus and investing more consciously in their learning journey. This, in turn, strengthens their ability to cope with challenges, fosters the development of positive relationships with faculty and peers, and reinforces their bond with the academic institution.

1. Designing Options to Embrace Interests and Identities

To foster engagement in the learning process, it is essential to recognize and value students' unique interests and identities, drawing on dimensions such as culture, gender, ethnicity, language, individual functioning, and contextual specificities. It is therefore crucial to acknowledge the wide variability in the factors that attract and engage students, as well as those that contribute to creating a learning environment that upholds each individual's dignity. This variability not only differs from student to student but may also evolve over time and across contexts. As students grow and acquire new knowledge and skills, their interests change, as does their relationship with the various dimensions of their identity. Experiences, environments, and developmental trajectories continuously shape how individuals relate to learning and to others. A learning environment that values these differences and safeguards the dignity of each student is essential to ensure active participation and equitable access to the learning process.

1.1 Optimize Individual Choice and Autonomy

One possible strategy to enhance university students' motivation is to offer, in relation to the learning objectives explicitly stated in the course syllabus, a range of choice options. These may concern the personalization of content, tools, recognition methods, or the timing and management of activities. Such strategies, aligned with students' interests and preferences, enable them to take greater initiative in starting a task and, at the same time, to attribute more attention and significance to the outcomes achieved. In doing so, students are supported in developing autonomy within the learning process.

Recommendations:

- to provide a variety of assessment methods (e.g., written exams, interactive presentations, oral examinations) in order to address different learning styles and preferences;
- to make a wide range of study and in-depth materials available (scientific articles, presentations, audiovisual resources, graphic representations) to facilitate multimodal access to content;
- to promote collaborative learning experiences, allowing students—individually or in groups—to select topics from those addressed in the course;
- to ensure the accessibility of content and information presented, in accordance with the principles of inclusive design and current regulations;
- to allow for the definition of personalized deadlines for intermediate tasks and assessments, promoting flexibility and accountability in individual learning paths;
- to support student autonomy by encouraging the formulation of short-term, measurable, and verifiable learning goals;
- to offer optional in-depth modules or activities aligned with individual interests and preferences, in order to broaden and personalize the learning experience;
- to introduce flexible time management measures, provided they remain consistent with the achievement of final learning objectives;
- to encourage practices of self-monitoring and peer tutoring, fostering responsibility and co-construction of knowledge;
- to plan dedicated periods or sessions for consolidation and in-depth learning.

Examples of activities:

- Students choose the format in which to present/share their work (e.g., video, podcast, report, PowerPoint, etc.).
- Faculties offer students the opportunity to participate in Collaborative Online International Learning (COIL) as an optional and supplementary activity. University students may choose to join the project and personalize their academic experience. For example, they may attend lectures delivered by a professor from a foreign university, participate in international working groups with students from other countries, or eventually turn this online experience into an Erasmus outgoing mobility opportunity.
- The faculty member may propose activities with flexible deadlines, encouraging students to take responsibility for managing the submission of assigned tasks. For instance, a reflective assignment could be submitted within a three-week window, allowing each student to choose the most suitable submission date, as long as it does not exceed the final deadline.
- Faculties provide self-assessment rubrics that allow students to track their progress toward short-term goals, promoting self-directed learning.
- The teacher may propose a range of extracurricular activities such as webinars, hands-on workshops, or guest lectures to support students' diverse interests and allow for a more personalized academic pathway based on individual preferences and goals.
- Peer-to-peer help desks – A collaborative support system where experienced students (tutors) assist less experienced peers (participants), fostering learning, integration, and motivation. This activity enhances students' autonomy and self-awareness throughout their academic journey and contributes to building a sense of community and belonging; it also helps prevent confusion and dropout, especially among first-year and international students.
- The teacher may propose optional weekly activities, including: guided review sessions using selected materials (videos, articles, exercises); in-depth exploration of personally relevant topics related to the course; participation in online forums or study groups; creation of self-correcting quizzes or flashcards; and production of creative materials such as concept maps, infographics, or podcasts.

1.2 Optimize Relevance, Value and Authenticity

One of the main questions university students often ask themselves is: "*Am I really interested in what I'm studying? Will it be useful in the workplace and in everyday life?*" The perception of a gap between academic education, personal interests, and professional needs can impact motivation, engagement, and, in some cases, even academic success. For this reason, it is essential to rethink the role of the university not only as a space for theoretical learning, but as a meeting point between knowledge, work, and real life. It is important that the objectives and content defined by university members are authentic, relevant and meaningful.

Recommendations:

– to integrate practical activities that simulate real and professionally relevant situations for students' future careers, such as virtual internships, problem-

solving tasks based on authentic or plausible cases, and project-based learning pathways. These activities allow students to engage with concrete and interdisciplinary problems;
– to provide structured networking opportunities with companies, institutions, and organizations, aimed at fostering direct contact with the professional world;
– to use authentic and realistic assessment methods—such as portfolios, project work, or public presentations—that highlight applied and transversal skills;
– to organize classroom meetings with alumni who have completed their academic studies and pursued a professional career, enabling students to engage in dialogue and ask questions related to doubts, curiosities, and career development prospects;
– to value students' real interests by involving them in the selection of study topics that are meaningful and relevant to their cultural, social, or personal contexts;
– to promote situated learning experiences aligned with the academic curriculum and capable of strengthening the connection between academic knowledge and real-world applications.

Examples of activities:

- Students are invited to engage in authentic research activities by exploring current, socially relevant issues. Each student collects first-hand accounts that reflect the concrete needs of real communities through interviews with residents, local activists, and industry workers.
- Students address a given topic starting from well-established scientific studies and evidence-based cases, enabling active participation, in-depth exploration, and experiential learning, while enhancing their analytical and reflective skills.
- The university faculty presents students with a series of problem-scenarios featuring critical situations they may encounter in their future professional lives. Students are encouraged to practice problem-solving by formulating concrete solutions to these challenges, drawing on both theoretical knowledge and practical skills acquired during the course.
- The university lecturer organizes situated learning sessions through the development of networks between the university and local institutions. A number of lessons may be held in specific settings such as libraries, museums, archives, correctional facilities, schools, and other relevant contexts.
- In student mentoring programs, each student is paired with an experienced professional mentor, who supports their academic and career orientation both in Italy and abroad. Monthly meetings are scheduled to discuss future prospects, doubts, and goals. The mentor helps students identify and enhance their strengths, prepare effective CVs, and navigate the transition to the job market, fostering self-awareness, personal growth, and professional development.

1.3 Nurture Joy and Play

In a university setting, fostering enjoyment and pleasure in learning not only positively impacts students' motivation but also supports the development of key transversal skills such as creativity, collaboration, and problem-solving. Creating learning environments that cultivate enjoyable experiences in various forms—such as interactive games, hands-on activities, storytelling moments, and opportunities for reflection—helps transform the university into a space where students not only acquire knowledge, but also find joy in discovering, exploring new ideas, testing their abilities, and building a sense of community.

Recommendations:

- to use gamification techniques (badges, virtual points, challenges, missions, team games), experiential workshops, simulations, educational escape rooms, and interactive storytelling to make learning more engaging;
- to foster a positive classroom climate by using respectful humor to reduce stress and enhance students' sense of belonging;
- to share student outcomes through structured reflection sessions, digital exhibitions, online repositories, and creative presentations to encourage sharing and build a sense of community;
- to create a positive feedback system: during lessons, students can receive real-time feedback through digital platforms or during group discussions;
- to use positive and encouraging language that emphasizes progress made and goals achieved;
- to organize celebration events to showcase student achievements. Periodic events may be held where students present their projects or accomplishments in creative and festive ways;
- to include moments for relaxation and idea exchange through active breaks during class sessions.

Examples of activities:

- It may be useful to create a digital repository of exemplary works, that is, a visible recognition system—either in the classroom or online—where the best results are showcased (not as a competitive judgment, but as a testimony of commitment and creativity), thus motivating students to give their best.
- The lecturer could propose weekly challenges or personalized missions: each week, students could receive a "mission" related to the course content, challenging them to explore new concepts or apply knowledge in practical ways, while giving them the freedom to choose how to approach it. Once completed, the mission could be shared with peers or presented in class.
- An engaging learning activity might also take the form of a simulation game, such as an escape room, in which students must solve a complex case within a set timeframe, developing problem-solving skills. Each question or task solved provides clues to progress to the next stage. This approach stimulates positive interdependence, collaboration, creative thinking, and time management.
- Faculties could integrate game-based elements into academic courses—such as points, challenges, and rewards—to encourage student engagement and make learning more dynamic. For instance, a level system could be designed, allowing students to progress by completing activities or answering quizzes creatively.
- In addition, the faculty may use online platforms that foster interaction among students in playful ways—through themed discussions, weekly quizzes with immediate feedback, educational games, or applications that spark interest in the subject matter.
- Students, working in small groups, could produce infographics or academic posters illustrating theoretical concepts covered in class.
- Another meaningful proposal could be the use of allobiography: students collect personal anecdotes (written in the third person on a proposed theme), share and reflect collectively (reading in a circle and discussing), co-construct a collective narrative (integrating the stories in groups), and finally stage the outcome (a theatrical performance of the final dramaturgy).
- Finally, the faculty member could schedule active breaks, short moments during which students move around the classroom to counteract sedentariness, enhance learning efficiency and foster effective peer relationships.

1.4 Address Biases, Threats and Distractions

In university settings, where student populations are increasingly diverse, it is essential for faculties to create welcoming and supportive environments in which students—coming from a wide range of life experiences—feel valued, encouraged to express their views, and empowered to engage in dialogue. To achieve this, it is crucial to address biases, threats, and distractions that may hinder the learning process. This means going beyond ensuring physical safety, by adapting activities to students' individual needs and backgrounds in order to foster an environment that truly supports learning.

Recommendations:

- to structure lessons in a clear and linear way, providing precise instructions and specific examples to support comprehension;
- to share the schedule and timing of activities in advance, allowing students to plan ahead, anticipate tasks, and prepare effectively;
- to agree on the possibility of breaks or time-outs during lessons to support students' concentration and well-being;
- to schedule specific moments (e.g., during breaks) dedicated to listening to and addressing students' concerns about the learning environment, collaboratively defining possible solutions;
- to create safe and anonymous channels through which students can report episodes of discrimination without fear of judgment or repercussions;
- to avoid bias when forming working groups, and actively promote heterogeneous group configurations that include students with diverse experiences, skills, and backgrounds;
- to reflect from an inclusive perspective on the diversification of course content and exam materials, in order to value and engage the plurality of cultural, social, and gender perspectives present in the student community;
- to use neutral, respectful, and culturally sensitive language in all academic communications;
- to provide clear assessment rubrics with transparently defined criteria, in order to clarify expectations and minimize subjective interpretation.

Examples of activities:

- The teacher sets up a "reflection box" where students can anonymously submit notes describing negative experiences they have encountered or observed during the course. Each week, faculties select one note at random and invite two students (on a rotating basis) to interpret and reflect on the emotions expressed and propose possible solutions for the future.
- The faculty member proposes bias deconstruction activities using articles, texts, case studies, guided discussions, role-playing, etc., to encourage reflection on implicit prejudices and stereotypes.
- Students engage in a role-playing activity in which each person assumes the identity of someone different from themselves (in terms of gender, culture, disability, or socioeconomic background) and experiences university or workplace scenarios from that perspective.
- After a test or written exam, faculties dedicate time to a collective review of the most common errors, fostering open discussion on how to avoid them, rather than simply returning grades without explanations.
- The faculty members actively involve Erasmus students in collaborative group work by inviting them to introduce themselves and share information about their home university and educational system. Encourage periodic rotation of group members to expand interactions and foster a broader and more inclusive social network.
- The teacher could set up a scenario in which a student with a foreign accent is interrupted or ignored during a group discussion. The scene could then be re-enacted through a role-playing activity, followed by a whole-class reflection on emotions, behavioral alternatives, and respect for differences. This exercise would help uncover the mechanisms of exclusion linked to linguistic diversity.
- The teacher might also propose free-writing exercises, asking students to introduce themselves by writing continuously—without stopping to think, reread, or erase—for a set amount of time (one minute). Once the writing phase is over, students randomly exchange their texts so that each one holds someone else's work. They are then invited to read what they have received, interpreting their peer's words, stepping into their shoes, and perhaps recognizing parts of themselves in what they read.
- Each student could prepare a presentation or a "cultural box" that represents their own culture or an important aspect of their identity. Other participants listen and ask open-ended questions to foster mutual understanding and dialogue.
- Finally, each student (or group) could present a traditional dish from their culture of origin. The activity may include a description of the dish and its cultural meaning, an oral presentation supported by visual materials (slides, videos, or photographs), and the sharing of anecdotes, curiosities, proverbs, or customs connected to it—possibly concluding with a collective tasting moment, where feasible.

2. Design Options to Sustain Effort & Persistence

In the university context, learning is a complex process that requires not only the transmission of knowledge, but also the creation of conditions that foster student engagement and perseverance. Each student faces challenges differently, influenced by personal, social, and contextual factors. To support engagement and persistence, it is essential to identify meaningful goals, provide support, promote collaboration, and offer continuous feedback throughout learning activities. These elements help students stay focused on their learning and feel motivated to achieve their goals.

2.1 Clarify the Meaning and Purpose of Learning Goals

To support students' engagement and perseverance, it is essential that they clearly understand the goal to be achieved and how it can be meaningful for their future profession and, more broadly, for their lives. It is helpful to clearly and explicitly highlight the purpose and significance of the learning objectives, linking them to students' life experiences or anchoring them in case studies, evidence-based research, and similar resources. In this way, the content studied does not remain abstract or reduced to the mere memorization of dates, events, or methodologies, but instead becomes the object of reflection aimed at building usable and transferable knowledge.

Recommendations:

- to present the learning objectives of the course and of individual lessons in a clear and accessible manner, sharing them through the faculty's webpage, interactive presentations, and the teaching materials provided;
- to begin each lesson with a brief overview of the objectives, linking them to real-life scenarios and emphasizing their relevance in professional and career-related contexts;
- to break down long-term objectives into medium-term milestones, accompanied by periodic monitoring of learning progress;
- to provide specific and structured feedback at regular intervals to support students' improvement over time;
- to encourage the use of documentation and monitoring tools—such as learning journals, portfolios, and digital applications (e.g., interactive boards, dashboards)—to help students reflect on both individual and collective progress through scheduled moments of review;
- to promote the use of time organizers to support effective planning and time management for completing study-related tasks;
- to set up regular reminders and timers for different activities, integrating them into the university's e-learning platforms (e.g., Moodle).

Examples of activities:

- The university faculty introduces the final project by asking students to design an innovative solution that does not yet exist but could address a common need and have a meaningful impact on everyday life. The project's goal is clearly defined, visualized on a digital board, and broken down into weekly objectives. Each student is encouraged to consider how their idea could fit into real-life habits and usage contexts, taking into account functionality, practicality, and relevance. Throughout the course, the faculty member provides ongoing feedback on student proposals, fostering discussion and analysis of exemplary cases aligned with users' interests and needs.
- The university faculty may create a dedicated section on the university's Moodle platform or another learning platform where course and lesson objectives are published in a structured and easily accessible format.
- The university faculty may include introductory slides in each course session, presenting specific objectives and highlighting their relevance for students' future professional paths.
- Each lesson may begin with a real-world case study connected to the learning objectives. This strategy allows students to approach theoretical content through the discussion of applied, practical scenarios.
- The university faculty may dedicate time during lessons to the participation of external experts, inviting professionals from the field to share how the course topics are applied in their careers.
- Simulations and role-playing activities may be proposed to foster experiential learning and practical engagement.
- The university faculty may implement digital tools that allow students and peers to visualize individual progress toward learning goals (e.g., progress dashboards).
- The university faculty may provide students with time-management tools, such as timelines or study schedules, including clear deadlines for readings, exercises, and revisions. These can be integrated into Moodle using reminder tools with notifications to support time management.
- The university faculty may schedule dedicated student support sessions, offering short meetings (online or in person) to assess progress and address any difficulties encountered.

2.2 Optimize Challenge and Support

In the university context, academic challenges can serve as a powerful source of motivation, but their effectiveness depends on the ability to balance task difficulty with appropriate support. The UDL framework emphasizes that students exhibit variability in how they respond to competition and task complexity, making the design of flexible instructional pathways essential.

To sustain successful task engagement, the learning environment must support access, participation, and progress toward increasingly complex goals. It is important to design a variety of tools and resources that stimulate engagement, provide motivating challenges, and, at the same time, guide students in managing cognitive and emotional tension. Effectively balancing available supports with task demands is key to ensuring a learning experience that is both challenging and engaging.

Recommendations:

- to provide immediate feedback focused on an external and modifiable locus, emphasizing that success depends on the adoption of effective strategies and sustained effort, rather than on any presumed lack of ability or competence;
- to use positive, encouraging, and motivating language to support students' perceived self-efficacy;
- to design learning activities with progressive levels of difficulty, allowing students to choose challenges that best match their individual learning profiles;
- to integrate engaging and challenging teaching strategies, including the use of technologies (e.g., escape rooms, gamification, interactive storytelling, debates);
- to incorporate activities that stimulate creative and divergent thinking, such as open-ended scenarios, problem-solving exercises, simulations, problem-based learning, project-based learning, or the analysis of ethical and social dilemmas;
- to promote cooperative challenge-based activities, introducing gamification elements (points, badges, leaderboards) to increase motivation;
- to highlight active participation events (e.g., Researchers' Night), where students collaborate to conceive and produce research outputs;
- to manage teaching tasks through digital platforms, ensuring organization and accessibility of learning materials.

Examples of activities:
• In alignment with the intended learning outcomes, the university faculty member can structure the e-learning platform page by organizing teaching and learning tasks by cohort, in order to promote clarity, accessibility, and shared planning. • In courses involving written assignments or projects, the university faculty member can break down the work into phases with intermediate feedback, reducing frustration and fostering gradual improvement. • During activities, the university faculty member can provide immediate and strategic feedback that highlights the importance of effort and the strategies employed (e.g., "Your analysis is well structured, but consider revisiting this aspect to make it even more effective"). • The university faculty member can design activities with increasing levels of difficulty, allowing students to choose the level best suited to their skills and to progress step by step. • The university faculty member may offer optional supplementary materials for students who wish to engage with more challenging tasks. • The university faculty member can organize academic debates on relevant topics, where students defend opposing positions, enhancing critical thinking and argumentative skills. • The university faculty member can propose interactive storytelling activities, creating open-ended scenarios in which students must make strategic decisions based on acquired knowledge. • The university faculty member can implement a reward system for completing learning activities, incentivizing progressive engagement and achievement. • The university faculty member can organize intensive events (e.g., academic hackathons) in which students work on innovative solutions to research questions. • During lessons, the university faculty member can present examples of professionals in the field who have overcome obstacles, stimulating constructive discussion on strategies for facing challenges in students' own learning journeys. • Promote time management techniques such as timeboxing, a strategy based on setting goals within defined time periods, which helps break down objectives into micro-goals and allocates a reasonable timeframe for their completion.

2.3 Promote Collaboration, Interdependence and Collective Learning

In the university context, collaborative learning represents an effective strategy to foster critical thinking, engagement, and the construction of shared knowledge. Through peer interaction and group work, students have the opportunity to examine problems from multiple perspectives, developing key transversal skills essential to their academic and professional paths. The creation of learning communities promotes an inclusive environment in which each student feels part of a collective growth process. When well-structured, peer interdependence not only enhances content understanding but also strengthens the sense of belonging and mutual support.

Recommendations:

- to use cooperative learning strategies (e.g., Jigsaw, Think-Pair-Share, Group Investigation) by designing activities that require the contribution of all group members to be successfully completed (interdependence based on roles, tasks, or resources), and by assigning each member specific cognitive and social roles (e.g., facilitator, organizer, spokesperson, researcher) to ensure active participation and shared responsibility;
- to include peer assessment opportunities to reflect on the effectiveness of collaboration;
- to integrate teaching strategies that promote collaborative learning, such as debate, role-playing, project-based learning;
- to create opportunities for peer tutoring where students can support each other;
- to provide online spaces for exchange and sharing (e.g., a course-specific social group) and digital tools for both synchronous and asynchronous collaboration (e.g., virtual boards, Moodle and shared folders, discussion forums and group chats);
- to dedicate time for shared reflection sessions on the learning process and group dynamics, in order to foster a sense of belonging;
- to structure peer tutoring programs between students of different academic years;
- to support self-managed study groups with guidance from the university faculty member;
- to implement Problem-Based Learning (PBL) and Project-Based Learning (PjBL) approaches to develop both practical and collaborative skills.

Examples of activities:
• Students are presented with a practical case (e.g., a social problem, an economic situation, or a scientific question) and, working in small groups, must analyze it, propose solutions, and present their findings to the rest of the class in a final discussion. • The university faculty member can organize a structured debate. The class is divided into two groups taking opposing positions on a neutral topic (e.g., the value of interdisciplinary versus specialized research). With a moderator guiding the discussion, each team prepares arguments and responds to the other team's objections. • Students collaborate to create a shared output, such as a wiki, glossary, concept map, or collective article on a study topic. • Students are given an open-ended problem and, with limited resources, must propose innovative solutions through a structured brainstorming and analysis process. • Students analyze and discuss ethical dilemmas related to their discipline, comparing different perspectives and seeking balanced solutions.

2.4 Foster a Sense of Belonging and Learning Community

In the university context, creating environments that foster a genuine sense of belonging and community is crucial to promoting student engagement and perseverance. The university is not only a place for the transmission of knowledge, but also a context in which students develop social skills, build relationships, and refine their identity. To support this process, it is important to design activities and learning environments that allow students to feel valued, supported, and connected with others.

Recommendations:

- to welcome students with opening class rituals (e.g., defining key terms, discussing a news story of the week, short emotional check-ins, or quick polls), thus creating a recognizable and inclusive start to each lesson;
- to establish consistent teaching routines (e.g., scheduled breaks, final moments for group discussion) to foster a sense of continuity and predictability;
- to value mutual understanding through activities of exchange and sharing, integrating materials and topics that reflect the cultural and personal diversity of students;
- to promote a collaborative classroom climate through team-building activities and informal social moments (e.g., exchanging holiday greetings, brief spontaneous conversations);
- to integrate into academic life cultural and recreational events promoted by the department and the university (e.g., university bands, theater courses, reading groups, departmental celebrations), along with social engagement activities (e.g., tree planting, reading sessions in prisons);
- to create spaces for dialogue and social interaction, both physical (study rooms, relaxation areas, shared spaces) and virtual (online forums, social groups, collaborative platforms), to foster cohesion and communication among students, faculty, and academic staff;
- to organize welcoming and orientation practices (welcome days, campus tours) and services addressing specific needs (first-year programs, academic tutoring, inclusion support, thesis guidance);
- to appoint reference faculties for disciplinary areas or specific initiatives (e.g., Erasmus, orientation, inclusion) to ensure personalized and timely support;
- to promote interdepartmental collaborative activities (e.g., hackathons or project-based workshops) that encourage joint work among students from different degree programs;

– to activate support desks and awareness-raising events aimed at promoting respect for cultural, gender, and functional diversity;
– to strengthen student participation and engagement through active student councils involved in decision-making processes and co-design activities related to teaching and academic services;
– to celebrate and recognize students' contributions by establishing university awards and acknowledgments for academic, cultural, and social commitment.

Examples of activities:

- The university faculty member can integrate into reading materials or online resources articles, videos, and case studies that reflect diverse cultural and social perspectives. For example, presenting texts by authors from different cultural backgrounds.
- A brief informal meeting could be organized before the holidays, allowing students to exchange greetings and reflections on the semester.
- In addition to individual feedback, the university faculty member can arrange collective feedback sessions, where students discuss group work results, reflect on challenges encountered, and share the solutions they adopted.
- It would be useful to create online working groups through platforms such as Slack, Microsoft Teams, or Google Meet, where students can collaborate in real time on projects, discuss ideas, and exchange useful resources.
- The university can promote exchanges between students from different institutions to foster comparison between academic environments, enrich competencies, and share study materials, methods, and learning experiences.

2.5 Provide Action-Oriented Feedback

In the university context, assessment plays a fundamental role in the learning process. High-quality feedback can be essential in supporting students throughout their academic journey, helping them maintain motivation and commitment. Assessment is most effective when feedback is action-oriented, relevant, constructive, accessible, consistent, and timely. Any form of feedback should emphasize effort and practice, fostering long-term successful learning habits and providing clear guidance on how to improve.

Recommendations:
– to provide feedback consistently and frequently throughout the course;
– to schedule intermediate review sessions (e.g., offering feedback during the planning or development of a project);
– to use digital platforms and tools to leave targeted comments on students' assignments and projects;

– to give task-oriented feedback to encourage critical revision, sustained effort, improvement, and achievement of the intended goal;
– to offer multiple formats of feedback: written (e.g., comments on documents, emails), oral (individual or group meetings, class discussions, office hours), and visual (corrective diagrams, color-coded or icon-based annotations, maps, or infographics);
– to provide feedback considering the following levels (based on the "feed up–feed back–feed forward" approach): outcome feedback (e.g., correctness or accuracy of the completed task), process feedback (e.g., suggestions for reviewing how the task was carried out), and self-assessment feedback (e.g., the student reflects on what they have learned);
– to deliver feedback that encourages perseverance, focuses on developing self-efficacy and self-awareness, and motivates students to use specific supports and strategies when facing challenges.

Examples of activities:

- During the course, university faculty members can provide weekly or biweekly feedback on ongoing projects or assignments, instead of waiting until the end of the semester or the final evaluation. For example, a faculty member could use an online platform to comment on chapters of a thesis or intermediate assignments, highlighting strengths and areas for improvement.
- The faculty member can write comments on a shared document, pointing out strengths and areas for enhancement (e.g., "Excellent work on the introduction, but the methods section needs more clarity").
- The faculty member can provide assessment rubrics with practical suggestions. For instance, after a written assignment, rather than only indicating errors, it is useful to provide specific guidance, such as: "To clarify your argument, try including a concrete example and a supporting citation."
- The faculty member can give feedback using guiding questions. For example, after an oral presentation: "You explained the concept well, but how could you engage the audience more? Could you add an image or a question to stimulate reflection?"
- Provide students with models and examples of good practice. If a student struggles with writing a report, a well-structured example can be shown, with step-by-step explanations of what makes the text effective.
- The faculty member can use self-assessment and peer feedback strategies. Students could review their own work using a clear checklist or offer constructive suggestions to peers, e.g., "Your argument is well developed, but you could improve coherence between paragraphs by adding logical connectors."
- During in-class activities, the faculty member can explain to students why a task could be improved and provide specific, immediate suggestions, e.g., "Try rephrasing this sentence more clearly, perhaps using simpler language."
- The faculty member can employ technological tools for personalized feedback, such as Google Docs comments or audio recordings, to provide detailed and immediate guidance.
- The faculty member can share success stories and models of perseverance, organizing meetings or roundtables with alumni or professionals who discuss the challenges they faced and overcame during their academic and professional journeys. Their testimonies offer positive role models and encourage students to reflect, ask questions, and discuss strategies for facing similar challenges in their own learning paths.

3. Designing Options for Managing Emotions

In the university context, it is essential for teaching to take into account the emotional dimension of students, as emotions profoundly influence the learning process. The ability to recognize, regulate, and understand one's own emotions, as well as to empathize with others, are skills that should be explicitly developed and supported.

3.1. Recognize Expectations, Beliefs and Motivations

In the university context, self-regulation is a crucial factor for student success, as it involves the ability to manage one's own learning independently, set clear goals, and develop the motivation needed to achieve them. Moreover, working on self-regulation fosters a sense of self-efficacy, allowing students to feel like active participants in their own educational journey. It is important for students to understand what motivates them, both intrinsically and extrinsically. To this end, faculties should establish goals that inspire confidence and a sense of belonging in learning—goals that are also realistic and attainable. While it is essential to cultivate high and positive expectations regarding goal achievement, it is equally important to support students during moments of frustration and anxiety and to encourage them to develop self-confidence.

Recommendations:

- to support students during moments of difficulty by fostering the development of resilience and confidence in their abilities through targeted support strategies;
- to use organizational and motivational tools (prompts, reminders, guides, rubrics, checklists) to help manage anxiety in challenging situations, extend concentration time, stimulate self-reflection, and prevent frustration;
- to provide tutoring or mentoring opportunities to guide students in defining realistic and appropriate personal goals that take into account their individual strengths and areas for improvement;
- to promote structured moments of self-reflection and self-assessment, for example through rubrics and checklists that help monitor progress and evaluate learning processes;

– to engage students in analyzing the explicit and implicit expectations established by the academic environment, reflecting on the role that biases and stereotypes may play in creating barriers;
– to offer positive reinforcement and schedule short breaks to support motivation and maintain well-being during study sessions or assessments;
– to encourage self-reflection and personal awareness through exercises that require students to rephrase their goals in their own words and repeat them periodically to strengthen focus;
– to use surveys or other rapid feedback tools to adapt activities to students' interests, needs, and preferences.

Examples of activities:

- Students are required to develop a practical project linked to a real need of the university. At the beginning, they complete a self-assessment questionnaire on their skills, expectations, and potential challenges. The university faculty member provides checklists and rubrics to guide the process, helping students break down the task into concrete and achievable objectives. Each week, students reflect on their progress through a learning journal and receive personalized feedback. Additionally, peer mentoring sessions allow them to discuss common challenges and strategies to overcome them.
- It would be useful to create infographics or summary sheets with strategies to manage academic stress, made available on Moodle or other platforms.
- Teaching strategies such as controlled breathing, time blocking, relaxation techniques, and mindfulness could be effective in optimizing concentration during tasks and/or study sessions.
- Within the same degree program, a system could be established in which more experienced students support freshmen in setting realistic goals and developing effective learning strategies (peer tutoring, mentoring).
- It would be beneficial to schedule regular meetings with the faculty member or academic tutor, dedicated to discussing personal goals and challenges encountered.
- Providing students with practical resources, such as videos, articles, or counseling sessions, can help them manage exam-related anxiety and procrastination. This could include time management techniques, stress-reduction strategies, and methods to promote self-discipline.
- The faculty member could ask students to write a letter to their "future self", describing the challenges they are facing, the strategies they intend to use, and their personal goals. It would be useful to revisit the letter after some time to reflect on progress made.
- The faculty member can organize a "vision board" session, in which students visually represent their academic and professional goals, followed by group discussions and reflections.

3.2 Develop Self- and Other- Awareness

In university teaching, it is necessary to take into account a range of variables—existential, personal, and social—that affect students. It is beneficial to create an environment oriented toward prosociality, supporting the development of social awareness and helping students understand others' perspectives, respect cultural diversity, and create safe spaces for every identity. It is essential to provide opportunities to process and manage emotions and to reflect on personal strengths and challenges. Tools such as reminders, templates, and checklists can help students choose adaptive strategies for regulating emotions, addressing both external events (e.g., social anxiety) and internal experiences (e.g., anxiety or rumination).

Recommendations:

- to provide differentiated feedback aimed at managing frustration and supporting both external and internal emotional regulation;
- to propose real-life simulation activities to help students develop adaptability and self-regulation skills;
- to create opportunities for students to reflect on their social interactions;
- to offer activities that encourage appreciation of one's own and others' personal, cultural, and linguistic resources (for example, displaying student self-portraits, creating affinity group spaces, or sharing notes of appreciation with peers and colleagues);
- to introduce moments of mindfulness before or after academic activities;
- to provide tools and strategies for emotional self-regulation;
- to encourage students to keep journals to monitor their academic progress;
- to propose reflective learning logs in which students can personally reflect on their challenges, emotions, and what they have learned;
- to organize role-playing activities;
- to introduce the professional figure of a Life Coach to accompany students in their personal growth journey.

Examples of activities:

- Students participate in a discussion on a current topic that involves diverse perspectives and sensitivities. Before the meeting, each student completes a checklist to explore their emotions related to the topic, identifying potential biases or insecurities. The discussion is then guided by stimulating questions, during which students analyze the topic from different viewpoints. At the end, they are invited to reflect on the emotional impact of the conversation and how their understanding of the topic has changed, with the aim of developing greater awareness of others' perspectives.
- The university faculty member could create moments dedicated to a "self-portrait and personal stories exhibition", where students share personal or cultural experiences to highlight the diversity present in the classroom.
- The faculty member could dedicate time to creating dialogue spaces to foster a sense of belonging and respect for diverse identities, strengthening affinity groups and spaces for discussion.
- It would be useful to propose intercultural exchange activities, allowing students from different backgrounds to compare experiences, such as sharing traditions or international academic experiences.
- To work on adaptability and emotional management, the faculty member could have students practice simulations of academic or professional scenarios, where they must respond to challenging situations.
- The faculty member could assign group projects with defined roles, so each student assumes a specific role to facilitate understanding of team dynamics and emotional management in collaborative work.
- Many students experience anxiety when presenting work or taking oral exams. To help build self-confidence and improve communication skills, the faculty member can organize public speaking activities in small groups. Each student first prepares a brief presentation on a topic of their choice and presents it to peers, who provide constructive feedback on clarity, body language, and communicative effectiveness.
- After group activities, it is useful for students to engage in personal reflection, analyzing emotions, behaviors, and reactions while considering internal and external factors. Reflecting on others' experiences also fosters empathy and awareness of interpersonal dynamics.
- Students could create a "Me and Others" playlist to get to know each other better. Each student selects two songs: one reflecting their identity and feelings, and another representing a significant relationship with a peer.
- The faculty member can help students develop greater self-awareness through mindfulness, meditation, and relaxation techniques, including sessions with breathing exercises to enhance concentration and reduce stress, and guided meditation to explore emotions and thoughts.

3.3 Promote Individual and Collective Reflection

In the university context, it is essential to create opportunities for both individual and collective reflection, as this fosters the development of students' emotional and metacognitive competence. For many students, simply recognizing that they are making progress toward a goal is highly motivating. Conversely, one of the key factors in loss of motivation is the lack of support for those who are unable to recognize their own individual or collective progress. It is therefore important that students have access to multiple models and supports for different self-assessment and group-assessment techniques, enabling them to identify and choose the ones that work best for them.

Recommendations:

- to provide students with feedback during an activity;
- to design checklists to guide students in their learning process or task completion.;
- to develop tools for visualizing feedback and tracking progress;
- to facilitate individual and group office hours to stimulate reflection on challenges, progress, and goals;
- to propose the writing of reflective journals, as well as activities aimed at metacognition and self-assessment;
- to design peer feedback sessions;
- to dedicate time to focus groups;
- to develop activities that encourage metacognitive reflection, including tasks that prompt students to reflect on how they learn, which strategies they use, and how they could improve.

Examples of activities:

- Students explore a complex concept related to the subject matter. Each student has the opportunity to track their own progress, noting initial difficulties, acquired knowledge, and aspects requiring further study, reflecting on their individual learning journey. In groups, students share their experiences, and the university faculty member provides feedback on key points and arguments, encouraging participants to recognize progress and areas for improvement.
- Before a presentation or written project, students can receive a checklist with specific criteria (e.g., "Check if your work answers the main questions," "Verify the coherence of your thesis," "Proofread your work for grammatical errors"). This enables students to self-assess and revise their work prior to final submission.
- The faculty member can propose reflective writing activities on case studies, followed by reflections on how their thinking has evolved over time.
- The faculty member can dedicate time to discussions on learning experiences, where students share strategies that worked and areas for improvement, developing metacognitive awareness.
- After class, the faculty member may organize peer review sessions, in which students provide feedback on each other's work while reflecting on their own and others' learning strategies.
- The faculty member can facilitate thematic focus groups, structured discussions that encourage students to analyze their learning experiences and share effective strategies.
- The faculty member can implement structured peer feedback activities, where students exchange comments based on criteria provided by the faculty member to ensure constructive feedback.
- The faculty member can provide specific, individualized feedback during the course, highlighting progress and areas for improvement.
- The faculty member might use progress dashboards (e.g., Moodle, virtual boards) to allow students to visualize their advancement in the course. These tools enhance awareness of the learning journey, help identify areas for improvement, and provide immediate feedback, promoting dynamic and personalized learning.
- The faculty member can schedule reflection sessions after an exam or complex project, discussing mistakes, strategies used, and ways to improve.
- Students could create short podcast episodes in which they recount significant moments of their university journey, discussing challenges, achievements, and personal growth. These episodes can then be shared on online platforms.

3.4 Practice Empathy and Conflict Resolution through Error Analysis

Restorative practices represent an educational and organizational philosophy that places relationships at the center of learning, personal growth, and well-being within the university context. They are based on proactive strategies aimed at building a strong sense of community, fostering meaningful relationships, and reducing conflict through dialogue and accountability. The goal is to promote relational and emotional skills, peaceful conflict management, nonviolent communication, a sense of safety and community, respect, and well-being. Promoting the restorative approach—through practices such as peer mediation, circle time, restorative conferences, student group conferences, and community-building circles—can serve not only as a model for repairing harm in cases of conflict or misconduct, but also for building and strengthening relationships and developing personal and interpersonal competencies such as empathy, assertiveness and self-efficacy.

Recommendations:

- to develop strategies for conflict management within academic work groups, fostering mediation skills, collaborative negotiation, and respect for differences, with a view to supporting both the success of educational activities and future professional experiences;
- to conduct guided reflections on personal emotions within structured settings (seminars, workshops, laboratories) to promote emotional awareness and affective regulation in university learning environments;
- to promote essential socio-emotional competencies for academic and professional life—such as cooperation, resilience, stress management, and teamwork—in alignment with citizenship and employability profiles;
- to propose activities focused on active listening, emphasizing it as a transversal skill essential in academic dynamics (discussions, group work, relationships with faculties) as well as in future professional contexts;
- to organize seminars that raise awareness of cultural, social, and gender diversity, providing spaces for listening and dialogue about students' personal experiences in order to strengthen an inclusive and respectful university environment;
- to introduce reflective and anonymous writing exercises that allow students to express their emotions and, if they wish, share them in collective discussions—thus reinforcing self-awareness and a sense of community;

– to educate for empathy and reflection through experiential methodologies such as case study analysis, film workshops, role-playing or theater activities, circle time, peer mediation, volunteer projects, intergenerational discussion groups, and workshops on relational skills (e.g., conflict management, intercultural communication).

Examples of activities:

- Occasionally, students may feel they have been unfairly assessed in an exam and express their dissatisfaction aggressively during class, creating tension. In such cases, the faculty member could offer an exam review opportunity with detailed feedback, while encouraging students to adopt more constructive ways of expressing their opinions in the future.
- A student may be flagged for plagiarism after anti-plagiarism software detects sections copied without proper citation. Instead of immediately imposing disciplinary sanctions, the faculty member could hold a meeting to understand the student's motivations (e.g., academic pressure, time management difficulties, lack of familiarity with citation norms) and help the student recognize the impact of their action on academic integrity. As a restorative solution, the student may rewrite the assignment following proper citation practices and attend a workshop on referencing. This approach promotes awareness of mistakes, repair of harm, and prevention of future violations.
- In a group project, an Erasmus student may feel excluded if other students communicate only in their native language. After reporting the issue to the faculty member, a meeting could be organized to address the situation and identify practical solutions, such as alternating languages, assigning roles that value all contributions, and participating in intercultural workshops.
- Through welcome activities and peer mentoring, restorative practices facilitate the integration of Erasmus students or freshmen, fostering support networks and reducing feelings of isolation.
- Students are divided into groups and work on a case study simulating a conflict in a collaborative context. The activity begins with an "emotion circle", where each member shares their experience regarding the group dynamics, practicing active listening without interruption. The goal is to develop empathy, understand others' emotions, and recognize the importance of effective communication. Groups then analyze the case, identify the causes of the conflict, and develop strategies to restore a trusting and collaborative climate, applying techniques such as conflict resolution, mediation, and active listening. The activity concludes with a collective reflection, where students discuss how the skills learned can be applied in professional and academic contexts, enhancing teamwork and promoting inclusive, collaborative environments.
- The faculty member could propose activities simulating real academic disputes (e.g., division of tasks in a group project). Students, each assigned a specific role, must resolve the conflict considering everyone's needs.
- The faculty member could dedicate moments to view short films or movies addressing diversity, discrimination, or cooperation. Students are encouraged to discuss constructively the emotions elicited by the audiovisual material and reflect on strategies to enhance empathy in academic and professional settings.
- The faculty member proposes scenarios simulating interactions among people with different cultural, social, or gender backgrounds.
- Following the circle time methodology, students share experiences in which they were involved in a conflict in an academic or professional context, practicing active listening without interruptions. Each student reflects on their emotions and potential solutions that could have resolved the conflict, while the faculty member guides the discussion toward collaborative resolution strategies.
- The faculty member invites students to create an "emotional postcard" using a photo they took, a drawing, a collage, or a painting, accompanied by a brief text describing a conflict or mistake they experienced or witnessed. The postcards are submitted anonymously (physically or online) and later shared and discussed in small groups.

Designing Multiple Ways of Representation

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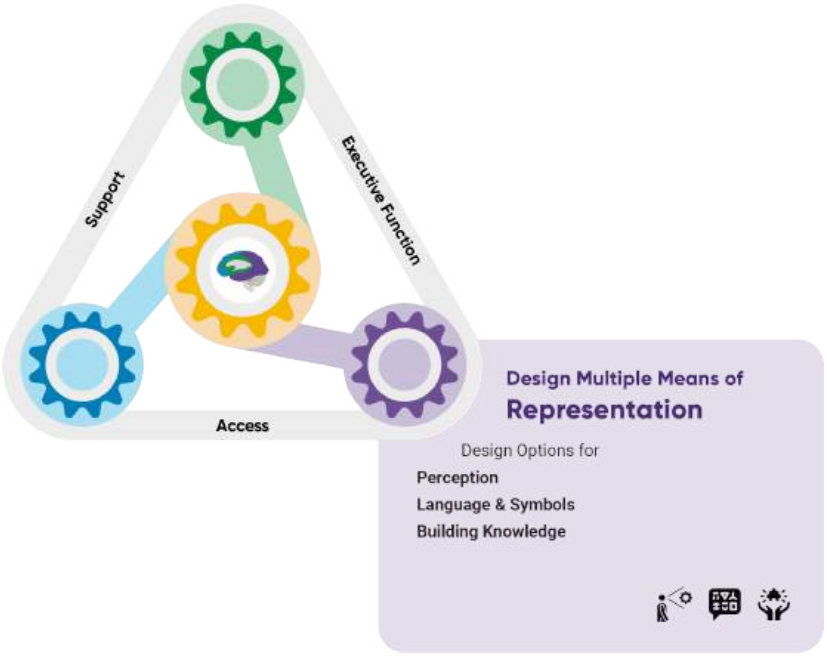

The principle of representation in learning is grounded in the understanding that individuals differ in how they perceive, process, and make sense of information. These differences stem from a wide range of identity-related, cognitive, and cultural factors. To ensure equitable and meaningful access to learning content, it is

essential to adopt diverse representation strategies that support comprehension and the active construction of knowledge.

An inclusive instructional design should therefore present content through multiple communication channels, extending beyond the verbal dimension to include symbols, images, sounds, and graphic representations. Where possible, it is also advisable to incorporate visual–gestural communication systems, such as Italian Sign Language (LIS), as well as Augmentative and Alternative Communication (AAC) tools, to ensure the broadest possible accessibility of learning materials.

Moreover, effective representation of information requires careful attention to the plurality of cultural, identity-based, and epistemological perspectives present within society. Learning and knowledge transfer become more effective when content is offered through multiple forms of representation, as this fosters connections both within a concept and across different conceptual domains. In essence, there is no single optimal mode of representation for all learners; therefore, educational design must provide a variety of representational options, ensuring equitable access to learning while valuing the diversity of cognitive processes and cultural experiences.

It is crucial to recognize that language and symbols are never neutral: they reflect the cultural, social, and disciplinary contexts from which they emerge and may carry implicit biases that influence how people access and interpret information. Likewise, the identity positioning of all participants in the learning process—shaped by cultural, linguistic, gender, and social identities—plays a decisive role in shaping educational experiences. These identities influence not only how content is perceived but also how it is communicated, interpreted, and valued within the academic environment.

1. Options for Perception

Considering the specific individual characteristics that may influence how information is preferably conveyed, it is essential to present learning content through multiple and diverse modalities. This approach also promotes a certain degree of autonomy in accessing and engaging with the material. Therefore, it is crucial to rely not only on the auditory channel but also on tactile and visual ones. With regard to the latter, it is important to note that the visualization of information significantly affects how it is perceived and, consequently, understood.

1.1 Provide Opportunities to Personalize the Presentation of Information

Printed text follows specific and inflexible editorial conventions (such as layout, font size, and spacing) that affect its readability, unlike digital formats, which allow greater flexibility—for instance, the possibility of adjusting text size through zoom functions and using animations to emphasize key elements. In written materials, therefore, color, background contrast, magnification, and page layout play an essential role in accessibility. In this regard, the guidelines for writing in Easy-to-Read language provide strategies to present information in a format that is accessible to everyone.

Similarly, in digital environments, color, contrast, layout, and interface customization are equally important. In digital materials, the same information can be reorganized, enlarged, highlighted through color or dynamic elements, or even hidden, depending on user preferences. This flexibility not only enhances the perceptual clarity and relevance of content but also allows it to be adapted to the diverse learning styles, abilities, and needs of students.

However, it is crucial to remember that "digital" does not automatically mean "accessible." Many digital resources remain inaccessible if accessibility features are not integrated during the design phase. For this reason, intentional and inclusive design from the earliest stages of material development is essential.

Recommendations

- to personalize the user experience by offering options to modify font type, size, line spacing, and letter spacing; background and text colors; volume and playback speed of audio materials; timing and pacing of animations, videos, and simulations; and the arrangement and order of visual elements;
- to integrate images, tables, and graphs in resizable, high-contrast formats, avoiding the exclusive use of color to convey information;
- to ensure accessibility of all presented information through the use of alternative text for images, clear captions, audio descriptions, and well-labeled buttons that can be read by screen readers;
- to guarantee content usability across devices, including tablets, smartphones, and other mobile technologies, by employing responsive layouts, scalable fonts, and touch-friendly interfaces;
- to promote collaboration between faculties and students in selecting and adapting digital tools, in order to better respond to diverse educational needs.

Examples of activities:

- General information (such as examination procedures, class attendance requirements, and invitations to conferences, seminars, or field activities) is presented by the faculty member during lessons and on the Moodle platform using Easy-to-Read language.
- General information (such as examination procedures, class attendance requirements, and invitations to conferences, seminars, or field activities) is also translated and presented during lessons and on the Moodle platform through the use of pictograms (AAC – Augmentative and Alternative Communication).
- The faculty member provides students with non-accessible learning material (e.g., a PDF document or a website). Students are asked to transform it into an accessible version, ensuring selectable text, descriptive captions for images, high-contrast colors, and a mobile-friendly layout.
- The faculty member proposes a collaborative revision activity of a PowerPoint presentation used in the course. Working in small groups, students identify accessibility issues related to contrast, font size, color use, and alternative text for images.
- The faculty member provides learning materials (slides, articles, etc.) that are of limited reading length and can therefore be easily accessed on mobile devices.
- In some cases, the faculty member may use Easy-to-Read language, preferring the active voice instead of the passive, affirmative rather than negative forms, and the indicative mood instead of the subjunctive. Sentences contain only one piece of information per line, avoiding or explaining complex linguistic expressions and illustrating abstract concepts with concrete examples.

1.2 Support Multiple Ways of Perceiving Information

The underlying idea is that every individual possesses specific cognitive—and consequently perceptual—strengths that must be recognized and used as a foundation for designing any teaching–learning process. Research shows that learners are motivated to engage with new educational content when they feel competent and believe they have the necessary resources to achieve success. To ensure that each learner can reach their own form of cognitive excellence, access to new topics should be facilitated through a variety of entry points tailored to their cognitive profiles. These may include narrative (written or oral stories related to the topic), numerical or quantitative (statistics, graphs, numerical reasoning), logical (deductive reasoning and problem solving), existential (philosophical and ethical reflection), aesthetic (visual, auditory, and tactile sensory knowledge and artistic experience), experiential or manipulative (hands-on laboratory activities and product creation), and social (examining social implications and engaging in collaborative or introspective approaches). Similarly, exit points—corresponding to assessment or verification phases—should be personalized according to learners' skills and expressive preferences. However, ensuring equitable access to learning requires more than differentiating cognitive pathways: it also demands inclusive and multisensory strategies for presenting information. Images, graphs, anima-

tions, videos, and texts are powerful educational tools but are not always accessible to everyone. Students with visual impairments, intellectual difficulties, or limited familiarity with specific visual codes may encounter barriers in understanding content, as visual representations often rely on implicit interpretive skills. Therefore, it is essential to provide accessible alternatives such as textual or audio descriptions, tactile or three-dimensional models, and auditory cues that support the comprehension of visual content. Written text, despite its apparent universality, must also be made accessible—compatible with screen readers, produced according to accessibility standards, and easily convertible into audio format. Likewise, sound, though a powerful medium for conveying meaning, is not universally accessible; all orally transmitted content should be accompanied by transcripts, subtitles, or visual representations to ensure full and equitable access to information.

Recommendations:

- to use visual and auditory content only when accompanied by accessible equivalents—such as textual or audio descriptions, transcripts, subtitles, sign language interpretation, or tactile models—to ensure comprehension for all students, including those with sensory disabilities;
- to provide materials that engage different perceptual channels and types of intelligence, in line with students' diverse cognitive profiles: written texts for linguistic intelligence, graphs and data for logical–mathematical intelligence, images and videos for visual–spatial intelligence, hands-on experiences for kinesthetic intelligence, and collaborative or autobiographical content for interpersonal intelligence;
- to prefer resources compatible with mobile devices—such as articles readable on smartphones or tablets, videos optimized for small screens, and responsive layouts—to facilitate access even in mobility or under limited connectivity conditions;
- to design flexible assessment formats that allow students to demonstrate their acquired competencies through various channels—oral presentations, written work, multimedia content, or practical projects—thus valuing diverse expressive modalities;
- to diversify cognitive entry points for each new topic by offering multiple modes of access (narrative, logical, experiential, aesthetic, social, existential), to foster motivation and engagement through the recognition of individual cognitive strengths;

– to develop instructional materials compatible with assistive technologies, such as screen readers, text-to-speech software, or augmentative and alternative communication devices, ensuring that all students can access content autonomously;
– to create spaces for dialogue and feedback with students to gather information on perceptual preferences, learning strategies, accessibility challenges, or suggestions for adapting materials and activities—thereby promoting a learning experience genuinely centered on individual needs.

Examples of activities:

- The university faculty member may present the course syllabus in three formats: a text-based document written in simplified language, a version with pictograms (AAC), and a subtitled video explanation accessible via text-to-speech.
- During a lecture on a theoretical concept, the academic staff member proposes a real-life case narrated in audio format, provides related data in graphical and numerical form, and stimulates reflection using an evocative image or short video clip.
- The lecturer regularly uploads slides, articles and teaching materials in accessible formats (tagged PDFs, screen-reader compatible documents) to the Moodle platform, accompanied by transcripts and alternative descriptions for images.
- The university faculty member may diversify the final assessment modalities, allowing students to choose among: a written essay, an oral presentation, a podcast, a digital concept map, a multimedia project or a laboratory simulation — all evaluated against the same quality criteria.
- Lecture recordings may include subtitles, downloadable transcripts and visual annotations of key points; audio may also be made available as a podcast file for offline listening.
- At the semester outset, the academic staff member might conduct a co-design workshop with students, dedicating a session to collecting their needs and preferences regarding access to materials, study methods and communication. The responses are then used to adapt the course.
- The lecturer activates a collaborative course glossary in which students can contribute simplified definitions, images, concrete examples or short audio explanations, thereby supporting the consolidation of knowledge and understanding.

1.3 Represent a Diversity of Perspectives and Identities in Authentic Ways

The authentic and plural representation of identities, stories, and worldviews within university educational contexts constitutes a key condition for fostering students' sense of belonging, symbolic recognition, and cultural legitimacy. Conversely, the systematic omission or marginalization of these dimensions in teaching materials, disciplinary content, and institutional communication practices can contribute to the formation of a learning environment perceived as exclusive or culturally hierarchical. In this sense, non-representation risks being interpreted

by students as a sign of subordination, with potentially negative consequences on motivational, relational, and identity levels.

University classrooms—together with the symbolic and material spaces that contain them—are inhabited by a plurality of embodied subjectivities, defined along multiple axes of differentiation such as gender, ethnicity, disability, sexual orientation, and socioeconomic or cultural background. These variables, far from being neutral, are situated within complex social systems characterized by power relations, inclusion, and marginality. Within this framework, some individuals may actively assert their belonging to social and cultural minorities, while others adopt adaptive strategies aimed at conforming to dominant normative standards. These standards, often perceived as "neutral" or "universal," are in fact historically situated cultural constructs, the product of processes of naturalization that legitimize and reproduce forms of inequality.

From this perspective, it becomes pedagogically relevant to recognize that university teaching cannot be considered a neutral act but must instead adopt a critical stance toward stereotypes and prejudice. In this regard, the use of language that respects diversity and the analysis of implicit discursive frameworks within teaching materials emerge as essential strategies to counter the reproduction of dominant narratives rooted in white, Eurocentric, patriarchal, and colonial paradigms—as highlighted by decolonial critique and the works of Black feminist scholars such as Bell Hooks.

Teaching choices—whether related to content, language, or epistemological references—thus exercise a performative power, shaping meanings and expectations that influence students' self-perception and their social positioning within the academic community.

Recommendations:

- to use gender-inclusive language, favoring neutral or comprehensive expressions (e.g., "person," "individual," "subject") and, where appropriate, employing both masculine and feminine forms or inclusive graphic/symbolic markers (such as the asterisk, @, or schwa) instead of the generic masculine;
- in verbal communication, to use gendered forms (masculine and feminine) whenever possible to acknowledge all identities;
- in both written and spoken language, to avoid ableist terminology or expressions (e.g., "afflicted with," "suffers from," "wheelchair-bound," "the blind/deaf," etc.);

– to avoid racist or xenophobic expressions (e.g., "of color," "non-EU citizen," "foreigner," etc.) in all forms of communication;
– to avoid fatphobic language (e.g., "overweight," "obese," unless referring to a clinically diagnosed condition);
– to avoid homolesbobitransphobic language and expressions (e.g., "asexuals," "promiscuous," etc.) in both written and oral communication;
– systematically to include contributions from scholars of diverse genders, ethnicities, cultures, religions, disabilities, sexual orientations, and social classes, ensuring a multiplicity of perspectives;
– to value decentralized, contextual, situated knowledge, including sources that express worldviews alternative to dominant paradigms;
– to select materials that represent the complexity of lived experiences, avoiding generalizations, oversimplifications, or monolithic narratives about individuals and communities.

Examples of activities:

- The faculty member prepares slides, handouts, documents, and academic communications using gender-inclusive and respectful language, avoiding the use of the generic masculine and adopting inclusive formulations such as gender-neutral or double-gender expressions.
- The academic staff member promotes structured and inclusive debate activities on current social issues, where students practise critical argumentation and the use of respectful, non-discriminatory language.
- The university educator may initiate role-playing activities with particular attention to linguistic and relational dynamics. Students participate in simulations of real or professional situations, applying their knowledge and communicative skills. The faculty member encourages the use of inclusive language and awareness of cultural codes.
- The lecturer systematically includes, within study materials and required or recommended readings, contributions by authors representing a plurality of social identities—across gender, ethnicity, culture, religion, disability, sexual orientation, and social class. This practice fosters conscious and diversified source selection.
- To value situated and decentered forms of knowledge, the academic staff member integrates sources expressing alternative or marginalized worldviews with respect to dominant disciplinary canons, such as texts from non-Western contexts, as well as decolonial, feminist, crip, or queer theories.
- The faculty member selects materials that do not simplify or reduce the represented experiences but rather reflect their social, cultural, and emotional complexity, avoiding generalizations and stereotypes.

2. Options for Language and Symbols

Language, in all its forms, is a fundamental tool for communication and the construction of knowledge, yet it can also become a barrier for some individuals. Similarly, symbols, mathematical expressions, graphical representations, and disciplinary conventions may be complex or inaccessible without adequate instruc-

tional design. It is therefore essential to provide multiple means of representation, presenting content through as many modalities as possible to respond to the diverse needs of learners and to maximize effective learning opportunities. Learning environments that offer only a limited range of options inevitably increase inequalities in participation and engagement.

An accessible learning environment must not only include strategies that facilitate comprehension and access to content—such as glossaries, translations, visual representations, and captions—but also foster critical reflection on the cultural and social meanings conveyed through language and symbols. Only through a conscious and respectful approach to diverse identities and cultures can barriers be reduced, biases deconstructed, and active, safe, and meaningful participation ensured for all learners. In this way, language and symbols become instruments of accessibility and equity, contributing to the creation of a learning environment that respects the dignity and identities of every individual.

2.1 Clarify Vocabulary, Symbols, and Linguistic Structures

It is necessary to reflect on how learners access disciplinary content in order to employ languages that clarify meanings and relationships among terms through multiple modalities. Designing multiple means to explain vocabulary, symbols, and linguistic structures is essential to help learners connect prior knowledge with new learning. It is the responsibility of faculties to ensure that terms and symbols are presented in various formats, with the goal of maximizing learning opportunities. This involves designing not only graphical representations but also textual descriptions and making explicit the connections between related topics.

Recommendations:

- to use consistently inclusive, non-discriminatory, and respectful language toward all identities, avoiding ableist, sexist, or exclusionary expressions;
- to refer to individuals using their correct pronouns and chosen names, in accordance with the principle of identity recognition;
- to communicate vocabulary and symbols in advance, linking them to students' prior experiences and knowledge;
- to allow flexible timelines for mastering disciplinary language, avoiding assessments based solely on early or uniform language proficiency;
- to provide multiple, practical, and contextualized examples illustrating the use of abstract symbols, structures, or expressions;

– to embed vocabulary and symbol supports within the text, through hyperlinks, glossaries, footnotes, previous sections, or translations;
– to offer transcripts and captions for all audio and video materials used in teaching activities;
– to break down complex terms, expressions, equations, or symbols into simpler and more familiar components;
– to clarify unfamiliar syntax—whether verbal, mathematical, scientific, or graphical—through diagrams, concept maps, or visualizations;
– to make explicit the connections between related topics or concepts, highlighting recurring structures, analogies, transitions, and logical relationships (e.g., bridging words in a text, links in a concept map, or parallels between theorems and related ideas);
– to provide explicit references for concepts, notations, idioms, theorems, or jargon that might be unfamiliar to students from different educational, cultural, or linguistic backgrounds;
– to contextualize examples in culturally sensitive and diverse ways, avoiding assumptions of a single dominant frame of reference.

Examples of activities:

- It is advisable to use respectful and inclusive language, avoiding the use of the generic masculine and preferring inclusive expressions such as "all enrolled individuals" or simplified neutral forms. The faculty member may introduce themselves by indicating their pronouns and by acknowledging those chosen by students, using terminology recognized by minoritized groups when referring to identity categories, and avoiding discriminatory or ableist expressions. Even within disciplinary discourse, clarity and simplicity are prioritized, avoiding unexplained or ambiguous technical jargon.
- The academic staff member provides accessible glossaries and formularies with clear definitions, usage examples, disambiguations, and graphic or visual representations. Complex terms, formulas, or symbols are explained verbally and through multiple channels (e.g., diagrams, analogies, models, simulations), facilitating connections with students' prior knowledge. Dedicated in-class moments are scheduled to clarify linguistic or conceptual doubts and to discuss the meaning of words and structures collectively.
- Teaching materials (slides, handouts, videos) are designed to be accessible across devices and compatible with screen readers. Images, graphs, and animations are accompanied by alternative textual descriptions; videos include subtitles and transcripts. Interactive or explorable resources (such as dynamic graphs or simulations) are provided to support personalized comprehension of complex concepts.
- Throughout the course, the lecturer presents concrete and culturally relevant examples, adapting them to students' diverse backgrounds, and promotes activities that stimulate linguistic and symbolic understanding—such as collective text analyses, guided concept mapping, and open-ended problem-based exercises. Through moments of active dialogue, conceptual clarification is fostered, and diverse perspectives are valued and integrated into the learning process.

2.2 Support the Decoding of Texts, Mathematical Notation and Symbols

The comprehension and interpretation of texts, symbols, and mathematical notations are not automatic or uniform processes for all individuals, especially when these elements are not supported by adequate scaffolding tools. Supporting the decoding of written texts, mathematical notations, and disciplinary symbols is essential to ensure that these components do not become obstacles to achieving learning objectives. Learners may face difficulties in reading or interpreting complex texts, mathematical formulas, or symbolic representations within specific disciplines. For this reason, it is crucial to adopt strategies that facilitate decoding and understanding, allowing students to focus on the learning goals themselves rather than on the barriers created by instructional materials.

Recommendations:

- to provide clear and contextual explanations for symbols, formulas, and notations used in instructional materials;
- to use digital tools that allow automatic reading of texts and symbols, such as electronic readers;
- to integrate multiple representations for complex concepts, including verbal, visual, and symbolic descriptions;
- to ensure that materials are designed to be compatible with assistive technologies and support software;
- to avoid using non-standard symbols or notations that may cause confusion for learners;
- to provide practical examples and real-world applications to clarify the meaning of symbols and formulas;
- to encourage learners to use support tools such as talking calculators or symbolic translation software;
- to offer immediate and personalized feedback to help overcome decoding difficulties;
- to use diagrams or images to visually represent concepts expressed through symbols or notations;
- to provide tutoring sessions or individual support for learners who experience specific challenges.

Examples of activities:

- The faculty member supports lectures with guides illustrating how to read, interpret, and apply complex formulas or equations. Each step is explained both verbally and visually, through concrete and contextualized examples that help connect abstract symbolism to real or familiar situations.
- Through learning platforms or dedicated resources, interactive digital materials are made available, allowing students to highlight, annotate, or manipulate texts and symbols. These tools promote active and personalized learning, adaptable to diverse cognitive styles.
- The academic staff member produces or selects explanatory videos and digital guides that dynamically demonstrate problem-solving processes and the use of complex symbols. Such resources are always accompanied by textual transcripts compatible with assistive technologies and screen readers, ensuring accessibility for students with sensory disabilities.
- Where possible, interactive software is used to allow students to freely explore notations and formulas—for example, by modifying variables or visualizing effects in real time.
- The lecturer proposes guided and progressive exercises that train students in symbolic reading and decoding, fostering autonomy, awareness, and mastery of disciplinary language.

2.3 Foster Understanding and Respect among Different Languages and Dialects

Language is not merely a means of communication but a constitutive element of each individual's cultural and social identity. Therefore, recognizing and valuing linguistic plurality—including dialects—is essential to promoting equity in access to knowledge and active participation in educational settings. Academic environments often adopt a dominant language that can be exclusionary for those coming from diverse linguistic backgrounds, potentially creating cognitive and emotional barriers, particularly for individuals who primarily communicate in minority languages or dialects. Integrating teaching practices that value this diversity means not only offering opportunities for expression in different languages but also fostering a pedagogy that acknowledges dialects as fully developed linguistic systems—free from hierarchies and stigmatization.

It is important to recognize that linguistic difficulties may intersect with other forms of marginalization, such as socioeconomic background, neurodivergence, or migratory experience. For this reason, adopting instructional strategies that support learning through multimodal tools—such as translations, visual representations, audio materials, and subtitling—becomes an essential step toward truly inclusive education. Linguistic diversity should not be viewed as an obstacle but as a resource to be actively cultivated within educational practice, ensuring that every individual feels recognized and legitimized in their learning journey.

Recommendations:

- to offer an inclusive and diversified curriculum by integrating literary works, historical perspectives, and cultural practices from different linguistic contexts, including accessible, culturally and linguistically responsive teaching materials that encourage autonomous choice and acknowledge the diverse backgrounds of all students;
- to celebrate and value linguistic and cultural diversity by promoting respect and pride in one's own language, culture, dialect, or sign language, recognizing them as fundamental learning resources and countering all forms of stigmatization;
- to encourage the sharing and emergence of linguistic experiences by creating spaces for peer-to-peer exchange of cultural and linguistic experiences, fostering translanguaging practices and the use of each individual's linguistic capital as a collective resource;
- to ensure linguistic accessibility of content by making key information available in students' heritage or native languages when possible;
- to simplify the understanding of disciplinary vocabulary by defining specific terms (e.g., "map key"), using both technical and common language, and linking key terms to definitions, pronunciations, and translations—also through digital tools or multilingual glossaries;
- to integrate visual and nonverbal tools by using images, videos, visual representations, and paraverbal communication to clarify concepts and support comprehension, especially when working across unfamiliar languages or linguistic barriers;
- to acknowledge and integrate all communicative modalities by valuing non-oral languages—such as sign language and dialects—promoting their linguistic legitimacy and active use within educational contexts.

Examples of activities:

- The faculty member provides translations and subtitles for audiovisual content presented in different languages and recommends digital tools for real-time text translation, ensuring access to information even for those who are not proficient in the language of instruction.
- The academic staff member uses images, diagrams, videos, or visual representations to explain complex concepts, particularly when expressed in a language, dialect, or register that is unfamiliar, integrating, where necessary, alternative text descriptions to ensure accessibility.
- The lecturer creates multilingual glossaries and lists of key terms, including simple definitions, phonetic transcriptions, and explanations in a common language, to facilitate the learning of technical and academic vocabulary.
- Specialist terms are paired with everyday expressions, enabling comprehension for students with intermediate language skills or from diverse linguistic backgrounds.
- The faculty member encourages students to use their own language or dialect to provide examples or explain concepts, promoting shared understanding within the group and valuing individual linguistic repertoires as collective resources.
- The academic staff member fosters discussions and reflections on linguistic and cultural differences, guiding them in a respectful and inclusive manner, and proposes activities that incorporate gestures or movements to represent complex concepts, thus integrating non-verbal communication channels.

2.4 Address Biases in the Use of Language and Symbols

Addressing bias in the use of language and symbols is essential to ensuring an inclusive and respectful learning environment. Language and symbols are never neutral—they reflect cultural, social, and historical contexts that can perpetuate stereotypes or exclude certain identities. It is therefore crucial to adopt a critical and self-aware approach that acknowledges the dynamics of power and the intersections among different identity dimensions such as gender, ethnicity, sexual orientation, ability, and social class. Through the mindful and reflective use of language and symbols, it becomes possible to reduce barriers to learning and to foster equitable and meaningful participation for all individuals..

Recommendations:

– to use clear, accessible, and unambiguous language free from stereotypes, avoiding discriminatory expressions or generalizations. Ensure that technical terms are always contextualized and clarified to prevent misunderstandings;
– to respect individuals' self-identification, using the terms chosen by marginalized groups to refer to themselves and avoiding imposed, outdated, or potentially offensive labels;
– to review and update materials regularly to identify and correct explicit or im-

plicit biases, remove exclusionary symbols or imagery, and ensure both linguistic and cultural accessibility;
– to include examples, case studies, and content that reflect the diversity of human experiences, adopting an intersectional approach that considers the interaction among gender, ethnicity, language, disability, sexual orientation, socioeconomic background, and other identity dimensions;
– to provide historical and cultural explanations for symbols or words that might be misunderstood or controversial, avoiding implicit assumptions about students' prior knowledge;
– to encourage critical reflection on language and symbols by creating opportunities for dialogue and discussion to analyze the social and cultural meanings of the words, images, and symbols used in the learning environment;
– to foster ongoing, participatory dialogue that actively involves all learners and educators in identifying and addressing potential biases within course content and instructional practices.

Examples of activities:

- The faculty member avoids generic masculine forms in materials and oral interventions, preferring inclusive periphrases (e.g., "all individuals" instead of "all students") or truncated forms (e.g., "all were present"). They introduce themselves by specifying their pronouns and invite students to do the same, respecting each person's chosen name and pronouns. The academic staff member maintains attentive, updated, and non-discriminatory language toward all individuals, avoiding offensive or outdated expressions, particularly when referring to marginalized groups.
- The lecturer periodically reviews their materials to eliminate gender stereotypes and distorted cultural representations, ensuring that images, texts, and symbols are neither exclusionary nor misleading. They integrate examples, names, and situations from diverse cultures, identities, and perspectives, offering a pluralistic and respectful representation of humanity.
- The faculty member provides historical and cultural explanations for symbols, images, or terms that may carry different meanings in varying contexts, supporting students in interpreting the instructional content consciously. They also use digital tools to explore the cultural and historical significance of potentially controversial terms and symbols.
- The academic staff member promotes group activities and classroom discussions to critically analyze language and symbols used in teaching materials, encouraging reflection on representations, language, and meaning. They provide students with guidelines for using inclusive language in written work and presentations, accompanied by helpful resources (glossaries, articles, videos).
- The lecturer organizes or participates in workshops and seminars on inclusive language and cultural sensitivity, involving both students and colleagues. They collaborate with experts or representatives of diverse communities to ensure that teaching materials are culturally appropriate and respectful, making instruction a space for open and conscious dialogue.

2.5 Illustrate through Multiple Media

The predominant use of textual materials within academic and educational contexts represents a significant limitation of expressive potential. For this reason, it is essential to design lessons in which written and spoken language are not the sole means of communication, but rather to place greater emphasis on visual and iconographic elements. Presenting content through multiple media is a key objective for making learning more effective.

Recommendations:

- to use a combination of text, images, video, and audio to present key concepts;
- to ensure that all media used are accessible—for example, by providing subtitles for videos and transcripts for audio content;
- to integrate interactive representations, such as simulations or digital models, to actively engage learners;
- to provide alternative text descriptions for images, charts, and diagrams;
- to encourage students to explore content through their preferred media by offering flexible options;
- to ensure that all multimedia materials are compatible with learners' devices and assistive technologies;
- to include practical examples and real-world applications through videos or images to make concepts more concrete;
- to promote the use of digital tools that allow learners to create their own multimedia representations of the concepts they have learned.

Examples of activities:

- The faculty member shares videos accompanied by subtitles and textual transcripts to ensure accessibility for all individuals, including students with hearing impairments or a preference for text-based learning. They integrate podcasts with written guides, providing alternative modes of engagement that respect different cognitive styles and learning needs.
- The academic staff member uses images with alternative text descriptions to make visual resources accessible to students with visual impairments. They accompany graphs and tables with clear textual explanations, making complex data comprehensible. Interactive diagrams are also proposed, allowing students to explore information through multiple pathways.
- The lecturer creates digital simulations that enable students to experiment with concepts in a practical and engaging way, fostering active learning. They integrate concrete examples through videos illustrating real-world applications of theoretical content, strengthening the connection between knowledge and practice.
- The faculty member promotes activities in which students produce multimedia presentations (videos, podcasts, infographics, etc.) to demonstrate their understanding of a topic, encouraging diverse and inclusive modes of expression.

3. Options for Building Knowledge

The construction of knowledge is an active and dynamic process that goes far beyond the simple acquisition of information. It involves a range of complex cognitive operations, such as connecting concepts, synthesizing information, formulating questions, applying selective attention, integrating new information with prior knowledge, engaging in strategic categorization, and practicing active memorization. Decades of cognitive science research have demonstrated that the process of making meaning and transforming accessible information into usable, transferable knowledge does not occur passively—it requires active engagement from the learner.

A fundamental aspect of this process is the collaborative construction of knowledge, in which individuals work together to co-construct meaning by drawing on diverse perspectives and experiences. Through dialogue, shared inquiry, and collective problem-solving, learners have the opportunity to compare, refine, and expand their ideas, leading to deeper understanding and more adaptable knowledge. Research consistently shows that collaborative learning environments foster richer comprehension and collective intellectual growth.

Since individuals differ in their prior knowledge, familiarity with different ways of knowing, and learning strategies, instructional design must include multiple representations of information and intentional pedagogical methods that provide varied supports and tools to ensure equitable access to knowledge for all.

Consequently, adapting curricula and teaching methodologies is essential to promoting fully accessible learning opportunities that are respectful of diversity and capable of valuing the multiple ways in which each person constructs knowledge.

3.1 Connect Prior Knowledge to New Learning

The activation of prior knowledge plays a fundamental role in the learning process, as it facilitates the acquisition and integration of new concepts. The effectiveness of learning depends largely on the learner's ability to connect new information with existing experiences and knowledge, thereby constructing deeper and more enduring meanings. However, barriers and challenges arise when the foundational knowledge required is either lacking or not recognized as relevant by the learner.

In academic and educational contexts, it is therefore essential to adopt instructional strategies that reactivate prior knowledge and provide access to complementary resources containing the necessary preparatory information. The presentation of new content should be structured to elicit the recall of previously acquired knowledge, make explicit the connections between concepts, and promote the integration of new material. It is also important to acknowledge that some learners may possess the required foundational knowledge but be unaware of its relevance to the new topic. In such cases, targeted activation strategies can help reduce barriers and promote equitable access to learning. Consequently, it is advisable to include options and tools that help learners identify and apply their prior knowledge, as well as access supplementary information to fill potential gaps, thereby ensuring a more effective and meaningful learning process.

Recommendations:

- to stimulate reflection and metacognition. Encourage moments of reflection, self-reflection, and meta-reflection through stimulating questions, structured tools (e.g., rubrics, journals, KWL charts), and activities that help learners recognize how new knowledge connects to personal experiences and prior learning;
- to activate and connect prior knowledge, anchoring instructions and new concepts to existing knowledge by using images, activation routines, advanced organizers (such as concept maps or KWL tables), analogies, metaphors, and pre-teaching of key concepts through models or demonstrations;

– to integrate theory and practice in real and meaningful contexts. Provide activities and tools that bridge theoretical knowledge and practical application, such as case studies, research projects, cooperative tasks, and authentic assignments addressing concrete, interdisciplinary problems;
– to foster interdisciplinary connections. Explicitly create links between contents from different disciplines (e.g., literacy strategies in social sciences) to strengthen transversal competences and promote a broader and more integrated understanding of knowledge.

Examples of activities:

- At the beginning of a new module or session, the faculty member proposes brainstorming activities to encourage students to reflect on what they already know about the topic being addressed. They also invite students to use digital tools to build concept maps that connect prior knowledge to new concepts, thereby facilitating the construction of meaning.
- The academic engages students in case studies, research projects, and cooperative tasks, encouraging the analysis and resolution of authentic, real-world problems. In this way, the course content is connected to real-life experiences, promoting contextualized and meaningful learning.
- The lecturer promotes the use of assessment rubrics, learning journals, portfolios, and e-portfolios, supporting students in ongoing critical reflection on their learning process, their understanding of course content, and the development of their competencies.

3.2 Identify and Explore Patterns, Essential Features, Big Ideas and Relationships

The ability to recognize recurring patterns, key concepts, and relationships between ideas is a fundamental component of deep understanding and the transfer of knowledge across different contexts. One of the main differences between experts and novices in a given field lies in the capacity to distinguish critical elements from those that are irrelevant or secondary. As knowledge deepens, learners develop a greater ability to identify the essential features of information, understand their relevance to learning objectives, and allocate their cognitive resources more effectively.

To facilitate this process, it is essential to provide instructional support that helps focus attention on the most relevant elements while avoiding distractions or unnecessary details. The use of explicit cues, prompts, and metacognitive strategies can guide learners' attention toward the most meaningful information, supporting the mental organization of content and its connection to prior knowledge.

It is also important to integrate diverse tools and methodologies that foster

the identification of fundamental conceptual structures, helping learners develop effective strategies to select, categorize, and integrate new information. This approach not only enhances comprehension but also strengthens the ability to apply acquired knowledge in different contexts, promoting more autonomous, effective, and transferable learning.

Recommendations:

- to support comprehension through visual tools and multimodal materials, using a variety of resources (charts, maps, diagrams, videos, images, infographics, paper or digital schematics) to promote the organization, understanding, and transfer of knowledge;
- to integrate graphic organizers, conceptualization routines, and visual strategies that facilitate meaning-making and the structuring of key concepts;
- to emphasize central elements and guide attention, highlighting keywords, concepts, formulas, and prior knowledge through accessible graphics and targeted visual or textual cues;
- to provide metacognitive prompts and guidance to focus attention on the most relevant content, supporting the ability to select, organize, and prioritize information;
- to facilitate learning through examples, comparisons, and reflective strategies, using concrete examples to clarify complex concepts and underline their distinctive features;
- to connect new content to prior knowledge, activating previously acquired skills to approach unfamiliar situations and promote knowledge transfer;
- to integrate digital tools and interactive practices, employing applications, quizzes, tests, or educational simulators to make learning more dynamic, engaging, and customizable;
- to promote the conscious use of digital technologies, encouraging students to explore topics and create concept maps, presentations, or other multimedia products independently and collaboratively;
- to foster collaboration and critical reflection, encouraging group work for the elaboration, comparison, and reworking of disciplinary content;
- to support activities aimed at the co-construction of knowledge, the development of critical thinking, and reflection on one's own cognitive and learning processes.

Examples of activities:

- The faculty member proposes activities for creating and analyzing graphs and charts, inviting students to use digital tools such as Excel, Google Sheets, or online graphic applications to distinguish among different types of visual representations (e.g., histograms, pie charts, scatter plots), thereby promoting critical data literacy.
- The lecturer organizes group work in which students collaborate to build concept maps, diagrams, or summaries, using digital tools such as MindMeister or Coggle, or traditional methods such as pen and paper. The goal is to facilitate understanding of relationships among key concepts and to foster co-construction of knowledge.
- Faculties members can assign critical commentary tasks on multimedia materials, asking students to write short reports based on images, videos, or other audiovisual content presented in class, thus stimulating reflection, analysis, and written argumentation.
- The academic encourages students to carry out small-scale research projects on topics related to the course, to be presented in class using digital resources (e.g., multimedia presentations, short podcasts, infographics), promoting conscious use of technology, independent inquiry, and the connection between theory and current issues.

3.3 Experience Multiple Ways of Knowing and Creating Meaning

An equitable and accessible learning environment supports individuals in constructing knowledge by valuing and cultivating multiple modes of understanding and meaning-making. Diverse cultural perspectives provide unique approaches to knowing and interpreting the world, thereby enriching educational methodologies. In particular, knowledge systems that emphasize holistic and interconnected ways of thinking can complement and expand Western methodologies, promoting more effective and inclusive learning.

Integrating different approaches to knowledge construction allows for the recognition and appreciation of each person's experiences and background, fostering an educational environment that reflects the plurality of learning modes. To achieve this, it is necessary to design materials and learning contexts that incorporate differentiated strategies, including problem solving, storytelling, algorithmic reasoning, holistic thinking, divergent ("arborescent") thinking, and linear reasoning. This methodological diversification enables learners to explore multiple pathways for constructing and applying knowledge, while developing greater awareness of cognitive processes and the strategies most effective in varied contexts.

Learning can be further enhanced through the use of targeted models and techniques that help learners recognize when and how to apply different modes of knowledge construction effectively. Adopting an educational approach that

embraces multiple forms of meaning-making and knowledge building not only fosters deeper and more transferable learning but also contributes to an equitable and culturally responsive education that meets the needs and perspectives of a diverse student population.

Recommendations:

- to diversify content organization to support different cognitive approaches, using a variety of organizational formats (e.g., tables, concept maps, algorithms, sequential models) to present information in both structured and flexible ways. This facilitates processing, comprehension, and learning among students with diverse cognitive styles;
- to provide multiple access modes and pathways for in-depth exploration, integrating optional modules and alternative learning routes within the curriculum. Explore key ideas through different expressive languages—such as literature, film, theater, visual arts, or digital media—to expand entry points to knowledge and value narrative, kinesthetic, relational, and interdisciplinary approaches;
- to support active exploration and meaning-making, employing interactive models, apps, and digital platforms that guide exploration and provide feedback, simulations, or navigable environments to promote discovery, reflection, and autonomy in the learning process;
- to structure content progressively to prevent cognitive overload, breaking complex information into smaller, manageable units and releasing content gradually (e.g., through sequential highlights or guided steps). Include pauses between sections and use graduated structures that support the processing and management of information;
- to remove non-functional obstacles and distractors, eliminating unnecessary visual, auditory, or textual elements from learning materials to maintain focus on cognitive objectives and prevent distractions that may hinder attention and understanding;
- to use explicit prompts to support process sequencing, providing clear step-by-step guidance for complex activities or procedural tasks to build a coherent and accessible logical flow—especially beneficial for students with organizational or metacognitive difficulties.

Examples of activities:
• The faculty member may propose the guided construction of concept maps or summary schemes at the end of each module, including collaborative classroom activities (e.g., collective brainstorming on an interactive whiteboard or the use of digital tools such as Padlet, MindMeister, or CmapTools). Alternatively, the lecturer may provide a basic framework to be completed as homework or in-class activity, allowing students to personalize it according to their learning paths. • Faculties may suggest personalized supplementary materials (e.g., popular science articles, videos, documentaries, novels, podcasts) related to the course content, thereby encouraging autonomous exploration. The educator can also design differentiated thematic paths (e.g., according to difficulty level or specific interests) and organize sharing sessions where students present the materials they have selected. • The academic may assign authentic tasks requiring the application of learned concepts, such as: writing a critical review of a film related to a historical or social theme discussed in class; designing a scientific experiment inspired by a movie scene; comparing a work of art with a literary text; or simulating a debate on an ethical issue linked to the humanities or sciences. The faculty member supervises, guides, and provides feedback throughout the process and on final outputs. • The lecturer may propose and monitor short self-assessment sessions using digital tools (Kahoot!, Quizizz, GeoGebra, Moodle, Forms, etc.) or paper-based quizzes, to be completed individually or in groups. The educator can also co-develop a question bank together with students to foster metacognitive reflection and active review.

3.4 Maximize Transfer and Generalization

Effective learning does not consist merely in acquiring isolated pieces of information, but rather in developing the ability to generalize and transfer knowledge across new and diverse contexts. However, individuals differ in the degree of support they require to strengthen memory and facilitate knowledge transfer. To ensure that learning is genuinely meaningful and applicable in varied situations, it is essential to provide tools and strategies that help connect new content with prior knowledge and identify potential applications in real-world contexts.

One of the most effective ways to support this process is through the use of multiple representations of information, allowing for a deeper and more flexible understanding of concepts. Without such scaffolding, there is a risk that information will be learned but remain inaccessible outside the context in which it was originally acquired.

Integrating practices that promote memory retention, generalization, and knowledge transfer into instructional design fosters greater autonomy in the use of knowledge and enables learners to successfully navigate new learning scenarios, enhancing their adaptability and problem-solving skills. Education that intentionally cultivates knowledge transfer thus ensures not only the acquisition of

content but also its transformation into cognitive tools that empower individuals to engage effectively with complex and evolving situations.

Recommendations:

- to start from everyday experiences, current events, or familiar cultural references (films, music, video games, etc.) to introduce new concepts, thereby promoting comprehension and the ability to generalize learning across different contexts;
- to guide learners in identifying connections between concepts, using concept maps, graphic organizers, semantic networks, or summary charts to highlight relationships, analogies, differences, and possible applications;
- to foster knowledge transfer through explicit strategies, such as guiding questions ("In what other context could you use this knowledge?"), reflective activities, and exercises that require applying learning to new or complex situations (e.g., interdisciplinary problem-solving);
- to use analogy-, metaphor-, and comparison-based exercises to develop cognitive flexibility and the ability to recognize recurring patterns across different contexts (for example: connecting a chemical process to a social mechanism, or using the structure of a cell as an organizational metaphor);
- to incorporate mnemonic devices such as guided paraphrasing, visual imagery, visualization techniques, mind maps, or the method of loci, adapting them to different cognitive styles;
- to promote metacognitive reflection by providing tools such as checklists, self-assessment tables, digital or paper post-its, and visual reminders to help students monitor their progress, identify difficulties, and plan corrective actions;
- to create explicit and recurring opportunities for review, revision, and active practice of learned concepts, including through spaced repetition over time;
- to design challenging and authentic tasks that require the application of knowledge in real or simulated situations.

Examples of activities:

- The faculty member may propose the guided analysis of real or simulated case studies connected to professional contexts or current social issues, in order to foster comparison and reflection. The educator supports students in searching for reliable sources, suggests analytical frameworks, and provides formative feedback throughout the process.
- At the end of a module, the lecturer may invite students to represent key course concepts through alternative formats such as infographics (using tools like Canva or Genially), digital concept maps (CmapTools, MindMeister), short explanatory videos, or podcasts. The educator may provide examples, evaluation rubrics, and templates, and promote in-class sharing to encourage peer review and collaborative reflection.
- The academic may design group activities centered on complex problems that require integrating knowledge and skills from different disciplinary areas, promoting critical thinking and interdisciplinary collaboration.
- At the conclusion of a module, the faculty member may invite students to complete a structured learning journal including guiding questions such as: In what situations have you used or could you use the knowledge gained? What challenges did you face? Which strategies helped you overcome them? How would you connect this module to other courses or to your personal or professional experience?
- The lecturer may propose authentic tasks, such as designing a lesson for school students or future colleagues that applies the theories and models studied; using metaphors, analogies, or narratives to "translate" theoretical concepts into accessible or creative language; and promoting the use of metacognitive tools (checklists, organizers, concept maps, structured notes) to support strategic and conscious exam preparation.

Design Multiple Ways of Action & Expression

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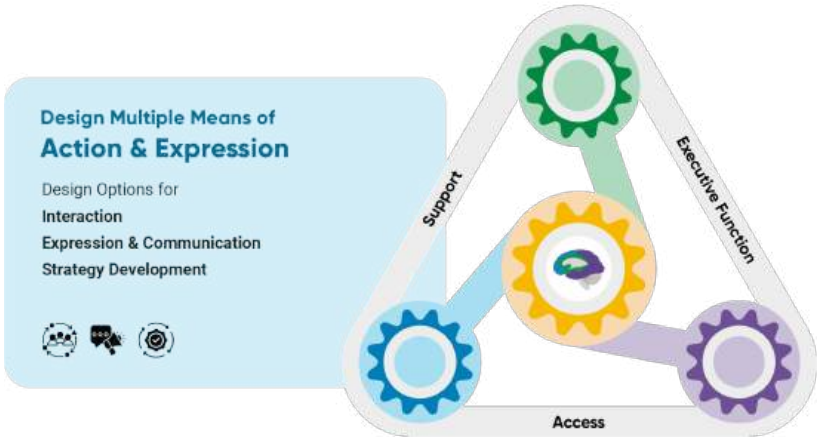

This principle is embedded within the multiple pathways that a student undertakes throughout their learning process, while also considering the various "movements" through which learning is expressed. Each student has a unique mode of functioning that must be acknowledged in order to provide opportunities for expression and meaningful interaction with the surrounding environment and community. In particular, this principle highlights that students may demonstrate their understanding through diverse modes of action and expression.

In the university context, these intentions are reflected in the co-construction of accessible learning environments which, through the support of universal technologies and tools, enable each student to acquire and demonstrate knowledge, skills, and competences. Acknowledging that there is no single mode of action or expression optimal for all, the use of information and communication technologies (ICT) today represents not only an opportunity, but a necessary condition for teaching practices oriented toward inclusion.

Research has long shown that ICT can concretely support students in developing abilities related to active participation, access to learning, and increased intrinsic motivation. Given the diversity that characterizes all learners—in terms of cognitive processes, information processing, thinking styles, interests, and passions—technology can act as a facilitator in the design and organization of university teaching. It helps guide academic practice toward equity, while also recognizing and enhancing the knowledge and competences that students already possess.

1. Provide Options for Interaction

Each student's modes of interaction may vary depending on the context and the nature of the tasks required. It is therefore important to conceive teaching proposals as flexible situations—open to interaction between faculties and students, as well as among students themselves—that can foster self-expression and active engagement while ensuring accessibility to content and information.

Learning environments—whether physical, virtual, or hybrid—should be designed and organized according to a logic that accommodates all forms of movement and interaction by students, thus promoting accessibility both in terms of space and community relationships.

Furthermore, offering students opportunities for choice within learning experiences enables them to develop greater motivation and autonomy in their learning process, pursuing objectives through the enhancement of their multiple resources and personal strengths.

1.1 Vary and Respect Methods of Response, Navigation and Movement

The heterogeneity that characterizes the university student population calls for increasingly broad and diversified forms of expression in order to remove potential

barriers to learning. Providing students with alternative means of responding, selecting, and composing allows them to access their preferred expressive channels while simultaneously valuing and respecting the personal resources they invest in the learning process.

Within the university context, educational experiences represent an equitable opportunity for access to knowledge when multiple modes of interaction and navigation through textual, graphic, and audiovisual information are offered. When each student is granted the opportunity to explore and exercise their own capacities and modes of expression, interaction dynamics can become virtuous and respectful of individual uniqueness.

Recommendations:

- to provide multiple options for completing in-class exercises and learning activities;
- to offer diverse modes of response and interaction during instructional activities;
- to select classrooms or environments where sound, lighting, and air quality make learning experiences accessible (e.g., avoiding proximity to high-traffic or noisy areas such as hallways or streets);
- to enable navigation of online texts using only the keyboard or shortcut keys;
- to make non-textual equivalents of textual content available (e.g., images, videos, pre-recorded audio) and vice versa (e.g., subtitles);
- to ensure accessible communication of teaching materials (e.g., subtitled videos, text-to-speech conversion via Google Drive, voice editors, alternative-format textbooks);
- to facilitate the accessibility of digital documents (e.g., inclusion of bookmarks, navigable tables of contents in LibreOffice Writer documents, proper tagging, etc.);
- in assessments, to provide clear and unambiguous questions (avoiding double negatives or overly abstract formulations) and include concise, closed-ended questions (e.g., multiple choice, true/false/not stated, yes/no);
- to promote active participation by integrating digital tools with opportunities for movement and dynamic interaction;
- to install tactile and multisensory maps of university spaces to facilitate orientation and autonomy for individuals with visual impairments;
- to include accessible signage featuring Braille, high-contrast text, and embossed characters to support diverse users;

– to equip university environments with multimodal alert systems (visual, auditory, and vibratory signals) to ensure safety and inclusion for all individuals, including those with hearing impairments.

Examples of activities:

- A faculty member may offer students multiple options for completing an assignment — for instance, individually, in pairs, or in small groups. Likewise, students can choose how to present their ideas in relation to the learning objective, such as through a graphic representation, a concept map, or a written text.
- The lecturer may encourage students to answer questions using interactive platforms accessible from personal devices (e.g., Mentimeter, Padlet, Miro). In addition, a small group of students may be appointed to take collective notes, which can then be shared and collaboratively expanded through the university's e-learning platform.
- During the course, the teaching staff may organize review sessions, giving students the opportunity to clarify concepts, resolve doubts, and ask questions about the topics covered.
- The lecturer may introduce word prediction software to support sentence construction and vocabulary development (augmentative technology). Similarly, they may use augmentative and alternative communication (AAC) software, allowing students with different communicative abilities to express themselves through symbols or pictograms.
- For in-person examinations, the lecturer may ensure seating arrangements that allow students with hearing loss to clearly see the speaker's lip movements, avoiding obstruction (e.g., by holding a microphone in front of the mouth) while reading instructions. It is also advisable to avoid placing students with hearing loss near those who use readers.
- The teaching staff may provide a shared repository of digital materials presenting the same content in multiple formats: structured PDFs readable by screen readers, subtitled videos, images with text descriptions, and audio versions.
- A lecturer may present a topic through a video, always providing an equivalent text or synchronized subtitles to ensure accessibility.
- To support lectures, the lecturer may prepare concise handouts in PDF/A format, helping students navigate and monitor the course, integrate notes, and combine recordings with accessible and navigable materials.
- For examinations, the lecturer may offer students a choice among different types of assessments, designed in diverse formats but equivalent in terms of learning objectives (e.g., open-ended questions, multiple-choice items, or argumentative essays).
- The lecturer may administer structured quizzes and surveys using alternative tools. Each student group can design a short learning activity that includes at least three different response or access modes. Afterwards, each group presents its activity using tools of their choice and reflects on the advantages and challenges experienced.
- During a lesson, the lecturer may organize a multi-phase activity: an initial standing brainstorming session in small groups, with free movement around the room using post-its and flipcharts; a second phase with interactive quizzes on platforms such as Kahoot or PanQuiz to consolidate understanding; a third phase in which students autonomously explore online resources and select a topic for further study; and finally, a presentation phase in which students can choose the most suitable communication format — such as a blog, podcast, video, or multimedia presentation — for their final project.

1.2 Optimize Access to Accessible Materials, Technologies and Universal Tools

The technological dimension is rapidly gaining a decisive role, both in everyday life and within educational contexts. This development, while partly driven by personal choice, is often shaped by broader economic and social demands. Within this perspective, the university is called to fulfill an ethical—before even organizational—responsibility to ensure equitable and inclusive access to digital technologies for all its students.

Discussing digital accessibility means, on one hand, viewing information and communication technologies as a means to access educational resources and university services; and, on the other, ensuring that content and systems are usable and adaptable by students. It therefore entails designing digital environments free from barriers, aimed at guaranteeing the active and informed participation of every student through diversified learning pathways, multiple communication channels, and the expansion of opportunities for access to information.

Recommendations:

- to provide universal technological tools during examination activities;
- to consider the use of speech-to-text software for completing written assignments;
- to ensure access to alternative keyboards;
- to provide materials in digital formats compatible with assistive technologies;
- to create teaching materials whose digital content complies with technical accessibility requirements (e.g., documents produced in Word, Excel, or OpenOffice can easily be saved in PDF/A format using the built-in functionality of these programs);
- to include a summary and a description of the purpose of each document in a format suitable for use with assistive technologies, clearly indicating how to access information in cases where the digital documents are not compatible with assistive technologies or do not meet accessibility standards;
- to use augmented reality applications to make complex concepts explorable through visual models and 3D interactions.

Examples of activities:
• The lecturer may offer the use of word prediction software that allows students to select the correct word while writing during written examinations. • The lecturer may encourage the use of speech-to-text software to support students with writing difficulties, both during written tests and exercises as well as in classroom activities. • The lecturer may propose the use of alternative keyboards to assist students with motor disabilities in expressing themselves and producing written work. • The lecturer may create accessible textual materials by using a line spacing of at least 1.5 and a legible font (such as Arial, Calibri, or Verdana) with a minimum size of 18, adjustable as needed. To this end, the source file should be produced in an accessible format (.doc, .docx, .rtf, .txt, .pdf/A), so that it can be easily modified when required. • The lecturer may provide a clear and concise description, in caption or audio format, for materials or documents containing images, ensuring that they can be read by screen readers or accessed through a clickable icon linked to an audio file. • Students may digitally simulate the narration of historical or scientific events as if they were personally taking part in them, publishing social media posts (on Twitter, Instagram, etc.) enriched with hashtags related to the course content. This practice promotes digital accessibility in two ways: on the one hand, it leverages familiar and inclusive digital tools to facilitate access to learning materials and services; on the other hand, it encourages the production of content that can be easily adapted to different needs, such as screen readers or simplified interfaces.

2. Provide Options for Expression and Communication

There is no single universal means of expression that can be effective for all students or for every form of communication. On the contrary, certain modes may prove less effective—or even inadequate—depending on specific types of expression and individual learning styles. For this reason, within the academic context, it is essential to ensure a plurality of alternative expressive modalities: both in peer and faculty interactions, and in situations where each student must communicate their knowledge, ideas, and concepts in an appropriate and accessible way throughout the university experience.

2.1 Use Multiple Media for Communication

Within the academic context, it is essential to promote and value the use of diverse types of media as tools for self-expression, for communicating one's ideas and knowledge, and for meeting the fundamental need to communicate. This multiplicity in the use of media helps to overcome the specific barriers that may arise in communication between students and between students and faculties. It also recognizes and gives value to forms of communication that have historically been

marginalized, offering everyone the opportunity to develop broader expressive abilities in an increasingly media-driven world.

For instance, it is crucial that all students acquire competence in composition—not only in writing—and learn to choose the most appropriate medium for each type of assessment, audience, and evaluative format (e.g., written exam, oral exam, or combined oral-written assessment).

Recommendations:

– to develop study materials and organize learning using a variety of expressive means such as text, speech, drawing, illustration, storyboard, design, film, music, storytelling, dance/movement, visual art, sculpture, or video;
– to employ physical manipulations (e.g., 3D models);
– to use multiple media and interactive web/social tools (e.g., discussion forums, chats, university/department websites, annotation tools, storyboards, animated presentations, and mobile/tablet/computer applications);
– to approach and solve problems by applying diverse strategies;
– to allow students to express what they know in different ways, fostering communicative, critical, and collaborative skills through active and engaging learning experiences.

Examples of activities:

- Students may develop interdisciplinary projects that combine multiple modes of expression — for instance, writing a paper accompanied by a video presentation or a short animation illustrating the concept discussed. This allows them to explore the topic from different perspectives and to develop diverse skills, such as writing, visual design, and multimedia communication.
- Students may use 3D modeling software to create visual representations of theories or structures, or manipulate physical models (such as building blocks or base-ten materials) to explore mathematical or scientific problems interactively. This approach helps to make abstract concepts more tangible and enhances comprehension.
- Students may use interactive web tools — such as discussion forums, storyboard software, or collaborative platforms — to work on group projects and communicate questions or uncertainties to the lecturer. For example, they might engage in online discussions about complex topics, build a collective narrative, and share the results or knowledge acquired with peers to receive feedback.
- Students may tackle a complex problem (such as designing an innovative product or addressing a social challenge) by using a variety of strategies, including brainstorming, virtual simulations, and group discussions. By adopting multiple approaches, students explore the problem from different perspectives, fostering more comprehensive and innovative solutions.

2.2 Use Multiple Tools for Construction, Composition and Creativity

It is essential to update the tools used in academic settings to align them with current contexts and innovations. For example, artificial intelligence (AI) has become an indispensable component in designing learning experiences related to the creation and processing of knowledge. Relying exclusively on traditional tools presents several critical issues: 1) it does not adequately prepare students for their future; 2) it limits the variety of content and teaching methods that can be adopted; 3) it reduces students' ability to fully express their understanding of the material; and, most importantly, 4) it restricts opportunities for success for some learners.

Modern multimedia tools can offer students a set of more flexible, creative, and accessible resources, allowing them to participate more actively in their learning and express their acquired knowledge more effectively. Unless the focus is specifically on learning to use a particular tool (for instance, a programming software), university learning environments should integrate a variety of options for building, composing, and creating knowledge. In contexts where multiple tools are available, students can explore and learn to use those that best suit their preferences and academic goals.

Recommendations:

- to use spell-check and grammar-check tools, high-legibility fonts (e.g., Easy Reading), and word prediction software;
- to employ speech-to-text software, human dictation and audio recordings;
- to use calculators, graphic calculators, tools for geometric drawing, or preformatted graph paper;
- to adopt sentence prompts or structured worksheets for sentence completion activities;
- to use online platforms for planning, creation, or concept mapping;
- to employ computer-aided design (CAD) software, writing programs, or mathematical notation applications;
- to utilize mathematical tools, both virtual and physical.
- to use web-based applications, such as collaborative tools, animation platforms, or presentation software.

Examples of activities:

- Students may use spelling and grammar correction tools, along with word prediction software, to refine their essays or academic papers. This helps them improve text quality and focus on structure and content rather than on formal errors.
- Students may leverage speech recognition software to dictate their research or reports. This tool can facilitate writing by allowing them to express ideas more easily without manual typing.
- Students may use graphic tools to solve mathematical or scientific problems, such as graphing calculators or software for solving complex problems, visualizing graphs, or creating geometric drawings to represent abstract concepts more clearly and tangibly. Preformatted graph paper can also be used to facilitate manual plotting.
- Students may utilize concept mapping software (e.g., SimpleMind, XMind, Geco, SuperMappex) to organize and plan key concepts in their research. These tools allow them to visualize relationships among ideas and help structure essays or presentations, making the learning process more effective and interactive.
- Students working in small groups may face specific challenges (e.g., designing more inclusive and efficient study spaces). These workshops stimulate creativity in various ways: proposing original ideas and thinking outside the box to find unconventional solutions to assigned problems; experimenting and building practical models, making their ideas tangible through prototyping; and progressively refining solutions based on feedback, developing a flexible and dynamic approach to problem-solving. The objective of these workshops is to develop innovative solutions to real-world problems through creative and collaborative thinking. By following an iterative and experimental process, students are encouraged to identify original and functional responses to concrete challenges, enhancing analytical, creative, and cooperative skills.
- Students, divided into small groups, may strengthen lateral thinking through workshop activities that address real or hypothetical challenges. Once the challenge is presented, each group must solve the problem by adopting the perspective of a professional figure aligned (or not) with their field of study or area of expertise. After an initial individual brainstorming phase, group members share ideas and combine different perspectives to create an interdisciplinary solution plan. The aim of this activity is to develop students' capacity to approach a problem from multiple viewpoints, stimulate lateral thinking, and encourage thinking beyond traditional frameworks. This activity can foster mental flexibility, creativity, and adaptability to complex situations.
- AI image generators (e.g., DALL-E, Craiyon, Bing Image Creator, Canva AI) may be used to transform abstract ideas into visual representations, facilitating comprehension and reinterpretation of scientific, historical, or artistic concepts. Students may create illustrations to support a presentation, narrative, project or research work.

2.3 Develop Skills with Graduated Supports for Practice and Performance

Providing appropriate support can assist students in their process of exploration, experimentation, practice, and the development of self-confidence throughout their university journey. This type of experience, which involves exploration, experimentation, and practice, is crucial for authentic and meaningful learning. Rather than focusing exclusively on the final outcome, the most significant learning often occurs during the process itself.

Structuring university learning environments to facilitate the development of

flexible competencies through a broad range of formative assessment opportunities and progressively released scaffolding is essential. Such assessments and support structures can vary depending on objectives and contexts, offering flexibility in approach. While engagement in the learning process is fundamental, the final outcome or performance can be equally important for consolidating competencies through multiple forms of expression. Performances provide students with the opportunity to synthesize and apply what they have learned, making their learning both personal and shareable.

Overall, it is essential to include options that promote the development of students' competencies both during practice and preparation and in performance during final evaluation.

Recommendations:

- to use differentiated models to illustrate the same outcomes through varied approaches, strategies and skill sets;
- to adopt diverse types of mentors—such as faculties or tutors—who employ different methods to motivate, guide, provide feedback, or share information;
- to utilize scaffolding that can be progressively released as students' independence and competence increase, for instance through integration within digital reading and writing software;
- to provide differentiated feedback that is accessible and can be personalized for each student;
- to offer multiple examples of innovative solutions to authentic problems.

Examples of activities:

- Students can work on a research project using different modes of presentation; one group may create a visual presentation with charts and infographics, another group may write a detailed report, and yet another may record a podcast or produce a video. In this way, each group explores the same topic through different approaches, adapting to their strengths and preferences while achieving the same learning objective.
- Each learner may be supported by a tutor who adopts a differentiated approach based on their learning style. For example, a student with visual strengths may receive support through visual resources such as concept maps, while a student who prefers verbal discussion may benefit from one-to-one mentoring sessions. This type of personalized support can help each student develop a deeper understanding of the subject matter.
- The use of integrated spelling and grammar correction software can help improve written texts; as students gain greater autonomy, the tutor may gradually reduce direct support and encourage the use of advanced tools, such as online bibliographic resources or citation management software. This approach helps students develop their skills progressively, enhancing independence and self-directed learning.
- Students may receive personalized feedback on their work according to their specific needs. Some may require detailed and analytical feedback on their knowledge, while others may benefit from more practical and direct feedback through live review sessions or video tutorials. This type of feedback supports students in progressing more effectively and purposefully, valuing their diverse learning styles.
- The educator may introduce "narrative challenges," i.e., episodic learning paths with increasing levels of difficulty, where students confront academic problems as protagonists in a story.
- A digital portfolio (ePortfolio) may be created as an active tool that encourages students to reflect on their learning journey, identify their areas of strength and improvement, and document their experiences meaningfully.
- The faculty member may promote performance in real or simulated contexts: applying competence in concrete situations reinforces learning, builds confidence, fosters greater autonomy, and enhances effective communication.

2.4 Address Biases Related to Modes of Expression and Communication

Individual and systemic biases often relegate certain forms of expression and communication to the background, granting greater value to others. For example, many educational institutions tend to regard writing as the most rigorous form of communication, whereas storytelling—an essential method of transmitting knowledge across generations in many Indigenous communities—has historically been overlooked or undervalued. Similarly, subtitles are often prioritized over sign language. Recognizing and valuing a variety of communicative modalities within the academic context is crucial to fostering truly inclusive learning environments.

Recommendations:

- to anticipate and analyze how biases may influence the modes of expression and communication available;
- to examine in advance how such biases might shape the selection of expressive and communicative modalities;
- clearly to communicate that all modes of expression—when consistent with the learning objective—are valued equally;
- to promote the use of multimodal digital technologies to foster creative, personal, and inclusive communication that values visual, auditory, and interactive languages;
- to integrate expressive forms belonging to diverse cultures, including non-Western or minority traditions, and value communication forms such as bodily expression, thereby supporting culturally aware and intercultural communication;
- actively to involve students in defining modes of expression by inviting them to suggest communicative forms they find meaningful for representing their knowledge and skills;
- to encourage critical awareness of implicit biases that may lead to the devaluation of certain forms of communication, for instance those associated with disability, cultural background, or linguistic traditions.

Examples of activities:

- The faculty member could initiate a critical analysis of biases in the selection of communication modes. Students could be invited to examine how cultural or social biases influence the choice of communication methods in academic contexts. For example, through group workshop activities, they could analyze which forms of communication are most privileged and which may marginalize students in the academic environment. This would encourage critical reflection on modes of expression.
- Students could be encouraged to use various media (writing, video, oral presentations, production of materials to be displayed in the Department, etc.) to express the same concept, ensuring that each form of expression is evaluated according to the same criteria. They could present a topic or research using different modalities and reflect on the idea that, when aligned with the learning objective, each expressive medium has equal value, contributing to reducing bias toward specific communication tools.
- Students could work on a project exploring how cultural biases influence representations in the media. They could analyze different types of expression, such as images, texts, and videos, and reflect on how these tools are selected and used differently depending on social and cultural contexts, emphasizing the importance of considering all modes of expression as equally valid for communicating ideas and knowledge.

3. Provide Options for Developing Strategies

To develop effective strategies, it is essential to consider students' ability to act competently. These skills enable them to move beyond short-term, impulsive responses and instead focus on setting long-term goals, planning strategies to achieve them, monitoring progress, and adapting approaches when necessary. This involves fostering executive functions—the cognitive capacities that allow students to interact more effectively with their environment.

Within the academic context, promoting the development of these functions is crucial in two main ways: 1) by supporting lower-level skills so that they require fewer executive resources, and 2) by strengthening higher-order abilities and strategies to make them more effective and sophisticated.

3.1 Establish Meaningful Goals

Defining clear and stimulating goals is an essential step in the university learning process. It is important to set targets that reflect the scope and complexity of the knowledge to be acquired in each course, while remaining concrete and measurable. Once a goal has been established, a plan can be designed to achieve it, identifying the most suitable resources or tools to support students' learning. Having a clear understanding of one's goal(s) allows students to monitor progress, recognize when strategies need to be adjusted, and receive meaningful feedback to foster continuous improvement.

Recommendations:

- to provide guidance and support structures to help students estimate the level of effort, resources, and difficulty required for academic activities. This helps them set challenging yet realistic goals, taking into account their abilities and available tools;
- to use concrete models and examples illustrating both the goal-setting process and the outcomes achieved, offering students clear and practical references. These examples can serve as guides for developing skills in planning and organizing objectives;
- to offer practical tools such as guides and checklists that allow students to clearly structure the process of monitoring their goals. These tools ensure a methodical and systematic approach, contributing to greater learning effectiveness;

– to encourage students to share their goals and study plans formally in class or through academic platforms. This practice fosters a collaborative learning environment, allowing for constructive peer and faculties feedback.

Examples of activities:

- Students could be encouraged to plan complex projects and study materials. In this case, faculty members could provide planning templates that allow students to estimate the required effort, identify necessary resources (such as software, materials, and time), and assess the difficulty. This helps students set realistic yet challenging goals, taking into account their skills and the tools available to them.
- Students could analyze case studies of past activities, examining how objectives were defined and achieved. By providing concrete examples of specific goals and describing the processes through which results were obtained, teaching staff can help students understand how to plan effective and realistic objectives.
- Students could receive guides and checklists to structure the process of monitoring objectives for a research project or exam. These tools enable students to follow a methodical and organized approach, improving their ability to plan and achieve goals effectively.
- The course leader could suggest the use of tools useful for tracking the steps needed to complete an effective study plan. Students can establish distal goals (e.g., which courses they want to take and which exams they want to complete), proximal goals (e.g., how much material they want to study within an appropriate timeframe to prepare for exams), organize their available time (e.g., blocking hours already allocated to lessons, labs, or other commitments), and finally, distribute study tasks (e.g., specifying the subject, topic, or number of pages to cover), considering the varying difficulty of topics, unexpected events, and other needs.
- Students could be encouraged to publish their writing objectives and research plans on an online platform or during a class meeting. This allows them to receive feedback from peers and faculty members, improving the quality of their work through collaboration and discussion. Publishing objectives also promotes personal responsibility and commitment to achieving the established goals.

3.2 Anticipate and Plan for Challenges

To support students in anticipating and planning for challenges and in identifying effective strategies, it is essential to provide multiple opportunities—such as "cognitive interventions" that encourage them to think and reflect, institutional support structures that facilitate the application of strategies, and involvement in decision-making processes with the guidance of an expert or peer tutor.

Once a goal has been established, it is crucial to devote time and resources to developing an appropriate strategy, selecting the most suitable tools, and anticipating potential obstacles that may arise along the academic journey. This kind of proactive planning can help remove barriers and ensure that a greater number of students have the opportunity to achieve their academic goals successfully.

Recommendations:

– to provide reflective prompts to help students anticipate potential difficulties and foster strategic planning;
– to use recommendations that encourage students to "show and explain their work," making their reasoning and process visible;
– to adopt checklists and project planning templates to clarify objectives, set priorities, define sequences, and organize the steps needed to achieve them;
– to collaborate with expert or peer tutors who can model cognitive processes through "think-aloud" strategies;
– to work in partnership with university delegates, advisors, and student support services—such as those dedicated to well-being, tutoring, and pedagogical assistance—to create a coordinated network of academic support;
– to use guides or short "video capsules" to help students break long-term goals into short-term, attainable milestones.

Examples of activities:

- Students could be invited to reflect on the personal strategies and resources they might activate to complete various academic tasks and to develop a strategic plan to support them. Faculty members could suggest planning in advance, taking into account different possible scenarios, such as using software tools, time management, or access to resources. This will help students develop a proactive approach and strengthen their problem-solving skills.
- Students could be encouraged to present the knowledge they have acquired and the strategies they have implemented to their peers, explaining their steps through "thinking aloud." This process helps clarify reasoning and identify potential errors or misunderstandings. Additionally, it allows teaching staff to better monitor students' comprehension and provide immediate feedback during the problem-solving process.
- Students could be invited to plan a group project. Course leaders could provide planning templates and checklists to help students define objectives, establish priorities, organize workflow, and follow the necessary steps to complete the project effectively. This approach promotes clarity and time management.
- Collaboration with expert or peer tutors and academic planning support services: students could work with expert tutors or peer tutors who support them in planning academic activities. Tutors could model "thinking aloud" during writing, explaining how they organize and plan their ideas, and provide practical suggestions to improve academic work. Moreover, students could be encouraged to request services from the university's wellness, tutoring, and pedagogical-didactic support offices to receive additional guidance on study management and planning short-, medium-, and long-term goals.

3.3 Organize Information and Resources

To organize information and resources effectively in academic contexts, it is essential to consider students' working memory as a "temporary workspace" where

relevant chunks of information are held to support knowledge construction and problem solving. In light of this, faculties can employ a variety of organizational tools and supports to help manage and structure information in ways that make it more accessible and easier for students to retain and use.

Recommendations:

– to use graphic organizers and templates to help students collect and structure information effectively;
– to provide guidance on how to classify, systematize, and identify recurring themes and patterns within academic materials;
– to adopt checklists and note-taking guides to promote a more efficient and organized approach to managing information;
– to encourage collaborative reworking activities (e.g., study groups, forums, wikis) that allow students to build shared collections of resources and notes;
– to teach metacognitive strategies—such as the use of keywords, bullet-point summaries, or the construction of timelines—to enhance students' ability to independently organize information;
– to break down complex content into smaller, manageable units to reduce cognitive load and facilitate the gradual integration of new information.

Examples of activities:

- Students could use concept maps to gather and organize information on the main exam topics. Faculty members could guide students in using graphic organizers to highlight connections between characters, events, and themes, facilitating comprehension and memorization of key ideas. This approach will help students visualize the structure of the text and develop critical reading skills.
- Students could be encouraged to use a classification method to group theories according to categories. Teaching staff could provide a template that helps students systematize this information, identify recurring themes among theories, and create an organized framework that allows for easy comparison of different approaches. This will foster a deeper understanding of the various schools of thought.
- Students could use a structured template for taking notes during lectures, including sections for definitions, key concepts, experiments, and observations. The lists could also include spaces to record questions or points for further exploration. This tool will help students focus on the most relevant details and organize their notes efficiently, facilitating the review and study process.
- Students could be provided with guides to help them identify, classify, and systematize the sources used in academic research. The guides could include steps for noting bibliographic details, the main themes addressed in each source, and how each source relates to their own research. This approach will help organize information coherently and support the development of a solid foundation for research work.

3.4 Strengthen the Ability to Monitor Progress

Learning cannot occur without adequate feedback, which enables students to clearly understand their progress toward achieving educational objectives. It is crucial to generate multiple forms of feedback throughout the entire learning process in order to effectively support students' growth. This feedback should be closely aligned with the learning goals and be explicit, timely, informative, accessible, and adaptable to individual needs.

A particularly important aspect is the provision of formative feedback, which helps students independently monitor their progress and use this information to guide their efforts, refine their strategies, and continuously improve their performance.

Recommendations:

- to encourage self-monitoring and reflection through targeted prompts;
- to use visual representations of progress (for example, providing students with self-assessment forms such as "sample exam tests" so they can track the development of their knowledge and study methods, as well as charts and tables showing improvement over time);
- to explore different types of feedback suited to individual preferences, specific objectives, and learning contexts;
- to provide models to guide students' self-reflection on the quality and completeness of their study processes;
- to offer differentiated self-assessment strategies, such as role-playing, video reviews, and peer feedback;
- to use practical tools like checklists, rubrics, templates, and exemplars to support and simplify the evaluation process.

Examples of activities:

- Students could be invited to reflect on their writing process through a work portfolio. They would upload a draft of their writing and annotate the changes or improvements they made. In this way, they can monitor their progress over time and evaluate the evolution of their writing skills. Faculty members could suggest targeted questions, such as "Which part of the writing did you find most difficult?" or "How did the revision improve the content?" This exercise encourages self-awareness and continuous improvement.
- Faculty members could structure some open-ended practice questions and upload them to the university or department portal. This way, students can simulate these exercises during their preparation and independently monitor their skill acquisition over time.
- Students could use charts to visualize improvements. The charts could show how test scores evolve over time, providing a visual representation of areas where students have enhanced their skills. Faculty members could also encourage students to reflect on these improvements through class discussions, asking them to explore what contributed to the progress and how to apply similar strategies in the future.
- Students could receive differentiated feedback based on their learning preferences and individual goals. For example, students who prefer visual feedback could receive annotations on videos of their speaking or writing, while others might benefit from written or oral feedback. Additionally, teaching staff could propose role-playing activities in which students take on the role of the faculty member or tutor and provide feedback to their peers on an oral presentation, fostering self-assessment in informal contexts.
- Students could use templates to reflect on the quality and completeness of their research work. For instance, a template could include sections where they answer questions such as: "Is my research objective clear and precise?" or "Have I considered a variety of sources in my research?" This type of self-reflection allows students to identify areas for improvement in their research approach and ensure that the final work is complete and well-structured. Faculty members could integrate rubrics to guide the self-reflection process, making the feedback even more targeted and useful.

3.5 Challenge Exclusionary Practices

Prejudice, stereotypes, and entrenched systems of discrimination can lead to the exclusion of students within academic life. It is therefore essential to create opportunities to learn from the experiences of these students in order to identify and address exclusionary practices.

Time should be dedicated to regular academic community sessions and individual reflection moments focused on these issues. Both individual and collective efforts are needed to recognize, analyze, and confront exclusionary practices. Collaboration—between facultiess, students, and the broader academic community—is key to developing concrete and targeted actions that actively counter exclusion and promote university inclusivity.

When an exclusionary practice is identified by a faculty or a student, it is important to provide opportunities and challenges that transform the experience

into a learning process, using inclusive and equity-based approaches to foster awareness, dialogue, and systemic change.

Recommendations:

– to create dedicated moments for regular academic community meetings and individual reflection sessions with students;
– to collaborate at both the individual and collective levels to identify, analyze, and address dynamics of exclusion;
– to work both as individual faculty and as an academic community to develop concrete, targeted actions that counter exclusionary practices and promote the creation of inclusive university communities;
– to provide opportunities for constructive challenge and resolution when exclusionary practices emerge, using community-based and participatory approaches.

Examples of activities:

- Meetings could be organized in which students, together with faculty members, discuss experiences, challenges, and successes related to their academic journey. During these meetings, students could be invited to reflect individually on their own learning and share it with the group, with the aim of building a culture of mutual support and inclusion. Additionally, faculty members could dedicate time for individual reflection sessions, helping students identify their strengths and areas for improvement in their learning approach.
- Within the framework of a course, faculty members could organize group activities that explore cases of social or academic exclusion within university dynamics. For example, students could be invited to work in groups to analyze the barriers that some student groups might face in accessing academic resources. Subsequently, the groups could present practical solutions to reduce these barriers, concluding with a collective discussion on how to enhance inclusivity in the university environment.
- Faculty members could collaborate with other academic figures to create and implement inclusion policies, such as introducing inclusive language in teaching materials or organizing events that celebrate cultural diversity, professional diversity, and equal opportunities for students. For instance, in an interdisciplinary study program, faculty members could develop learning activities on topics such as inclusive practices and equal opportunities, integrating these themes into activities and curricula, and creating opportunities for students to explore them critically and constructively.
- A course could include activities in which students are encouraged to explore power dynamics and exclusion within the university community. Students could be divided into groups to discuss how exclusionary practices manifest in various contexts (e.g., academic, social, cultural) and how to proactively address them using community-based approaches. This could include the creation of a manifesto promoting inclusivity, mutual respect, and social responsibility among students, with the active support of faculty members and other academic figures.

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Universal Design for Learning: annotated Glossary of terms for theoretical and operational orientation

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The glossary aims to clarify the meaning of the key terms employed within the three principles of *Universal Design for Learning (UDL)*, which in this volume are articulated and adapted to the university context, thereby serving both as a conceptual repertoire and as an operational tool for orientation. It encompasses technical and specialized entries as well as terms of broader pedagogical use that remain nonetheless significant for inclusive teaching. Each entry is accompanied by an explanatory note that contextualizes its use, elucidates its pedagogical scope, and highlights its applicability within academic learning environments.

From this perspective, the glossary does not merely seek to make accessible a pedagogical and didactic lexicon that, although central to the discourse on inclusion, may appear distant or unfamiliar to other disciplinary frameworks. Rather, it aims to foster a shared and cross-disciplinary understanding of key concepts, thereby promoting an inter- and transdisciplinary dialogue. This objective, which transcends a merely definitional purpose, responds to the need to construct a common language enabling university lecturers – regardless of their disciplinary field – to engage on shared conceptual and terminological grounds, thus allowing them to translate such references into genuinely inclusive teaching practices.

The structure of the glossary, organized according to the three UDL principles, reflects the intention to combine theoretical rigor with practical applicability, positioning itself as a mediating device between the conceptual framework of UDL and the concrete needs of university teaching. It is therefore not a simple definitional compendium, but an hermeneutic-conceptual instrument designed to translate UDL principles into educational practice. Through concise yet mean-

ingful examples, it seeks to guide educators toward an authentic appreciation of student diversity, while simultaneously opening a space for critical reflection on biases and preconceptions – often latent or implicit – that risk hindering full participation and the recognition of each learner's value.

The key terms and their respective definitions have been selected based on their relevance and conceptual recurrence and are presented according to the three UDL principles.

Within the principle *"Designing Multiple Means of Engagement"* the selected terms unfold along a continuum that ranges from foundational values – accessibility, equity, empathy, and prosociality – to individual processes of self-regulation and engagement, culminating in innovative teaching methodologies such as cooperative learning, debate, role playing, problem-based learning, and gamification. Alongside these methodologies, the glossary includes concepts related to social and cultural dynamics, such as bias and restorative practices, as well as organizational tools – including progress dashboards and timeboxing –that enhance the effectiveness of learning pathways. The glossary also reflects an international dimension through references to initiatives such as Collaborative Online International Learning (COIL) and Erasmus outgoing mobility, while the experiential dimension is represented by practices like educational escape rooms. Finally, peer assessment and peer tutoring, together with the central role of the syllabus as a guiding document, complete a framework that weaves together approaches, tools, and values, fostering a coherent integration between pedagogical design and inclusive educational practice.

Within the principle *"Designing Multiple Means of Representation"* the glossary encompasses, on the one hand, concepts that describe dynamics of discrimination and marginalization – such as ableism, bias, and homolesbobitransphobia – which make visible the mechanisms through which differences are transformed into inequalities; and, on the other hand, strategies aimed at valuing diversity, such as neurodivergence understood as a paradigm of heterogeneity, translanguaging as a practice of linguistic openness, and various support tools including Augmentative and Alternative Communication (AAC), Italian Sign Language (LIS), and easy-to-read language.

This section also includes didactic and epistemological practices, ranging from co-construction of knowledge to authentic tasks, from debate to role playing, and extending to metacognitive strategies such as KWL charts, rubrics, and peer review. Together, these practices outline an educational scenario in which the learner is placed at the centre of collaborative and reflective processes.

Supporting these practices are theoretical frameworks such as Multiple Intelligences, Cognitive Styles, Cognitive Load Theory, and Situated Knowledge, all of which contribute to legitimizing the diversity of ways of knowing.

Finally, terms associated with the digital and technological environment – including touch-friendly interfaces, responsive layouts, mobile-friendly content, alt text, and screen readers – underscore how the digital sphere today represents a privileged laboratory for experimenting with inclusive practices. Assistive technologies, in particular, assume a role that is not merely compensatory but also generative of new forms of participation.

Within the principle *"Designing Multiple Means of Action and Expression"* the glossary encompasses resources, strategies, and practices that, although diverse in nature, collectively contribute to enhancing learners' accessibility and expressiveness. Concepts such as high readability, Augmentative and Alternative Communication (AAC), and multimodal alert systems represent concrete responses aimed at facilitating the accessibility of content and promoting inclusive communication.

These are complemented by emerging technologies – including Augmented Reality (AR), extended technology, and e-learning platforms – which describe innovative scenarios for teaching production and expression. Other glossary entries, such as concept maps, brainstorming, lateral thinking, and scaffolding, refer to didactic tools and methodologies designed to stimulate creativity, flexibility, and the progressive development of autonomy.

These resources intersect with concepts linked to cognitive processes, executive functions, metacognition, and motivation, highlighting the centrality of self-reflective and self-regulatory dimensions in learning pathways. Within the same perspective, additional terms such as mentoring, feedback, and formative assessment point to practices that guide and sustain the educational experience in a dynamic and continuous manner.

Finally, several entries emphasize the intercultural and inclusive dimensions of learning: intercultural communication and the use of ICT as tools for knowledge sharing and co-construction, together with the adoption of digital portfolios and e-portfolios to document individual learning paths. These are closely related to authentic assessment practices, which strengthen the connection between learning processes and real-world contexts.

Despite their heterogeneity, the terms collected below converge toward a shared horizon: the promotion of flexible, responsive, and multimodal educational environments in which every learner can fully express their potential, com-

petencies, and identity. The underlying assumption – the core elaborative principle of Universal Design for Learning (UDL) – is that the multiplicity of strategies, tools, and technologies does not constitute an optional add-on, but rather a prerequisite for the realization of an authentically inclusive and plural (university) pedagogy.

Design Multiple Means of Engagement

Accessibility

A condition that enables a physical and/or digital environment, product, or service to be used by anyone without barriers, ensuring participation and autonomy. In academic contexts, accessibility concerns not only spaces and materials but also the design of teaching and learning in relation to diverse modes of functioning and the specificities of human plurality. Beyond physical and technological obstacles, socio-cultural barriers – arising from prejudice and stereotypes – also play a crucial role. National and European frameworks (e.g., the UN Convention on the Rights of Persons with Disabilities, the 2030 Agenda, and EU strategies) recognize accessibility as a fundamental right.

Collaborative Online International Learning (COIL)

An online educational approach designed to promote intercultural exchange and collaboration between Italian and international universities through shared virtual learning activities.

Cooperative Learning

A pedagogical methodology based on structured cooperation among students, who work in defined roles to achieve shared goals while developing positive interdependence—meaning that individual success depends on group success, and vice versa. In university teaching, cooperative learning can enhance transversal competencies such as communication, shared responsibility, and critical thinking, which are essential for academic and professional growth.

Debate

An instructional methodology based on a structured exchange between two teams of students who argue opposing viewpoints (pro and con) on an assigned topic, following specific roles, times, and procedures. The regulated debate aims to foster cross-cutting skills such as argumentation, public speaking, critical thinking, active listening, and role taking – the ability to adopt another's perspective.

Educational Escape Room

Learning experiences that use physical or digital puzzle-based games involving clues and problems to be solved within a set time limit in order to "escape" from a scenario or complete a mission. These activities are designed to stimulate engagement, cooperation, logical reasoning, problem-solving, and creativity.

Empathy

The ability to adopt another's perspective and understand their emotions, feelings, and thoughts while maintaining a clear distinction from one's own. In academic contexts, empathy is considered a soft skill that enhances the quality of educational relationships, fosters an inclusive and collaborative climate, and contributes to the development of key transversal competencies essential for both university education and professional life. Along with other soft skills – such as effective communication, teamwork, and critical thinking – it represents a core element for active participation, peer cooperation, and the building of learning communities.

Engagement

The active involvement of students at the cognitive, emotional, and behavioural levels in the learning process. In higher education, engagement functions as a key indicator of participation, motivation, and sense of belonging within the university community. It is promoted by interactive and inclusive teaching methodologies and contributes to the development of transversal competencies such as collaboration, self-regulation, resilience, and problem-solving, all of which are essential for academic and professional success.

Equity

An educational principle that ensures each individual receives what they actually need to participate and learn, acknowledging their uniqueness. It differs from equality, which merely provides the same opportunities to everyone without considering differences. In the academic context, equity entails enabling all learners to access course content and activities in meaningful ways, avoiding discrimination and inequalities stemming from physical, digital, or socio-cultural barriers.

Erasmus Outgoing

An international mobility opportunity for study or traineeship abroad within the framework of the European Union's Erasmus+ programme.

Gamification

The application of game-based mechanics and dynamics – from both traditional and digital contexts (points, challenges, badges, missions, avatars) – to education, with the goal of enhancing student engagement, motivation, and participation. In higher education, gamification often takes place through digital platforms and environments that make learning interactive and customizable, while also promoting the development of transversal skills.

Peer Assessment

A form of reciprocal evaluation among peers in which learners provide and receive feedback on each other's work or performance. In academic settings, this practice fosters critical awareness, reflective autonomy, and shared responsibility, while simultaneously developing transversal skills such as argumentation, collaboration, and self-assessment.

Peer-to-Peer / Peer Tutoring

A collaborative learning methodology based on peer interaction, where pairs of students take on the roles of tutor (guiding the learning process) and tutee (receiving support). These roles may alternate depending on each learner's strengths. Peer tutoring supports the development of relational, communicative, and cognitive skills, encouraging cooperative and reciprocal learning.

Problem-Based Learning (PBL)

A pedagogical approach centred on students' resolution of complex and authentic problems, designed to stimulate critical thinking, inquiry, and active learning.

Progress Dashboard

A digital visual tool that enables the monitoring of progress toward a project, process, or learning goal through charts, graphs, and tables. In academic settings, dashboards help both faculties and students to track educational activities, research projects, or learning pathways, facilitating continuous assessment, awareness of progress, and early identification of potential issues.

Project-Based Learning (PjBL)

A pedagogical approach focused on the design and implementation of authentic, complex projects that integrate interdisciplinary knowledge and skills, foster-

ing transversal competencies such as autonomy, collaboration, and metacognition.

Prosociality

A set of behaviours and attitudes oriented toward helping and supporting others without expecting rewards, thereby generating positive reciprocity and inclusive relationships. In higher education, prosociality is considered a transversal competence that strengthens peer collaboration, promotes a supportive learning climate, and contributes to the development of cohesive and participatory learning communities.

Restorative Practices

An educational and relational approach aimed at building, maintaining, and repairing bonds of trust within the learning community. Through dialogue, assertive communication, and shared conflict management, restorative practices foster a participatory and inclusive climate in academic contexts, reinforcing both individual responsibility and group cohesion.

Self-Regulation

The ability to control and manage one's impulses, emotions, and behaviours in order to adapt to environmental demands and pursue specific goals. In higher education, self-regulation translates into the effective management of study, time, and resources, fostering autonomy, intrinsic motivation, and the capacity to cope with complex or stressful situations.

Situated Learning

An educational approach that grounds learning in the active experience of the learner within authentic, real, or virtual contexts, through a dynamic process centred on practical engagement and interaction with others and the surrounding environment. In university teaching, the situated perspective supports the development of transferable competencies through experiences such as internships, workshops, simulations, and case studies.

Syllabus

A document that outlines the content, objectives, teaching methods, and assessment criteria of a university course, serving as a reference framework for both faculties and students throughout the learning process.

Timeboxing

A time management strategy that involves allocating a fixed and predefined time interval to a specific activity, dividing work into discrete temporal units. In academic contexts, timeboxing promotes self-regulation, focus, and efficiency in studying or project work, helping students plan tasks effectively and reduce the risk of procrastination.

Design Multiple Means of Representation

Ableism

A set of representations, prejudices, attitudes, and social practices that discriminate against persons with disabilities, perceiving them as possessing a deficient or inferior condition compared to an assumed norm of functioning. This reductive view reinforces dynamics of exclusion and marginalization, as it interprets disability as an individual problem rather than as an expression of the natural heterogeneity of human existence. Countering ableism means promoting an inclusive culture capable of recognizing the value and legitimacy of diverse forms of human life and social participation.

Alternative Text (Alt Text)

Short written descriptions associated with images, charts, or other visual content that convey meaning to users with visual impairments through screen readers.

Assistive Technologies

The set of hardware devices, software, and technological tools designed to support persons with disabilities in improving functional capacities, overcoming disadvantage, and participating fully in social, educational, and professional life. These technologies act as mediators of accessibility, reducing physical, cognitive, sensory, and social barriers while promoting autonomy, inclusion, and learning. They range from low-tech aids (e.g., magnifiers, ergonomic supports, symbolic communicators) to advanced solutions based on artificial intelligence, augmented reality, or human–machine interfaces (screen readers, eye-tracking systems, intelligent robotic prostheses).

Augmentative and Alternative Communication (AAC)

A set of strategies, techniques, and tools designed to support or replace verbal communication for individuals with temporary or permanent complex communication needs. AAC includes systems of symbolic representation (pictograms,

images, graphic symbols), low-tech tools (communication boards, notebooks), and high-tech digital devices (electronic communicators, dedicated software).

Authentic Tasks

Learning activities that reproduce realistic or plausible situations, requiring the concrete and interdisciplinary application of knowledge in meaningful contexts, thereby enhancing the transferability of learning and the development of transversal skills. In higher education, authentic tasks often simulate professional or research settings, demanding the critical and contextualized application of disciplinary knowledge. Common examples include research project design, case analysis, educational or technological intervention planning, professional simulations, and participation in workshops or internships.

Bias

Implicit cognitive mechanisms that shape perceptions, judgments, and behaviours outside conscious awareness, thereby influencing interpersonal relationships and decision-making processes in systematic ways. In university contexts, such biases can affect student evaluation, classroom management, and access to educational or research opportunities. Biases related to gender, cultural background, socioeconomic status, or disability may unconsciously influence faculties' expectations and the quality of academic interactions, thus generating inequalities in educational trajectories.

Cognitive Load Theory (CLT)

Developed by John Sweller (1988), this theory connects principles of cognitive functioning with effective instruction. It posits that working memory – responsible for immediate information processing – has limited capacity, which may create a bottleneck for learning. Cognitive load refers to the total mental effort required at a given moment and may be: Intrinsic, linked to the inherent complexity of the material; Extraneous, caused by irrelevant elements (always negative and to be minimized); Germane, related to the construction of new mental schemas (beneficial for learning). According to CLT, learning is most effective when instruction reduces extraneous load and optimizes intrinsic and germane load.

Cognitive Styles

A psychological concept describing the preferred ways individuals perceive, process, and organize information. Cognitive styles concern how a person learns

– rather than how much– reflecting habitual strategies used during cognitive activity. They sit at the intersection of cognition and personality, and differ from learning styles, which refer to preferences within educational contexts.

Co-construction of Knowledge

A collaborative process in which students and faculties share perspectives and experiences to construct collective understanding through dialogue and interaction.

Easy-to-Read Language

A simplified linguistic variant that applies syntactic, lexical, and graphic rules to make written texts clearer and more accessible to a wide and heterogeneous audience, including individuals with cognitive or linguistic disabilities or limited language proficiency. Grounded in clarity, linearity, and reduced ambiguity, the easy-to-read approach transforms complex texts into immediate and comprehensible communication.

Entry Points / Exit Points

Differentiated methods of accessing (entry) and demonstrating (exit) learning, calibrated to individual strengths and cognitive profiles. Entry points activate prior knowledge, motivation, and interest, while exit points enable learners to consolidate, apply, or share what they have learned.

Homolesbobitransphobia

An umbrella term encompassing prejudices, discrimination, and hostile attitudes toward people with non-heteronormative sexual orientations and gender identities (homosexual, lesbian, bisexual, transgender, and polyamorous individuals). It manifests in explicit forms (insults, exclusion, violence) and implicit ones (microaggressions, stereotyping, invisibilization), all rooted in cultural and social systems that normalize heterosexuality and gender binarism as the only legitimate models.

Intersectional Approach

A perspective based on the idea that individual identities are constituted through the interconnection of multiple dimensions (e.g., gender, ethnicity, sexual orientation, socioeconomic status, disability) that do not operate in isolation but interact to generate specific experiences of opportunity or discrimination. This

approach allows for moving beyond simplified understandings of difference, avoiding the reduction of students to a single identity marker (e.g., "student with a disability," "foreign student") and acknowledging how various identity dimensions may intersect, overlap, and combine, producing distinct forms of disadvantage – or, conversely, privilege.

Italian Sign Language (LIS)

A visual-gestural language used by part of the Deaf community in Italy for communication and learning. It possesses its own grammar, syntax, and lexicon, and evolves like any other natural language.

KWL

A metacognitive learning strategy structured around a three-column chart: Know (what I know), Want to Know (what I want to know), and Learned (what I have learned). It helps students activate prior knowledge, define and orient their learning goals, and reflect on and record their learning outcomes.

Metacognition

The capacity to understand, monitor, and reflect on one's own cognitive and learning processes, in order to consciously regulate strategies and actions. In higher education, metacognition is a key competence that fosters autonomy, self-assessment, and effective problem-solving strategies, supporting a more aware, flexible, and enduring form of learning.

Mobile-Friendly

A characteristic of digital content optimized for smartphones and tablets, ensuring accessibility and ease of learning across mobile devices.

Moodle Platform

A digital learning environment (LMS) used by universities to manage courses, materials, forums, and interactive activities for e-learning.

Motivation

The set of psychological processes that initiate, direct, and sustain goal-oriented behaviour. Motivation may be intrinsic – driven by personal interest and engagement – or extrinsic –stimulated by external factors such as recognition or rewards that reinforce learning.

Multimodality

A communicative and pedagogical approach integrating multiple channels (text, image, audio, video, simulation) and expressive codes (verbal, visual, auditory, bodily, digital) to broaden access and understanding. In university teaching, multimodality promotes accessibility, engagement, and personalized learning, enhancing diverse cognitive functioning and learner preferences.

Multiple Intelligences

A theory developed by Howard Gardner, which recognizes a set of complementary formae mentis – linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, intrapersonal, interpersonal, and naturalistic intelligences. This perspective values students' diverse cognitive profiles, promoting personalized and genuinely inclusive teaching strategies.

Neurodivergence

A term describing variations in neurological functioning, such as Autism Spectrum Disorder, ADHD, or Specific Learning Disorders, understood as natural forms of human diversity comparable to physical, cultural, or linguistic differences. This perspective moves beyond clinical or pathologizing narratives, recognizing the value of diverse ways of thinking, learning, and experiencing the world. In higher education, the concept of neurodivergence calls for inclusive pedagogical practices and learning environments responsive to different cognitive profiles without reducing them to deficits.

Peer Review

A collaborative evaluative practice in which individuals provide constructive feedback and critical assessment on each other's work. In academic contexts, peer review develops critical awareness, shared responsibility, and self-evaluation, while fostering transversal skills such as argumentation, effective communication, and metacognitive reflection.

Responsive Layouts

Website or application designs that adapt automatically to different devices (desktop, tablet, smartphone), ensuring accessibility, readability, and usability in all learning contexts.

Role Playing

An experiential learning methodology that involves students assuming different roles and perspectives to simulate real or hypothetical situations, thereby fostering empathy, perspective-taking, and reflective understanding.

Rubrics

Assessment tools that specify criteria, indicators, and performance levels, enabling transparent and shared evaluation of tasks, projects, or activities. In university settings, rubrics not only support formative assessment and progress monitoring but also enhance student awareness of learning objectives and self-assessment capacity.

Schwa ( )

The schwa (symbol) is a neutral central vowel used in the International Phonetic Alphabet (IPA) to represent particular sounds in many languages. In Italian, its use has been proposed to replace gendered endings (-o/-a) in order to include non-binary identities and gender plurality. In academic and educational contexts, the schwa carries symbolic and political value, reflecting a commitment to inclusive and gender-sensitive language.

Screen Reader

An assistive technology that interprets the visual content of a computer or mobile device screen and converts it into audio output via speech synthesis, making information accessible to blind or visually impaired users. Interaction occurs mainly through keyboard shortcuts and voice commands, overcoming barriers inherent in interfaces designed for sighted users. Common examples include VoiceOver (Apple), TalkBack (Android), NVDA, and JAWS (Windows).

Situated Knowledge

An epistemological perspective asserting that knowledge is not neutral or universal but is produced within specific social, cultural, and historical contexts, shaped by the experiences and perspectives of those who generate it. In academia, situated knowledge encourages recognition of multiple viewpoints, valorization of students' backgrounds, and the design of teaching practices that reveal the interrelation between knowledge, experience, and identity.

Touch-Friendly Interfaces

Interfaces designed for intuitive use on touchscreens, featuring well-sized icons, buttons, and spaces that are easy to select with fingers, thus enhancing usability and immediate interaction.

Transfer / Generalization

The ability to apply knowledge, skills, and competences acquired in one context to new and different situations. In academic and training settings, transfer represents a central objective of teaching and learning processes, as it reflects not only content mastery but also critical and flexible re-elaboration of knowledge.

Translanguaging

An educational practice – also relevant in higher education– that promotes the integrated and flexible use of multiple languages, enabling students to draw on their full linguistic repertoire to learn, discuss, and construct knowledge collaboratively.

Design Multiple Means of Action & Expression

Artificial Intelligence (AI)
A collection of technological systems and computational techniques designed to simulate human cognitive processes such as learning, reasoning, pattern recognition, and the generation of knowledge and solutions.

Augmented Reality (AR)
A technology that overlays interactive digital elements (e.g., images, text, sound) onto the real world through devices such as smartphones, tablets, or headsets, thereby enriching perception. For example, by scanning an image of the solar system, students can visualize planets in 3D and hear related explanations.

Brainstorming
A collaborative technique that stimulates the free and creative generation of ideas on a given topic, encouraging the participation of all group members. In educational and university contexts, it is used to foster divergent thinking, co-creation of knowledge, and innovative problem-solving.

Concept Maps
Graphical tools that organize and represent concepts and their relationships through nodes and connecting lines, facilitating understanding, elaboration, and retention of information.

Digital Portfolio (E-Portfolio)
An online tool that collects and organizes a student's work, experiences, reflections, and progress, serving to document and showcase learning pathways and to highlight individual strengths and achievements.

E-Learning Platforms
Virtual learning environments (e.g., Moodle) that enable the delivery, management, and monitoring of online courses. They provide access to learning ma-

terials, exercises, assessments, and interactive communication between students and faculties.

Enhancement Technology
Digital tools designed not merely to compensate for difficulties but to amplify existing abilities, expanding opportunities for autonomy and participation (e.g., predictive text software).

Executive Functions
A set of cognitive processes that enable the planning, control, and regulation of goal-directed behaviour. These include working memory, selective attention, cognitive flexibility, planning, and inhibition, all fundamental for learning, autonomy, and the management of complex tasks.

Feedback
A formative and constructive response to an action, performance, or behaviour, aimed at guiding improvement and progress.

Formative Assessment
A continuous process of collecting and analyzing information about students' learning progress, which goes beyond measuring performance to provide timely and targeted feedback aimed at monitoring and guiding improvement.

High Readability
A set of typographical and editorial adjustments that make texts clearer and more accessible, for example through specific fonts, wide spacing, and simplified layouts. In educational and university contexts, high readability enhances comprehension and inclusion for a diverse audience, including individuals with visual impairments, reading difficulties, or specific learning disorders.

Inclusivity
A pedagogical approach that promotes the full participation of all individuals, recognizing and valuing uniqueness, fostering personal potential, and creating equitable and respectful environments for human diversity.

Information and Communication Technologies (ICT)

A broad set of digital and multimedia tools (software, devices, applications) that enable the processing, management, and sharing of information, thereby expanding opportunities for learning and interaction.

Intercultural Communication

An interactive process between individuals from different cultural backgrounds that recognizes and values linguistic, social, and ethical differences, fostering positive and enriching exchanges.

Lateral Thinking

An expression coined by psychologist Edward de Bono to describe a form of creative, non-linear problem solving. It contrasts with logical and sequential thinking, promoting the ability to generate new perspectives, unconventional connections, and original solutions. It stimulates cognitive flexibility, imagination, and creativity.

Mentoring

A formative relationship in which an experienced person (mentor) guides and supports another (mentee) in developing competences, personal and academic growth, and decision-making skills.

Multimodal Alert Systems

Devices or platforms that deliver alerts and emergency information through various channels and communication modes (audio, text, images, vibration), ensuring redundancy and accessibility so that people with different needs can receive timely and understandable messages in critical situations.

Scaffolding

An intentional support strategy provided by the teacher (or by digital tools) to help students tackle tasks that are initially too complex. Drawing on the metaphor of "scaffolding," this support is temporary and gradually removed as the learner gains autonomy and mastery.

D.A.N.T.E.-U: A Web-Based Platform for University Faculty Training on UDL

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1. The Formative and Generative Function of the Platform

The DANTE-U project has a dual objective: on one hand, to support university faculty in designing teaching experiences that align with the diversity of students' profiles and learning needs; on the other, to contribute to the development of an academic culture of inclusion, capable of translating into sustainable and shared practices. From this perspective, the D.A.N.T.E.-U platform, the project's main output (https://dante-u.it/), serves as both a pedagogical mediation tool and a transformative device, conceived not merely as a digital learning environment but as a cultural infrastructure supporting teaching professionalism.

The platform is based on a core principle: continuous, participatory, and reflective professional development, which values self-assessment and progressive improvement. It does not merely provide content or training modules, but aims to promote a professional learning practice grounded in critical reflection, peer comparison, and the experimentation of innovative teaching solutions. In this sense, D.A.N.T.E.-U serves a dual function: formative and generative. Formative, because it guides faculty in discovering and applying UDL principles (multiple means of representation, action and expression, and engagement), offering pathways for professional updating, self-training, and personalized progress monitoring; generative, because it fosters the production and sharing of resources, models, and good practices that enrich the collective teaching knowledge of participating universities and, in the long term, the national academic system as a whole.

Designed as a web-based e-learning environment, the platform features an ac-

cessible and responsive architecture, enabling smooth and immediate interaction without the need for additional software. This design reflects a deliberate pedagogical and political choice: to ensure universal accessibility and usability, so that every faculty member, regardless of digital skill level or access conditions, can benefit from the training tools. Following this inclusive logic, D.A.N.T.E.-U integrates self-assessment and progress-tracking functions, allowing users to monitor their learning journey and reflect on strategies applied in instructional design, using the tools included in this volume.

Simultaneously, the platform hosts a dynamic digital repository that collects teaching materials, tools, and practices organized according to UDL principles. This archive is not merely documentary; it functions as a living space for co-creation and dissemination of pedagogical knowledge. Faculty members can not only access selected and validated resources but also actively contribute, enriching the collective knowledge base with their own experiences, reflections, and tools. In this way, the platform becomes an open, cumulative ecosystem, continuously evolving through the contributions of the academic community, united in a shared commitment to building an inclusive and democratic university.

2. The Faculty Development Perspective

One of the distinctive features of D.A.N.T.E.-U lies in its role in supporting newly appointed faculty, who represent a crucial segment for transforming university teaching practices. The platform offers methodological support pathways that allow the translation of pedagogical research findings into effective operational strategies, facilitating the shift from theory to classroom action. This fosters the emergence of a new generation of faculty who are aware and capable of integrating universal design principles into the construction of learning experiences that embrace student diversity as a resource rather than a constraint.

The theoretical and operational structure of the platform revolves around a series of strategic objectives reflecting a progressive action-research logic. A particularly relevant aspect concerns its connection with Teaching and Learning Centers (TLCs), which are already well-established in numerous European and international universities. D.A.N.T.E.-U aims to engage in dialogue with these structures while guiding the creation of cross-university models for centers of teaching innovation, capable of fostering inter-institutional collaboration and the dissemination of evidence-based good practices. The ultimate goal is to build a

shared and scalable framework for university faculty development, serving as a lever for the continuous improvement of teaching and learning quality.

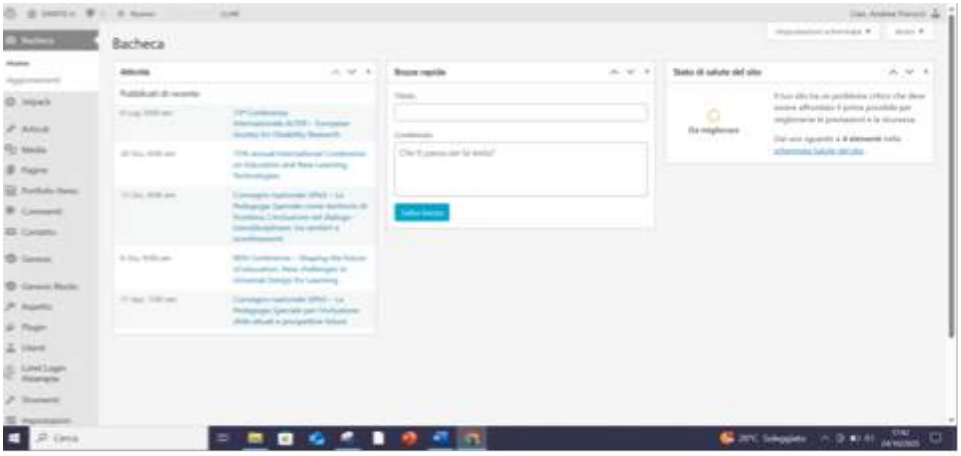
From a broader perspective, the platform is not limited to providing technical or methodological training; it seeks to generate cultural change within the academic community. In line with the epistemological framework of UDL, the platform intends to promote the creation of a reflective and competent university community, populated by students and faculty capable of self-regulation, collaboration, and awareness of teaching-learning processes.

For students, this could translate into expanded learning opportunities for non-traditional populations, reduced inequalities in access and participation, increased satisfaction, and improved learning outcomes. For faculty, the platform offers the opportunity to develop a critical awareness of their teaching practices, acquire advanced skills in the inclusive use of digital technologies, and enhance their ability to guide students through personalized learning pathways, in accordance with universal design principles.

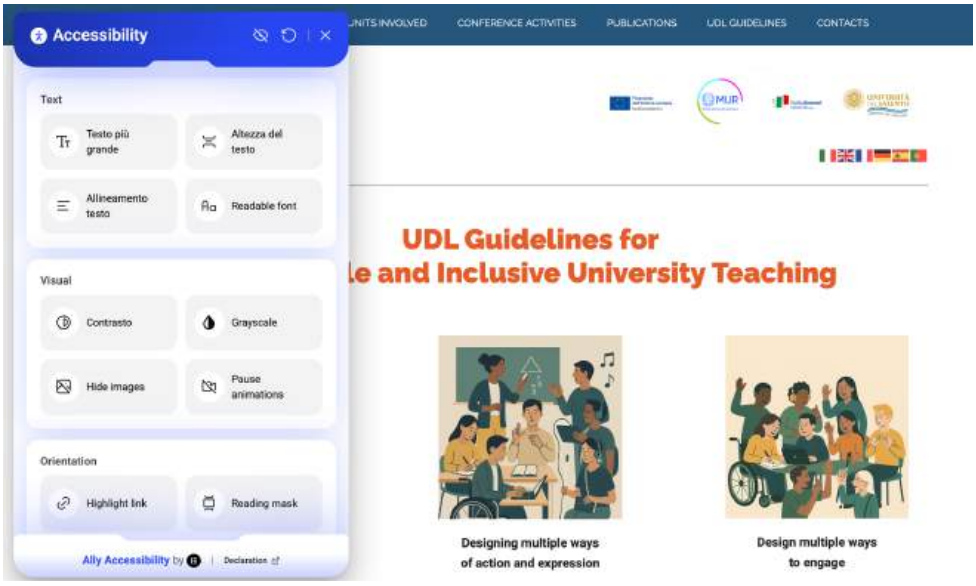
In conclusion, D.A.N.T.E.-U is configured as a pedagogical innovation laboratory that combines research, training and technology in a transformative perspective. It is not merely a technological product but a process of collective cultural construction.

3. Platform Architecture and Content

The platform was conceived as a digital environment built on a WordPress LMS, designed to embrace and enhance the principle of accessibility in all its forms. From its very foundation, it has been developed to ensure a truly inclusive experience, capable of adapting to the diverse needs of its users.



Every aspect, from layout to navigation, has been carefully designed to ensure high readability, compatibility with screen readers, and particular attention to different modes of visual perception. The platform also includes the possibility of simultaneous translation of content into multiple languages, thereby enabling broad and intercultural accessibility.



The platform is not merely a space that gathers information about the project—its objectives, purposes, and development phases—but also a place that narrates the collective work of the research group, fostering dialogue among the five participating universities and showcasing the richness of the research and dissemination activities carried out throughout the project. Each section is designed not only to highlight the results but also to convey the sense of an academic community that shares practices, tools, and reflections on inclusion.

At the core of the platform lie the UDL (Universal Design for Learning) Guidelines, in the updated 2024 version developed by CAST. Here, a tripartite structure takes shape, reflecting the three foundational principles of UDL. For each principle, the corresponding guidelines are presented alongside interpretative reflections that highlight their significance and potential application within the university context. Each guideline is accompanied by practical suggestions for faculty members—serving as prompts and sources of inspiration for designing courses, communicating content, assessing learning, and interacting with students in more equitable and accessible ways.

The platform's purpose is not to impose a single or prescriptive model, but rather to propose an open and flexible framework—one that can be adapted to different disciplinary fields and institutional contexts. Each faculty member and academic environment can find in this space a pathway to follow or reinterpret according to their own needs, within a perspective of ongoing evolution and experimentation.

What brings the platform to life are also its in-depth materials: textual and multimedia resources, scholarly articles, examples of teaching practices, questionnaires, digital tools, and software for inclusive design. This is a dynamic and evolving repository, conceived to offer both faculty and students not only information, but also opportunities for reflection, dialogue, and research.

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Designing Multiple Means of Action and Expression

The principle of action and expression emphasizes the importance of **recognizing each student's different learning styles** , allowing them to freely choose the means of expression that best suits their preferences and cognitive and learning styles. In the university setting, this involves **co-constructing accessible and inclusive environments** , supported by universal technologies and tools that help students express what they know. **Information and communication technologies (ICT)** are today essential not only for promoting access to learning, but also and above all for increasing student inclusion, participation, and motivation. By considering student diversity in terms of cognitive styles, interests, and modes of expression, ICT can facilitate **equitable teaching** , enhancing the individual skills already possessed by students.

Design Options for Interaction

This sub-principle focuses on designing flexible modes of interaction that foster personal expression and accessibility to content. Learning spaces, whether physical or digital, must be designed to accommodate diverse forms of interaction and foster inclusive community relationships. Offering choices within learning experiences fosters student motivation and autonomy, valuing their individual resources.

CONSIDERATIONS

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DANTE Design Accessibility Network to Enjoy University
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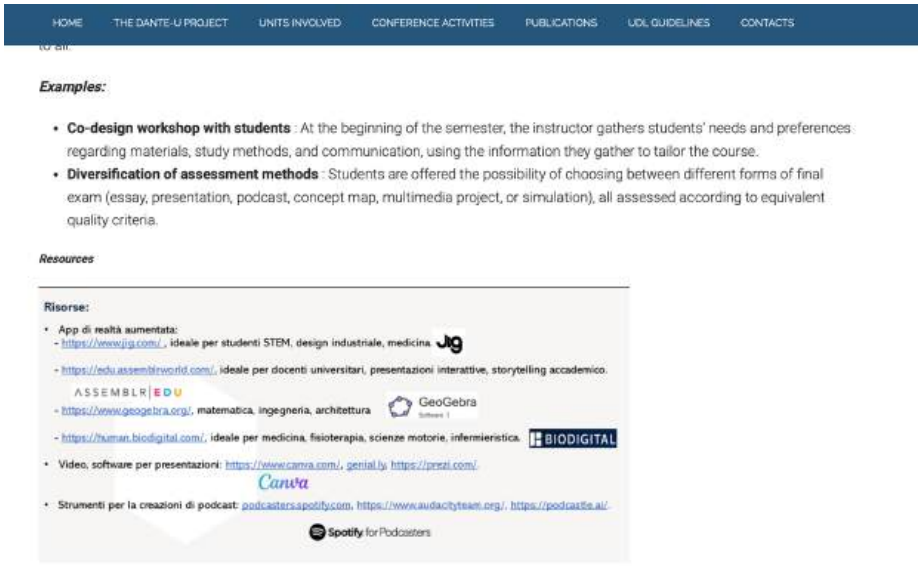
Interaction options

Student interaction methods vary based on context and teacher requests; therefore, teaching methods must be flexible, open to peer and teacher interaction, encouraging personal expression and accessible content. Learning spaces, whether physical or digital, must be designed to accommodate different forms of interaction and foster inclusive community relationships. Offering choices within learning experiences fosters student motivation and autonomy, valuing their individual resources.

4.1 Vary and respect response, navigation and movement methods

4.2 Optimize access to accessible materials and universal and accessible technologies and tools



In this way, the platform takes shape as a true ecosystem of inclusion, where technology meets pedagogy and research engages in dialogue with practice. It is not merely a repository, but an open, interactive, and shared space that evolves alongside the community that inhabits it.

Part III.
Exploring the University Context: Tools to Assess Educational Needs and Teaching Innovation

Addressing Student Needs through UDL in University Teaching: Integrated Tools for Assessment and Self-Assessment

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Alessia Bevilacqua
(University of Macerata)

1. Purpose of the Tools

Within the D.A.N.T.E.-U. research project, two parallel survey tools were developed in a nearly specular form—one designed for students and the other for university members. Both instruments are organized into two main sections, each serving complementary purposes.

The first section, addressed to students, aims to map the educational and personal needs that influence their university experience, with particular attention to aspects defining the status of non-traditional students. In this case, a self-assessment approach is adopted, allowing each student to describe their condition directly and consciously, thus providing valuable insights into the biographical, socio-cultural, and organizational variables that shape the academic experience.

The second section, common to both tools, seeks to investigate—through the self-perceptions of both students and faculties—the extent to which the teaching provided and experienced aligns with the principles of Universal Design for Learning (UDL). In this perspective, the focus extends beyond the organizational and content-related dimensions of university teaching to include issues of access, participation, and engagement, aiming to understand how closely current practices approach a genuinely inclusive vision.

The underlying rationale is that the joint assessment of student and faculties perceptions, analyzed in a comparative manner, can provide a solid basis for identifying potential discrepancies between what is offered and what is perceived, as well as for detecting areas of improvement toward the progressive implementation of UDL principles.

2. Structure of the Questionnaires

Specifically, the first section of the questionnaire consists of 50 closed-ended questions in the student version and 32 closed-ended questions in the teacher version, consistent with all the personal and social variables involved in the complex definition of the construct of the non-traditional student as it emerges from the literature and described in the following table. The variables investigated include demographic aspects, employment conditions, previous experiences within the university system, and factors that may influence the study path, contributing to a detailed characterization of this category of students.

Age
The literature defines a student as *non-traditional* if, at the time of enrollment in a university program, they are over 25 years of age. Accordingly, this dimension was investigated in the questionnaire by asking respondents to indicate their chronological age.
Parenthood
The dimension of parenthood and its impact on the study path was explored by identifying the presence of pregnancy or motherhood among female students and, for all other respondents, by asking for the number of children and the age of the youngest.
Employment
The condition of being a working student was analyzed on multiple levels: the presence of employment concurrent with studies, the type of employment regulation (with or without a contract), the kind of work (continuous, stable, or temporary), and the working hours (morning or afternoon).
Socio-linguistic-cultural disadvantage
Two criteria were used in the questionnaire to assess the economic and cultural background of the student's family of origin: (1) the parents' level of education, considering the highest attained; and (2) the economic support provided by the family for the continuation of studies. These dimensions were further explored by collecting information on nationality (Italian, EU, or non-EU) and asking respondents to specify their country of origin. In addition, the presence and impact of a linguistic gap were explored through the question "Is Italian your first or native language?", with a negative answer requiring respondents to specify the areas in which they experience the greatest difficulties: in classroom learning, independent study, and/or participation.
Special educational and training needs
The questionnaire included four items aimed at detecting: (1) the presence and type of one or more disabilities (sensory, motor, cognitive, mental, or psychiatric); (2) the presence and type of one or more disorders (emotional-relational, language, mood, specific learning disorders, etc.); (3) the use of specific assistive technologies such as devices, equipment, and/or software for mobility, communication, and autonomy; and (4) the presence of an assessment of giftedness.
Dual enrollment
In this case, the dimension was investigated by asking respondents whether they were also enrolled in another academic program, specifying their precise situation: (1) University course and another university course; (2) University course and postgraduate university course (advanced, specialization, qualification, higher education, or professional training programs); (3) University course and PhD, research grant, or research fellowship; (4) University course and Conservatory.

Athletic career
This dimension was explored by asking students whether the Dual Career is formally recognized at their university, and then by linking their responses to the difficulties encountered during their studies, such as balancing athletic/competitive commitments with academic ones, attending classes, dedicating time to study, registering for exams, maintaining peer relationships, and participating in university life.
Caregiving
Involvement in caregiving and assistance for family members was assessed using specific indicators such as the type of assistance provided (household management, personal care, emotional support, financial assistance) and the frequency of caregiving (daily, weekly, or monthly). In this case as well, the questions were contextualized by identifying the areas in which these caregiving responsibilities expose the student to greater vulnerability (attendance at classes/laboratories, individual study, opportunities for international mobility, or participation in extracurricular activities).
Off-campus status/commuting
This dimension was investigated by asking respondents whether their situation involved commuting or living away from home, and how this condition affected their academic life, specifically in terms of finding suitable and affordable housing, managing daily routines (cleaning, meal preparation, etc.), financial coverage, and sharing accommodation with non-family members.

Section 1. Framework of the Variables Defining the Construct of the Non-Traditional Student

The second section, consisting of 31 closed-ended items in the student version and 30 closed-ended items in the teacher version, is designed to highlight university teaching practices aligned with UDL-based instructional design that students enrolled in the LM-85bis program have experienced during their studies. Specifically, it investigates the frequency with which certain instructional situations, described in the questionnaire statements, actually occurred during the courses attended. To describe their experience, respondents evaluated each proposed item using a five-point frequency scale with the following response options: Never – Sometimes – Fairly often – Almost always – Always. The proposed items were developed in accordance with the objectives and UDL Guidelines 3.0 (CAST, 2024), with the aim of detecting the application of principles of instructional flexibility, content accessibility, and variety in teaching methods adopted within university courses.

Resourceful and well-informed student
The UDL principle supporting this objective is *representation*, referring to the various ways in which the faculty can present course content while considering the flexibility with which students can access information (digital, print, audio, images, text, etc.).
Within this dimension, some aspects of universal design for learning are explored through specific items such as:
Faculties vary sources of information so that they can be personalized according to students' specific characteristics (cultural, ethnic, and gender differences);
Faculties deliver course content through multiple modes (visual, auditory, written, etc.) to make it accessible to all students;
Faculties, for the delivery of their lectures or parts of them, prefer teaching methods that incorporate technological innovations.

Strategic and goal-oriented student
The UDL principle supporting this objective is *action and expression*, which refers to the different ways in which students can demonstrate their knowledge and/or skills.
Essentially, when applied to university teaching, this principle particularly concerns the assessment methods designed by faculties.
Within this dimension, some aspects of universal design for learning are explored through specific items such as:
Faculties provide students with multiple ways to demonstrate their understanding of the topics covered (e.g., group discussions, focus groups, guided reflections, etc.);
Faculties provide various practical and relevant opportunities to apply the skills acquired (e.g., interviews, authentic tasks, case studies, role-playing);
Faculties provide strategies and tools to help students manage their time (e.g., developing a weekly activity plan).

Determined and motivated student
The UDL principle supporting this objective is *engagement*. A key factor for meaningful learning is motivation, which not only enhances academic performance and personal development but also requires a growth-oriented mindset and the ability to persevere in effort.
Within this dimension, specific items investigate the tools or strategies implemented by faculties to keep students motivated and focused, such as:
Faculties provide students with guiding questions to foster self-regulation and reflection on their learning process (e.g., metacognitive questionnaire);
Faculties use self-assessment and reflection tools to monitor the learning process;
Faculties use tools that allow students to track their progress throughout the course (e.g., rubrics, checklists, self-assessment forms, metacognitive questionnaires, etc.).

Section 2. UDL Objectives and Description of Items

To ensure a matching of responses and provide a comprehensive view of the specific needs of university students present in academic classrooms, as well as the aspects of teaching (either responsive or not) to the needs of the student body, the research team has developed two questionnaires. These questionnaires share the same structure but are directed respectively to students and university professors.

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Appendix 1.
University Students' Needs & UDL Approach Questionnaire – Faculty Version

Sociodemographic Data

1. Institution (University of …)
   - ❑ University of Salento
   - ❑ Roma Tre University
   - ❑ University of Padua
   - ❑ Free University of Bozen-Bolzano
   - ❑ University of Perugia

2. Age:
   - ❑ *Editable field*

3. Gender:
   - ❑ Male
   - ❑ Female
   - ❑ Prefer not to answer

4. Number of years of university teaching experience
   - ❑ 0–5 years
   - ❑ 6–10 years
   - ❑ 11–15 years
   - ❑ 16–20 years
   - ❑ More than 20 years

5. Professional category
   - ❑ Full Professor
   - ❑ Associate Professor
   - ❑ Permanent Researcher (RUTI)
   - ❑ Fixed-term Researcher (Type A and B)
   - ❑ Adjunct Professor / Contract Lecturer

6. Please indicate the Scientific-Disciplinary Sector (SDS) of the disciplinary area in which your teaching is situated
   - ❑ *Editable field*

7. Please indicate which subject(s) you teach in the Degree Programme in Primary Teacher Education (if you teach more than one, we kindly ask you to indicate at least two)
   - ❑ *Editable field*

8. During your university experience, how often have you encountered *working students (either part-time or full-time)*?
   - ❑ Never
   - ❑ Sometimes
   - ❑ Quite often
   - ❑ Almost always
   - ❑ Always

9. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
   - ❑ Never
   - ❑ Sometimes
   - ❑ Quite often
   - ❑ Almost always
   - ❑ Always

10. During your university experience, how often have you encountered *student parents*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

11. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

12. During your university experience, how often have you encountered *female students on maternity leave*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

13. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

14. During your university experience, how often have you encountered *students from other ethnic backgrounds*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

15. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

16. During your university experience, how often have you encountered *students with specific language needs because they come from foreign countries*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

17. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

18. During your university experience, how often have you encountered *students with disabilities (e.g., motor, visual, hearing, intellectual disabilities, etc.)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

19. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

20. During your university experience, how often have you encountered *students with disorders (e.g., anxiety disorders, emotional-relational disorders, speech fluency disorders, mood disorders, etc.)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

21. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

22. During your university experience, how often have you encountered *students with Specific Learning Disorders (SLD) (dyslexia, dysorthography, dyscalculia, dysgraphia)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

23. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

24. During your university experience, how often have you encountered *students who need assistive technologies (e.g., screen magnifiers, Braille tablets, AAC devices, communicators, etc.)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

25. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

26. During your university experience, how often have you encountered *students assessed as gifted (or with high cognitive potential)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

27. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

28. During your university experience, how often have you encountered *student caregivers*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

29. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

30. During your university experience, how often have you encountered *student athletes*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

31. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

32. During your university experience, how often have you encountered *non-resident students (living away from their hometown)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

33. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

34. During your university experience, how often have you encountered *incoming Erasmus students (from foreign universities)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

35. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

36. During your university experience, how often have you encountered *students enrolled simultaneously in two degree programs (double enrollment)*?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

37. With regard to this specific student characteristic and your teaching, have you ever adapted the content, delivery methods, or assessment methods?
    - ❑ Never
    - ❑ Sometimes
    - ❑ Quite often
    - ❑ Almost always
    - ❑ Always

38. During your university experience, have you encountered students with characteristics other than those mentioned in the previous questions?
    - ❑ Yes
    - ❑ No

39. If you answered yes to the previous question, could you indicate which characteristics they were?
    - ❑ *Open field*

University Teaching Questionnaire – UDL-based

With reference to your overall university teaching experience, please indicate the frequency with which the situations described in the following statements occur.

Items	Never	Sometimes	Quite often	Almost always	Always
During lectures, do you provide options and tools to better clarify disciplinary terminology (e.g., glossaries, subject-specific dictionaries, etc.)?					
Before introducing a new topic, do you provide a summary outline of the contents to be addressed?					
Do you deliver course content in multiple modalities (visual, auditory, written, etc.) in order to make it accessible to all students?					
Do you teach in such a way that all students can develop multiple connections across different disciplines and contents of the Master's Degree in Primary Education programme?					
Do you encourage students to organise the subject content using diverse learning methods and tools (e.g., concept maps, peer instruction, etc.)?					
Do you employ alternative approaches that allow access to and acquisition of content in different ways (e.g., group work, practical tasks, case studies, role-playing, etc.)?					
Do you explain to students the importance of the study materials you provide?					
For the delivery of your lectures, or part of them, do you prefer a traditional lecture format?					
For the delivery of your lectures, or part of them, do you prefer teaching supported by technological innovations?					

Before starting the course, do you spend time discussing with students the essential prerequisites for learning your subject (e.g., key terminology, authors, schools of thought, formulas, periods, etc.)?					
Do you provide representations (graphic, verbal, etc.) that highlight students' improvements, in order to increase their motivation for learning?					
Do you offer students multiple practical and relevant opportunities to apply the skills acquired (e.g., interviews, real-world assignments, case studies, role-playing)?					
Do you offer students multiple ways of demonstrating their understanding of the topics addressed (e.g., group discussions, focus groups, guided reflections, etc.)?					
Do you employ tools that allow students to monitor their progress throughout the course (e.g., rubrics, checklists, self-assessment, metacognitive questionnaires, etc.)?					
Do you optimize access to tools, products, and assistive technologies?					
Do you support students in planning and choosing study strategies (e.g., mediators, tutors, mentors, aids, checklists, targeted support, etc.)?					
Do you provide students with guiding questions to foster self-monitoring and reflection on their learning processes (e.g., metacognitive questionnaire)?					
Do you diversify activities and information sources so that they can be personalized according to students' specificities (e.g., cultural, ethnic, or gender differences)?					
Do you provide students with strategies and tools to help them manage time (e.g., developing a weekly schedule of activities)?					
Do you seek students' feedback on course organization (e.g., student involvement in course design)?					
At the end of the lecture, do you spend time on clarifications, questions, and doubts?					

Do you provide students with timely feedback (through various channels: e-mail, tutorials, meetings, etc.) and support to improve their study strategies?					
Do you offer students opportunities to engage in learning activities aligned with their personal interests?					
Do you use different teaching strategies to help students develop decision-making skills and increase their autonomy (e.g., by providing support, checklists, graduated aids to promote independence, etc.)?					
Do you encourage students to communicate difficulties related to time management (e.g., questionnaires, schedules and timelines for task completion, etc.)?					
Do you integrate self-assessment and reflection activities to monitor the learning process?					
Do you promote collaboration and mutual support among students during activities (e.g., peer tutoring, cooperative learning with clear goals, roles, and responsibilities, creating expectations for group work)?					
Do you encourage students' active participation in class by proposing alternative teaching methods (e.g., station-based learning, team teaching, parallel teaching, flipped classroom, cooperative learning, etc.) to traditional lectures?					
Do you provide students with models of support to manage frustration and develop self-control and coping strategies (e.g., feedback, focus on "natural" aptitudes, rubrics centred on self-regulated objectives such as reducing the frequency of aggressive reactions in response to frustration)?					
In your course, do you diversify questions and resources to optimize the sense of challenge (e.g., differentiating levels of difficulty or complexity, diversifying the degree of autonomy in task execution, etc.)?					

Appendix 2.
University Students' Needs & UDL Approach Questionnaire – Student Version

Questionnaire for the assessment of the needs of students enrolled in the 4th and 5th year of the Degree Program in Primary Education Sciences

With reference to your overall university experience, please answer the following questions.

1. University of reference:
   - ❑ University of RomaTre
   - ❑ University of Padova
   - ❑ University of Salento
   - ❑ University of Perugia
   - ❑ University of Bolzano

2. Age:
   - ❑ up to 21 years
   - ❑ 22–24 years
   - ❑ 25–29 years
   - ❑ 30–39 years
   - ❑ 40–49 years
   - ❑ 50 years and over

3. Do you already have a university degree?
   - ❑ No
   - ❑ Yes

4. Gender:
   - ❑ Male
   - ❑ Female
   - ❑ Alias Career
   - ❑ I prefer not to answer

5. Are you currently pregnant or on maternity leave?
   - ❑ Yes
   - ❑ No

6. Nationality
   - ❑ Italian
   - ❑ Other EU country
     - ❑ Specify among:
       - ❑ Austria
       - ❑ Belgium

- ❑ Bulgaria
- ❑ Croatia
- ❑ Cyprus
- ❑ Denmark
- ❑ Estonia
- ❑ Finland
- ❑ France
- ❑ Germany
- ❑ Great Britain
- ❑ Greece
- ❑ Ireland
- ❑ Italy
- ❑ Latvia
- ❑ Lithuania
- ❑ Luxembourg
- ❑ Malta
- ❑ Netherlands
- ❑ Poland
- ❑ Portugal
- ❑ Czech Republic
- ❑ Romania
- ❑ Slovakia
- ❑ Slovenia
- ❑ Spain
- ❑ Sweden
- ❑ Hungary

❑ Non-EU country

❑ Specify among:

- ❑ Morocco
- ❑ Egypt
- ❑ Tunisia
- ❑ Albania
- ❑ Other: open field

7. If you live permanently in Italy, indicate your region of origin:

❑ I do not live permanently in Italy
❑ Abruzzo
❑ Basilicata
❑ Calabria
❑ Campania
❑ Emilia-Romagna
❑ Friuli Venezia Giulia
❑ Lazio
❑ Liguria
❑ Lombardy
❑ Piedmont
❑ Apulia
❑ Sardinia

- ❑ Sicily
- ❑ Tuscany
- ❑ Trentino-Alto Adige
- ❑ Umbria
- ❑ Valle d'Aosta
- ❑ Veneto

8. Type of secondary school attended:
   - ❑ High School
     - ❑ Specify among:
       - ❑ Classical Studies
       - ❑ Scientific Studies
       - ❑ Sports Science
       - ❑ Linguistics
       - ❑ Choreutic (Dance)
       - ❑ Arts
       - ❑ Music
       - ❑ Human Sciences
   - ❑ Technical Institute
     - ❑ Specify among:
       - ❑ Administration, Finance and Marketing
       - ❑ Tourism
       - ❑ Mechanics, Mechatronics and Energy
       - ❑ Transport and Logistics
       - ❑ Electronics and Electrical Engineering
       - ❑ Computer Science and Telecommunications
       - ❑ Graphics and Communication
       - ❑ Chemistry, Materials and Biotechnology
       - ❑ Fashion System
       - ❑ Agriculture, Agri-food and Agro-industry
       - ❑ Construction, Environment and Territory
   - ❑ Professional Institute
     - ❑ Specify among:
       - ❑ Agriculture
       - ❑ Industry and Handicrafts
       - ❑ Maintenance and Technical Assistance
       - ❑ Hospitality and Catering
       - ❑ Health Professions
       - ❑ Cultural Services and Performing Arts
       - ❑ Fishing and Fish Production
       - ❑ Water Management

9. Year of secondary school graduation:
   - ❑ 2023
   - ❑ 2018-2022
   - ❑ 2013-2017
   - ❑ 2008-2012
   - ❑ 2003-2007

- ❑ 1998-2002
- ❑ 1993-1997
- ❑ 1988-1992
- ❑ Before 1988

10. During your school career, were you ever held back a year?
    - ❑ Yes, in lower secondary school
    - ❑ Yes, in upper secondary school
    - ❑ Yes, in both
    - ❑ No

11. How many times?
    - ❑ 1
    - ❑ 2
    - ❑ 3 or more

12. During your school career, did you have remedial courses?
    - ❑ Yes, suspension of judgment in lower secondary school
    - ❑ Yes, remedial course in upper secondary school
    - ❑ Yes, in both
    - ❑ No

13. In how many school years?
    - ❑ 1
    - ❑ 2
    - ❑ 3 or more

14. Education level of parent 1 (regardless of gender):
    - ❑ No qualification
    - ❑ Primary school certificate
    - ❑ Lower secondary school certificate (middle school)
    - ❑ Upper secondary school diploma (high school)
    - ❑ University degree or postgraduate degree
    - ❑ I do not have this information

15. Education level of parent 2 (regardless of gender):
    - ❑ No qualification
    - ❑ Primary school certificate
    - ❑ Lower secondary school certificate (middle school)
    - ❑ Upper secondary school diploma (high school)
    - ❑ University degree or postgraduate degree
    - ❑ I do not have this information

16. Who or what do you rely on to pay for your studies? (multiple answers possible)
    - ❑ Family
    - ❑ Own work/income
    - ❑ Scholarship

17. Is Italian your first language (mother tongue)?
    - ❑ Yes
    - ❑ No

18. Does this represent an obstacle in your studies?
    - ❑ Yes
    - ❑ No

19. In which area do you encounter the greatest difficulties? (multiple answers possible)
    - ❑ In teaching/learning activities (understanding, presenting, interacting during lectures, seminars, labs, exams, etc.)
    - ❑ In study programs (finding and understanding study materials, exam texts, etc.)
    - ❑ In participation (interacting, socializing, building relationships with classmates, joining associations/committees/student representations, etc.)

20. Do you currently have a job?
    - ❑ Yes, with a contract
    - ❑ Yes, without a contract
    - ❑ No

21. Did you declare yourself as a working student at the time of enrollment?
    - ❑ Yes, in order to benefit from the advantages granted by the Degree Program
    - ❑ No, because the advantages granted by the Degree Program are not actually helpful in managing my university career
    - ❑ No, because even though I work, it is not possible to provide proof of my employment

22. What type of work do you do?
    - ❑ Temporary (occasional and/or short-term)
    - ❑ Continuous (fixed-term)
    - ❑ Permanent (open-ended)

23. At what time of day?
    - ❑ Morning
    - ❑ Afternoon
    - ❑ Both

24. Does your job guarantee you financial independence?
    - ❑ Yes
    - ❑ No

25. Do you have children? If yes, how many?
    - ❑ Yes, 1
    - ❑ Yes, 2
    - ❑ Yes, 3 or more
    - ❑ No

26. How old is your youngest child?
- ❑ 0-3
- ❑ 3-6
- ❑ 7-10
- ❑ 11-13
- ❑ 14-18
- ❑ 19 or more

27. Do you have a disability or disorder? (multiple answers possible)
- ❑ No
- ❑ Motor disability
- ❑ Visual disability
- ❑ Hearing disability
- ❑ Intellectual disability
- ❑ Genetic/hereditary syndromes
- ❑ ADHD
- ❑ Autism
- ❑ Speech disorder
- ❑ Speech fluency disorder (stuttering)
- ❑ Developmental coordination disorder (dyspraxia)
- ❑ Emotional-relational disorder
- ❑ Mood disorder
- ❑ Anxiety disorder

28. Are you a student with a Specific Learning Disorder (SLD)? (multiple answers possible)
- ❑ No
- ❑ Dyslexia
- ❑ Dysgraphia
- ❑ Dyscalculia
- ❑ Dysorthography

29. Do you need specific assistive technologies? (multiple answers possible)
- ❑ No
- ❑ Yes, devices, equipment and/or software for sensory impairments
- ❑ Yes, devices, equipment and/or software for mobility
- ❑ Yes, devices, equipment and/or software for communication and independence

30. Are you a student assessed as gifted (with high cognitive potential)?
- ❑ Yes
- ❑ No

31. Are you currently caring for or assisting a family member with disabilities/difficulties?
- ❑ Yes
- ❑ No

32. Relative with disabilities/difficulties (multiple answers possible):
- ❑ Son/Daughter
- ❑ Spouse

- ❑ Parent
- ❑ Brother/Sister
- ❑ Grandparent
- ❑ Other

33. How much time do you dedicate to caring for/assisting your family member with disabilities/difficulties?
    - ❑ Every day
    - ❑ Several days a week
    - ❑ Several days a month

34. What type of care/assistance do you provide? (multiple answers possible)
    - ❑ Household chores
    - ❑ House management
    - ❑ Personal care
    - ❑ Emotional support
    - ❑ Financial support

35. In which of the following areas does your caregiving activity have the greatest impact? Rank from most to least significant for you
    - ❑ Attendance at lectures/labs
    - ❑ Individual study
    - ❑ Opportunity to participate in an international mobility experience (Erasmus)
    - ❑ Participation in extracurricular activities (optional conferences/seminars, recreational or social activities, etc.)

36. Are you a Student-Athlete?
    - ❑ No
    - ❑ Yes, with recognition of Student-Athlete status by my University
    - ❑ Yes, without recognition of Student-Athlete status by my University

37. Do you find it difficult to reconcile studying with sports commitments?
    - ❑ Yes
    - ❑ Sometimes
    - ❑ No

38. What difficulties do you encounter as a Student-Athlete? Rank from most to least significant for you
    - ❑ Class attendance
    - ❑ Time for studying
    - ❑ Exam sessions
    - ❑ Relationships with classmates
    - ❑ Participation in university life

39. Are you enrolled in a double degree program?
    - ❑ No
    - ❑ University course and another university course

- ❑ University course and postgraduate course (master's, specialization or qualification courses, advanced training and professional courses)
- ❑ University course and PhD, Research Grant or Scholarship
- ❑ University course and Conservatory

40. Are you a non-resident student (living away from your hometown)?
    - ❑ Yes
    - ❑ No

41. Do you encounter difficulties as a non-resident student? (multiple answers possible)
    - ❑ Yes, with housing (availability and cost)
    - ❑ Yes, with managing daily life (cleaning/maintenance of housing, meal preparation, etc.)
    - ❑ Yes, with cohabitation and sharing accommodation with strangers
    - ❑ No, I do not encounter particular difficulties

42. Are you a commuter student?
    - ❑ Yes
    - ❑ No

43. Do you encounter difficulties as a commuter student? (multiple answers possible)
    - ❑ Yes, with transportation
    - ❑ Yes, with downtime
    - ❑ Yes, with class schedules
    - ❑ Yes, with studying outside the home (study rooms)
    - ❑ No, I do not encounter particular difficulties

44. Study abroad period, Erasmus programs?
    - ❑ I would like to have an Erasmus mobility experience
    - ❑ I would like to, but I would have difficulties managing a period abroad due to financial and/or work-related problems
    - ❑ I would like to, but I would have difficulties managing a period abroad due to language-related problems
    - ❑ I would like to, but I would have difficulties managing a period abroad due to family/relationship-related problems
    - ❑ No, I am not interested or I do not intend to
    - ❑ I have already participated in an Erasmus program

45. Considering your university experience so far, in which area have you encountered the greatest difficulties? Rank from most to least important for you
    - ❑ Administrative/bureaucratic (enrollment, credits, study plan, etc.)
    - ❑ Access to information and IT resources (availability of study materials, exam texts, websites, social media, virtual or physical noticeboards, etc.)
    - ❑ Access/availability/use of university spaces and equipment (administrative offices, classrooms, libraries, study rooms, etc.)
    - ❑ Peer relationships
    - ❑ Participation in university life
    - ❑ Relationship with professors

46. For what reason did you decide to enroll in the Degree Program in Primary Education Sciences?
    - ❑ Open field

University Teaching Questionnaire – UDL-based

With reference to your overall university teaching experience, please indicate the frequency with which the situations described in the following statements occur.

Items	Never	Sometimes	Quite often	Almost always	Always
Faculties provide options and tools to better clarify disciplinary terminology (e.g., glossaries, subject-specific dictionaries, etc.).					
Before introducing a new topic, faculties provide a summary outline of the contents to be addressed.					
Faculties deliver course content in multiple modalities (visual, auditory, written, etc.) in order to make it accessible to all students.					
Faculties teach in such a way that all students can develop multiple connections across different disciplines and contents of the Master's Degree in Primary Education programme.					
Faculties encourage students to organise the subject content using diverse learning methods and tools (e.g., concept maps, peer instruction, etc.).					
Faculties employ alternative approaches that allow access to and acquisition of content in different ways (e.g., group work, practical tasks, case studies, role-playing, etc.).					
Faculties explain to students the importance of the study materials they provide.					
For the delivery of their lectures, or part of them, faculties prefer a traditional lecture format.					
For the delivery of their lectures, or part of them, faculties prefer teaching supported by technological innovations.					
Before starting the course, the faculty member spends time discussing with students the essential prerequisites for learning the subject (e.g., key terminology, authors, schools of thought, formulas, historical periods, etc.).					

Faculties provide representations (graphic, verbal, etc.) that highlight students' improvements, in order to increase their motivation for learning.					
Faculties provide multiple practical and relevant opportunities to apply the skills acquired (e.g., interviews, real-world assignments, case studies, role-playing).					
Faculties offer students multiple ways of demonstrating their understanding of the topics addressed (e.g., group discussions, focus groups, guided reflections, etc.).					
Faculties employ tools that allow students to monitor their progress throughout the course (e.g., rubrics, checklists, self-assessment, metacognitive questionnaires, etc.).					
Faculties optimize access to tools, products, and assistive technologies.					
Faculties support students in planning and choosing study strategies (e.g., mediators, tutors, mentors, aids, checklists, targeted support, etc.).					
Faculties provide students with guiding questions to foster self-monitoring and reflection on their learning processes (e.g., metacognitive questionnaire).					
Faculties vary activities and information sources so that they can be personalised according to students' specificities (e.g., cultural, ethnic, or gender differences).					
Faculties provide students with strategies and tools to help them manage time (e.g., developing a weekly schedule of activities).					
Faculties seek students' feedback on course organisation (e.g., student involvement in course design).					
At the end of the lesson, faculties devote time to clarifications, questions, and doubts.					
Faculties provide timely feedback (through various channels: e-mail, tutorials, meetings, etc.) and support to improve students' study strategies.					
Faculties offer opportunities to engage in learning activities aligned with students' personal interests.					

Faculties use different teaching strategies to help students develop decision-making skills and increase their autonomy (e.g., by providing support, checklists, graduated aids to promote independence, etc.).					
Faculties encourage students to communicate difficulties related to time management (e.g., questionnaires, schedules and timelines for task completion, etc.).					
Faculties integrate self-assessment and reflection activities to monitor the learning process.					
Faculties promote collaboration and mutual support among students during activities (e.g., peer tutoring, cooperative learning with clear goals, roles, and responsibilities, creating expectations for group work).					
Faculties encourage students' active participation in class by proposing alternative teaching methods (e.g., station-based learning, team teaching, parallel teaching, flipped classroom, cooperative learning, etc.) to traditional lectures.					
Faculties provide students with models of support to manage frustration and develop self-control and coping strategies (e.g., feedback, focus on "natural" aptitudes, rubrics centred on self-regulated objectives such as reducing the frequency of aggressive reactions in response to frustration).					
In their courses, faculties vary questions and resources to optimise the sense of challenge (e.g., differentiating levels of difficulty or complexity, varying the degree of autonomy in task execution, etc.).					

Disciplinary Area

- ❑ The answers you have previously provided could be most closely related to which of the following disciplinary areas? Please list them in order of preference.
- ❑ Artistic-Expressive-Musical
- ❑ Mathematical-Scientific
- ❑ Technological
- ❑ Linguistic-Literary
- ❑ Historical-Anthropological-Geographical
- ❑ Psycho-Pedagogical and Social Sciences
- ❑ Physical Education / Motor Sciences
- ❑ Laboratory-Based

Fostering Reflection and Self-Assessment in University Faculty for Inclusive Teaching Innovation: The Index for Inclusion in University Teaching Questionnaire

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1. Rethinking Higher Education through the Index for Inclusion

The Index for Inclusion is one of the most internationally recognized tools for analyzing and promoting educational inclusion. Developed in the Anglo-Saxon context by Tony Booth and Mel Ainscow in 2001 within the Centre for Studies on Inclusive Education, it has progressively acquired a central role in inclusive school design. The first Italian edition was published in 2008, followed by an updated version in 2014. To date, the Index for Inclusion has been translated into more than 30 languages, establishing itself as a global reference for educational institutions committed to creating more equitable and accessible learning environments.

It represents a dynamic and participatory framework for understanding inclusion—a continuous improvement tool in which inclusion is conceived as an evolving process, constantly redefined in relation to contexts, individuals, and educational practices. Its primary goal is to support educational settings in identifying and progressively removing barriers to learning and participation, while simultaneously promoting personal growth and the active engagement of all students.

The model proposed by the Index for Inclusion can be summarized in two key elements, which also prove highly relevant for interpreting the university context:

1. an articulated definition of inclusion, inspired by the social model of disability processes and clearly influenced by Anglo-Saxon scholarship—such as the

works of Oliver (1990) and Barton (2006)—conceives inclusion not as a focus on the student and their difficulties, but rather on the context, which can either act as a barrier or facilitate participation and development. It differs markedly from the medical model, which emphasizes individual impairments and diagnoses, shifting instead the focus toward contextual dynamics that promote full participation and success for all.

2. the description of the self-assessment and self-improvement phases, which are essential to initiate development processes leading to increasingly higher levels of inclusivity within educational settings. The *Index for Inclusion* does not limit itself to an abstract definition but provides a clear framework composed of dimensions and sections that describe the areas in which inclusion can be concretely developed.

The three main dimensions of the Index, which can be related to the academic context, are analyzed below (Castillo et al., 2020):

– *Inclusive cultures:* this concerns the quality of relationships among people within and around the university (e.g., *building an academic community*) and the inclusive values promoted (e.g., *affirming and promoting inclusive values*).
– *Inclusive policies*: this focuses on accessibility, both in terms of physical barriers and access to information (e.g., *developing an accessible environment for everyone*), and on collaboration among working groups and academic bodies (e.g., *organizing appropriate support for diversity*).
– *Inclusive practices:* this relates to the management of teaching and learning processes, aiming to make them active and centered on students' characteristics and needs (e.g., *coordinating learning*), as well as the effective use of resources (e.g., *mobilizing human, financial, and material resources*).

Each dimension is accompanied by specific indicators that provide a detailed assessment of aspects related to inclusion in the academic environment. For example, the indicator on student expectations might include questions such as: *"Are all students encouraged to set high expectations for their goals?"* or *"Are students motivated to recognize and appreciate their peers' achievements?".*

The *Index for Inclusion* thus emerges as a practical tool for universities, enabling them to progressively move toward the realization of an increasingly inclusive academic environment through a participatory and democratic process of self-assessment and continuous improvement.

The Index for Inclusion is therefore also proposed as a practical tool for universities, enabling a gradual approach to the creation of a more inclusive academic environment through a process of self-assessment and continuous improvement, which must be participatory and democratic. Although originally developed for the school context, the Index now finds new opportunities for application in higher education, in response to the growing attention that universities are paying to student diversity and the specific needs of non-traditional students, who have become an increasingly important and significant component of the academic population (Mesa & García, 2015). From this perspective, university inclusion cannot be solely understood as the removal of physical or structural barriers, but must be seen as a cultural and institutional horizon that is realized through policies, practices, and organizational strategies capable of promoting equal opportunities for learning and participation, regardless of students' social, economic, cultural, or biographical conditions. An inclusive university, therefore, is an educational ecosystem that recognizes diversity as a foundational value and a lever for pedagogical and social innovation.

In international literature, few studies have adapted the domains of the Index for Inclusion for application in the context of higher education (Salceda & Ibáñez, 2015; Márquez et al., 2021; Deppeler & Harvey, 2004). Unlike the transformative action-research process promoted by the Index in the school context, research in higher education suggests the adoption of agile, valid, and reliable evaluation methodologies that can analyze inclusive academic environments and investigate to what extent inclusion is genuinely perceived and practiced by key members of the university community (administrators, technical-administrative staff, faculty, and students) (De la Herrán, Paredes & Monsalve, 2017). This approach is particularly relevant because, at this level of education, it is still necessary to consolidate institutional policies capable of promoting inclusion as a structuring principle of university organization and of valuing diversity as a strategic resource for learning and social innovation (Matus-Betancourt et al., 2018).

In this direction, an interesting study presented in 2022 by Solis-Grant and colleagues aimed at developing a new tool called the Inclusive Management in Tertiary Institutions Scale (IMTIS), designed to assess inclusive management in universities according to the structure of the six domains proposed by the Index for Inclusion. The tool was designed to be administered to students, faculty, technical-administrative staff, and management, with the aim of promoting a participatory and multi-level evaluation, engaging all members of the academic community in the process of reflection and institutional improvement.

Domain	Definition
Building a collaborative community	The frequency with which the actions of community members contribute to ensuring that everyone feels an integral part of it, recognizing it as a safe, welcoming, collaborative, and stimulating environment where diversity is valued and each person has the opportunity to achieve their highest potential.
Promoting inclusive values	The frequency with which the university implements actions aimed at conveying an inclusive philosophy to all members of the community.
Developing an educational institution for all	The frequency with which the university formally promotes, through its regulatory framework, actions that enable all members of the higher education institution, without distinction, to develop their full potential.
Organizing support for diversity	The frequency with which the university implements effective strategies, adopted at all levels of the educational system, to respond to the diverse needs of its members.
Managing the educational process	The frequency with which educational processes within the university are intentionally conducted in an inclusive manner, deliberately enabling all students to access learning opportunities and preventing the emergence of barriers or discriminatory practices.
Mobilizing resources	The frequency with which internal and external resources (financial, human, and material) are identified, distributed, and utilized to support the learning and participation of the institution's students, regardless of their diversity.

Structure of the six domains proposed by the Index for Inclusion (Solis-Grant et al., 2022)

In perspective, therefore, relating the Index for Inclusion to the university context means providing universities with a tool for self-assessment and organizational development focused on continuous improvement. This adaptation would allow for a systematic analysis of the inclusivity of the university environment, considering dimensions such as teaching, relationships, accessibility, and student support. In this sense, the Index could serve as a methodological and cultural lever to promote authentically inclusive universities—physical, relational, and learning spaces where each student can identify as an active member of the academic community and reach their full educational and professional potential.

2. Purpose, structure and dimensions of the Index for Inclusion in University Teaching Questionnaire

Among the objectives of the project is the aim of connecting the Universal Design for Learning (UDL) model with the principles of the Index for Inclusion. From this theoretical and methodological integration emerged a self-assessment tool designed to evaluate the level of inclusivity within the academic context. The tool was developed using the dimensions of the Index for Inclusion, with particular attention to the impact of teaching practices on the construction of an accessible, participatory, and inclusive university environment.

The Index for Inclusion was therefore adapted to the higher education context, with a specific focus on the teaching dimension—unlike other tools that primarily concentrate on institutional or organizational aspects of inclusion. While maintaining its original structure, organized around three main dimensions—culture, policies, and practices—the model was revised in its content, which was reinterpreted in relation to university teaching.

In this way, the tool does not aim to describe the academic context as a whole, as in previous studies, but rather to identify indicators that can strengthen the inclusive dimension within university teaching practice—already permeated by UDL principles. The three original dimensions of the Index for Inclusion were preserved; however, during the adaptation process, the subsection corresponding to Dimension C1, "Building Curricula for All," was excluded, as its indicators were considered overly focused on specific disciplinary content, making them less transferable and applicable across a wide and diverse range of academic fields.

The indicators defining the areas of self-assessment were selected and subsequently adapted to the specific features of the university context. Some explanatory questions accompanying the indicators were modified to better address academic needs, while preserving a structure consistent with the original framework.

The Index for Inclusion in University Teaching Questionnaire was developed as a tool for critical reflection and self-analysis aimed at faculty members, with the goal of fostering an informed evaluation of their own teaching practices from an inclusive perspective. It is not intended as a means to measure or assess the overall organization of the university, but rather as an instrument to guide each faculty's individual reflection on the multiple aspects of their daily practice—from course design to the selection and communication of content, and from relational dynamics to strategies for accessibility and student engagement.

The underlying assumption is that inclusion cannot be conceived solely as an institutional or organizational prerogative; rather, it must also, and above all, take root in the concrete teaching practices enacted within university classrooms. Hence the decision to draw on and adapt the indicators of the Index for Inclusion—a model already widely used in school settings—in order to tailor it to the specific context of higher education. The aim is to offer faculties a tool to identify both the strengths and areas for improvement in their educational practice, in alignment with the principles of equity, participation, and respect for diversity.

The structure of the questionnaire reflects the traditional organization of the Index, articulated into three core dimensions, for a total of 28 items:

1. **Creating Inclusive Cultures**
   This dimension includes the sections *Building Community* and *Establishing Inclusive Values*, for a total of 13 items. These invite lecturers to reflect on students' sense of belonging, mutual respect, the appreciation of gender and cultural diversity, and the promotion of inclusive values such as human rights, equity, and non-violent conflict management.
2. **Creating Inclusive Policies**
   This dimension includes the sections *Developing the University for All* and *Organizing Support for Diversity*, for a total of 6 items. These focus on participation in accessibility initiatives, the integration of students from different socio-cultural backgrounds, classroom organization, and the prevention of discrimination and bullying.
3. **Creating Inclusive Practices**
   This dimension focuses on the section *Coordinating Learning*, consisting of 9 items addressing lesson planning responsive to diverse student abilities, the promotion of active and cooperative participation, support for critical reflection, the use of inclusive assessment practices, and the design of extracurricular activities that enable each student to learn according to their own pace and needs.

From a methodological perspective, the questionnaire employs a graduated response scale (*Very much, Quite a lot, A little, Not at all, Other*), allowing lecturers to express nuanced perceptions of their teaching practice. This approach—far from prescriptive or binary logics—values subjectivity and fosters a reflective and transformative process.

3. The *Index for Inclusion in University Teaching* Questionnaire

Dimension A. Creating Inclusive Cultures

A.1. Building Community

The teaching activities proposed in your course

	A lot	Quite	A bit	Not at all	Other (please specify)
help each student feel welcomed and part of the academic community					
encourage students to support one another during classes and study activities					
promote mutual respect among students, fostering an environment of trust and consideration					
contribute to raising awareness of and respect for gender differences					
support reciprocal development between the academic community and the local community by fostering external collaborations					
take into account and integrate students' personal and family experiences when relevant to inclusion					

A.2. Affirming Inclusive Values

The teaching activities proposed in your course					
	A lot	**Quite**	**A bit**	**Not at all**	**Other (please specify)**
promote inclusive values, encouraging respect for diversity within the course					
refer to human rights and inclusion as fundamental principles					
present inclusion as an opportunity to increase the participation of all students, regardless of their characteristics					
set high expectations for every student, encouraging them to reach their full potential					
address forms of discrimination by creating a safe space for all students					
promote non-violent conflict management and encourage the peaceful resolution of disputes among students					
help students develop self-esteem and value their own academic identity					

Dimension B. Creating Inclusive Policies

B.1. Developing university for all

The teaching activities proposed in your course

	A lot	Quite	A bit	Not at all	Other (please specify)
adopt a participatory process to improve accessibility and inclusion in academic activities					
promote the integration of students from diverse socio-cultural and educational backgrounds					
encourage the formation of classes and groups organized impartially to support the learning of all students					
help prepare students to face post-university challenges, with particular attention to the transition to the workplace or other professional contexts					

B.2. Organizing Support for Diversity

The teaching activities proposed in your course

	A lot	Quite	A bit	Not at all	Other (please specify)
include support services (mentoring, tutoring, counseling) to address the diverse needs of students					
resort to disciplinary measures only when necessary, favoring mediation and dialogue to resolve conflicts					
help prevent and counter bullying and other forms of discrimination					

Dimension C. Creating Inclusive Practices

C.2. Coordinating Learning

The teaching activities proposed in your course

	A lot	**Quite**	**A bit**	**Not at all**	**Other (please specify)**
are designed to respond to the diverse abilities of students					
stimulate the active participation of all students, fostering engagement for everyone					
encourage students to trust their own critical thinking skills					
actively involve students in their learning process, providing opportunities for continuous feedback and self-assessment					
promote cooperative learning through activities that encourage group work and knowledge sharing					
are designed to develop understanding of similarities and differences among people, promoting mutual respect					
support inclusive assessment practices aimed at helping all students achieve their learning objectives					
develop shared resources (materials, supports, technologies) to sustain everyone's learning					
include home study activities structured to ensure that each student can learn and progress at their own pace and according to their needs, fostering an inclusive and non-exclusionary learning path					

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Grounded in the principles of Universal Design for Learning (UDL) and the Index for Inclusion, the volume provides a theoretical and operational framework for reconfiguring university pedagogy through an inclusive lens. It regards the diversity within the student population as a driving force for innovation and transformation within the academic context. The result is an open and reflexive framework designed to guide students and faculties toward difference-sensitive teaching practices, grounded in the principles of Universal Design and sustained by a renewed pedagogical awareness of the "contagious" and "interpellative" nature of inclusion.

Structured around the three core UDL principles – multiple means of Representation, Action and Expression, and Engagement – and aligned with the most recent UDL Guidelines 3.0 (CAST, 2024), the volume weaves together theoretical analyses, contextual interpretations and practical proposals. In its final section, it also includes a curated glossary aimed at promoting the dissemination of a shared pedagogical vocabulary, and a set of self-assessment and reflection tools designed to support critical self-analysis and professional growth among both faculties and students.

The Project of Relevant National Interest 2022, intitled "Dante-U", aims to foster a more inclusive and accessible university environment in which every student feels valued and supported. By applying the principles of Universal Design for Learning (UDL) and strategically integrating digital teaching methodologies, the project aims to enhance student engagement and reduce barriers to learning. Ultimately, it seeks to foster awareness and autonomy among both students and faculty, supporting their growth within an innovative and inclusive learning ecosystem.