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An educational guide for teaching and learning

CULTIVATING LIFE SKILLS THROUGH REFLECTIVE WRITING IN HIGHER EDUCATION

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Cultivating life skills through reflective writing in higher education

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Introduction

"[...] I think there are four great motives for writing, at any rate for writing prose. They exist in different degrees in every writer, and in any one writer the proportions will vary from time to time, according to the atmosphere in which he is living. They are:

(i) Sheer egoism. Desire to seem clever, to be talked about, to be remembered after death, to get your own back on grown-ups who snubbed you in childhood, etc., etc. [...].

(ii) Aesthetic enthusiasm. Perception of beauty in the external world, or, on the other hand, in words and their right arrangement. Pleasure in the impact of one sound on another, in the firmness of good prose or the rhythm of a good story. Desire to share an experience which one feels is valuable and ought not to be missed. [...].

(iii) Historical impulse. Desire to see things as they are, to find out true facts and store them up for the use of posterity.

(iv) Political purpose – using the word 'political' in the widest possible sense. Desire to push the world in a certain direction, to alter other people's idea of the kind of society that they should strive after [...].

(Orwell, "Why I Write", *Gangrel, No. 4, Summer 1946*)

Writing is a fundamental skill. More than 85% of the population of the world can now write. Writers use this versatile skill to learn new ideas, support reflection, persuade others, record information, create imaginary worlds, express feelings, entertain others, heal psychological wounds, and explore the meaning of events and situations (Graham, 2019). Moreover, writing is a fundamental competence in several jobs (Light, 2001). Finally, writing is a transversal competence supporting soft skills such as communication, team-work and critical-thinking. Despite its importance, writing competences are not well-developed even at the higher education level. Even in highly literate societies, opportunities to engage expressively, creatively, and practically in writing are unequally distributed. This is true for writing that contributes to the generation of knowledge. Writing in higher education is only sporadically addressed, and many students complete a higher education degree with limited opportunity to practice writing. Moreover, the cultural component of writing education is quite often neutralized (Graham & Rijlaarsdam, 2016): even in regions that are closely related, such as European countries, differences in writing can be as prominent as similarities. There are several reasons why writing competences are suboptimal even at the end of a higher education degree. Higher education teachers may not devote enough time to teaching discipline-specific writing. Higher education students may not write frequently while studying and completing assignments. Finally, there is a notable absence of the use of digital tools for writing. While most writing outside of school today is done digitally (Sefton-Green, 2021), the use of digital tools for writing or writing instruction is notably absent in the typical classroom (Limpo et al., 2020).

Digital writing is the art of producing documents by computer and for online delivery. Writing practices are today anchored to digital spaces, thus digital writers need to learn to produce dynamic and interactive texts. When students enter higher education, they are often not equipped with the competencies to produce high-level texts. Moreover, the opportunities given to students to practice wri-

ting are limited. Students write to learn or to complete assignments but do not necessarily receive adequate support. Indeed, monitoring the writing process and offering valuable productive feedback to students is too time-consuming, labour-intensive, and subjective (Lim & Phua, 2019). Given the importance that writing plays in students' knowledge acquisition, lifelong learning and, ultimately, reflective citizenship, writing should be an integral part of the learning process throughout a student's education. Some universities have writing centers to help students write thesis and dissertations, and academic writing is sometimes explicitly addressed through workshops and courses. But writing should be taught across and within disciplines by those with expertise in each discipline. Writing should be considered as a life skill and integrated with life skills development.

This book is an educational proposal to improve the writing skills of higher education students. As scholars, we all experience on a daily basis the fundamental role writing plays for our professional development. We write to brainstorm, organize our thoughts, share hunches with close colleagues, revise drafts, plan and monitor complex projects and, last but not least, to disseminate our scientific results. However, the pervasiveness of writing when we act as researchers is not always mirrored when we act as lecturers. Its creation has its origin in the "ORWELL" project (https://orwellproject.eu/), co-funded by the European Union and focused on improving Online Reflective Writing in Higher Education [2022-1-IT02-KA220-HED-000086063]. ORWELL was coordinated by the University of Florence and based on a partnership with University of Cantabria, Malmö University, EUDA and WIDE Services.

The general objective of ORWELL was supporting digital writing competencies in higher education. Today, more than ever, students are immersed in a technology-rich environment, which provides them with opportunities to improve and support fundamental skills such as writing. We interpreted digital in two ways: students have to learn to write in digital spaces, students have to learn to use

digital tools to support their writing processes. Moreover, we identified three specific objectives that will help us addressing the general objective:

1. Supporting higher education teachers in improving students' writing competences using technologies across disciplines.
2. Supporting higher education students' writing competences in digital spaces.
3. Supporting collaborative writing practices.

In this book, we propose writing as a tool to nurture higher education students' life skills development. "Life skills" refer to a set of abilities and competencies that individuals need to navigate and effectively cope with the challenges and demands of everyday life. Developing life skills is crucial for individuals to adapt to changing circumstances, make informed decisions, build positive relationships, and contribute meaningfully to society. In an educational context, fostering life skills is often seen as integral to learning, aiming to equip individuals with the tools necessary for personal growth and success in both academic and real-world settings.

The book includes five main parts. In Part I, titled "Life Skills and Writing in Higher Education," the reader is presented with the general framework of this study. This section addresses the scarcity of didactic proposals for writing demands in the university context, providing insights from flip-cards, discussing writing in digital spaces, and exploring writing theories with a focus on epistemological aspects. It includes two chapters: Chapter 1 delving into essential life skills and Chapter 2, which explores the landscape of writing in higher education. Part II to IV present the reader with each life skill, which are organized in three areas. In Part II, the focus shifts to "Promoting Life Skills through Writing Activities: The Personal Area," featuring Chapters 3 to 5. Here, the book explores self-regulation, flexibility, and wellbeing as key components in the personal development of students. Part III continues this exploration into the Social Area with Chapters 6 to 8, emphasizing the importance of empathy, communication, and

collaboration as essential life skills. Part IV of the book, "Promoting Life Skills through Writing Activities: The Learning Area," introduces Chapters 9 to 11. This section delves into cultivating a growth mindset, fostering critical thinking, and honing skills related to managing learning effectively. For each chapter we present a discussion of the target life skills within the higher education setting, and suggest how it can be supported through writing activities. Finally, Part V, "Conclusions," wraps up the book with three essays. The first one presents the higher education instructors writing textbooks and the role that writing played in their lifelong learning path. The second one presents a pedagogical perspective on the role of writing in life, society and educational environments. The third one presents a pedagogical perspective on the role of writing within the LIFECOMP framework.

The book provides a structured and comprehensive approach to promoting reflective writing and life skills within the university context, making it a valuable resource for educators and students alike. The book has been a collective effort from ORWELL academic members. Lidia Casado Ledesma, Christian Tarchi, Enrico Ravera and Cosimo Di Bari are the co-authors of this book. Lidia Casado Ledesma has written all the narratives of the scenarios and has also written the first draft off all the chapters, except for chapter 5 and chapter 8. Christian Tarchi has written the introduction, co-written chapter 1 and 2, and revised all the other chapters. Enrico Ravera has written the essay "Writing to learn: An Essay on The Higher Education Teachers' Perspective" included in the conclusions and revised all the chapters. Cosimo Di Bari has written the essays "Writing and education: An Essay On Instructional and Educational Strategies in Higher Education" and "An essay on Writing to Nurture the Nine LIFECOMP and to Form the Contemporary Subject" included in the conclusions and contributed to the overall design of the book. Two chapters have been by colleagues from the ORWELL project. Chapter 5 "Wellbeing" was written by Ruth Villalón Molina and Marta Gallardo Gómez (Universidad de Cantabria). Chapter 8 "Collaboration" was written by Eva Wennås Brante (Malmö University).

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Part I.
Life Skills and Writing in Higher Education

Dear reader, we introduce you to C. As strange as it may seem, we know C. better than we know ourselves. So much so that we can venture to say what C. thinks and feels with the confidence of conveying their inner world with a negligible margin of error. As for C.'s behavior, it will be her actions (and not us) that speak for themselves. Dear reader, dear witness of C.'s life, welcome to a familiar story that will surely be easy to remember.

C. is born and grows up in a city with specific latitude and longitude, like all cities on planet Earth. C. is fortunate because, for completely random reasons, she inhabits a place where education and literacy are understood to be necessary for contributing to cognitive and social development and the advancement of societies. Being that C. has the opportunity to go to school, and when C. is not even 6 years old, she discovers a secret that will accompany her throughout life. It is at that moment when C. discovers that letters can not only be heard but also drawn on paper and that there are infinite messages hidden behind a sequence of letters, words, and texts. C. thus begins their relationship with writing.

During C.'s mandatory schooling, writing plays a predominant role. C. reads and writes; writes and reads; writes and reads and writes... and so the years pass, and C. advances in her representation of the world. However, as C. progresses through the grades and the content she learns becomes more complex, she begins to perceive a pattern. She becomes

aware that writing seems to be more friendly to certain areas of knowledge and remains on the margins of instruction. C. realizes that writing becomes that familiar presence everyone knows but only reveals itself on special occasions. And on what occasions? Well, those which are not very pleasant for any student: evaluations. And then, C., who had a great relationship with writing, begins to distrust it.

C. draws her own conclusions from what is happening and thinks that writing is like that catchy summer song everyone talks about; the one that plays on a loop until every detail is memorized and the one that plays at all the parties; that is, in all school subjects. But, like all summer songs, writing has a very clear end. For C., writing is condemned to be forgotten.

In this whole course of time, C., who not only thinks but also grows, reaches the age to enroll in university. C. decides to enroll in one of those university programs where the focus is multidisciplinary, as her interests are very broad, and she is not convinced to select a completely technical or scientific, or completely social or humanistic path. C. then begins the university experience.

1. Life skills and higher education

The LIFECOMP framework
(The European Framework for Personal, Social
and Learning to Learn Key Competence)

1. Relation between writing and life skills

Effective writing is an essential and fundamental skill that should be developed and honed throughout the entire educational journey. Nevertheless, it is during the university stage that students are required to harness this skill to navigate through increasingly intricate academic challenges. At this pivotal phase, writing transforms into more than just a tool for completing tasks like crafting a thesis; it evolves into an epistemic instrument, facilitating the acquisition of diverse disciplinary knowledge.

At the university level, writing serves as a means for intellectual exploration and engagement with diverse fields of study. Through the process of articulating their thoughts in writing, students delve deeper into their chosen disciplines, gaining profound insights and refining their understanding of complex concepts. As they express their ideas with clarity and precision, they not only demonstrate mastery of the subject matter but also solidify their own comprehension of the material. Furthermore, effective writing enhances critical thinking skills, as students must organize their thoughts, analyze information, and construct logical arguments. This analytical approach not only fortifies their academic performance but also fosters the ability to approach real-world challenges with a thoughtful and

informed perspective. In addition, the exercise of writing also cultivates the essential skill of communication. The ability to express ideas clearly and persuasively in writing is transferable to other domains of life, including professional settings and personal relationships. A well-crafted written message has the power to inspire, inform, and influence others, making effective writing an invaluable asset in both academic and real-world scenarios.

This book is intended as a guide to promote writing as a tool that supports lifelong learning to work and live in the 21st century, i.e., a competence that enables personal development, social inclusion, active citizenship, and employment. In the university context, writing-related tasks and the use of writing for epistemic and reflective purposes are predominant. In this book, we propose different methodologies and activities that can be carried out from a multidisciplinary, multi componential approach, and with the ultimate goal of supporting the autonomous and continuous learning of the students. Understanding writing as a reflective tool (and not only as a mean for academic communication), we have based the structure of this book on the LIFECOMP framework (The European Framework for Personal, Social and Learning to Learn Key Competence).

2. The LIFECOMP framework

In 2018 the Council of the European Union revised the 2006 Recommendation of the European Parliament and the Council on Key Competences for Lifelong Learning. The previous 'Learning to Learn' competence has been expanded to encompass a broader scope, now emphasizing personal and social development. The key competences are now referred to as "Personal, Social, and Learning to Learn." They encompasse relevant competences that all citizens should develop to enable active participation in society and the economy, especially given the increasing significance of 'soft skills' in a rapidly changing global context. The LIFECOMP framework is a versatile

tool that can be tailored to diverse learning environments and target groups, facilitating the development of "Personal, Social, and Learning to Learn" competences in specific contexts. It is designed to be adaptable rather than prescriptive, offering a validated depiction of the key competence components.

The conceptual model of LIFECOMP is built upon the three distinct areas (personal area, social area, and learning to learn) delineated by the 2018 Council Recommendation. Each area comprises three competences (personal area: self-regulation, flexibility, wellbeing; social area: empathy, communication, collaboration; learning to learn: growth mindset, critical thinking, managing learning). Additionally, each competence is further detailed through three descriptors, utilizing the 'awareness, understanding, action' model recommended by experts to represent various facets of deployment. Below we will explain what each area consists of, the competencies that each one comprises and the associated descriptors (see Table 1).

Table 1. LIFECOMP at a glance

Area	Skill	Definition
Personal	Self-regulation	*Awareness and management of emotions, thoughts, and behaviour*
	Flexibility	*Ability to manage transitions and uncertainty, and to face challenges*
	Wellbeing	*Pursuit of life satisfaction, care of physical, mental and social health, and adoption of a sustainable life*
Social	Empathy	*The understanding of another person's emotions, experiences and values, and the provision of appropriate responses*
	Communication	*Use of relevant communication strategies, domain-specific codes and tools, depending on the context and content*

	Collaboration	*Engagement in group activity teamwork acknowledging and respecting others*
Learning	Growth mindset	*Belief in one's and others' potential to continuously learn and progress*
	Critical thinking	*Assessment of information and arguments to support reasoned conclusions and develop innovative solutions*
	Managing learning	*The planning, organizing, monitoring, and reviewing of one's own learning*

2.1. The personal area

This area focuses on personal development, emphasizing the realization of individual potential. The 1996 Delors report identified "learning to be" as a pillar of education, emphasizing the development of one's personality and the ability to act with growing autonomy, judgment, and personal responsibility. "Learning to be" involves understanding how to maintain a healthy mind, body, and lifestyle, coping with complexity, uncertainty, and stress, seeking support when needed, and cultivating resilience. It also includes developing the ability to work autonomously and manage one's career, along with attitudes such as assertiveness, integrity, self-motivation, problem-solving, and a positive disposition toward promoting personal, social, and physical well-being. This area is associated with the following three competences, which we will now describe based on their descriptors: self-regulation, flexibility and wellbeing.

2.1.1. Self-regulation

Self-regulation is an inherently human capacity that enables us to modify and control our responses, ensuring they are not mere unconscious reactions to stimuli. This cyclical process involves three main steps: establishing a desired state by creating action plans, setting goals, and anticipating future outcomes; comparing

the current state with the desired one through self-monitoring and cultivating self-awareness; and acting to modify the current state if it deviates from the desired one. The essence of self-regulation lies in restraining the inclination to respond to stimuli with automatic reactions, such as learned habits, innate responses, or impulsive actions. Self-regulatory strength is a capacity that varies among individuals and can be enhanced through practice. It plays a crucial role in active engagement in learning, including learning how to learn, and is essential for developing other key competences. For example, alongside self-efficacy (belief in one's capacity to achieve goals), self-regulation is a vital component of the Entrepreneurship competence, encompassing the ability to create cultural, social, or economic value.

The three descriptors associated with self-regulation are the following:

a. Awareness and expression of personal emotions, thoughts, values, and behavior.
b. Understanding and regulating personal emotions, thoughts, and behavior, including stress responses.
c. Nurturing optimism, hope, resilience, self-efficacy, and a sense of purpose to support learning and action.

2.1.2. Flexibility

In today's ever-changing global environment marked by volatility, uncertainty, complexity, and ambiguity, citizens must adeptly navigate uncertainties and adjust their behaviors to evolving conditions. Life is characterized by developmental changes and disruptive events, spanning various domains such as learning transitions, professional advancements, family dynamics, and external environmental shifts. Flexibility, beyond adapting to new situations, entails making adjustments, embracing complexity, contradictions, and uncertainty, and being willing to tackle tasks with incomplete information.

The three descriptors associated with self-regulation are the following:

a. Readiness to review opinions and courses of action in the face of new evidence.
b. Understanding and adopting new ideas, approaches, tools, and actions in response to changing contexts.
c. Managing transitions in personal life, social participation, work and learning pathways, while making conscious choices and setting goals.

2.1.3. Wellbeing

Well-being can be defined as an emergent outcome from the dynamic integration of physical, cognitive, emotional, social, existential, and environmental factors. Strategies to enhance well-being encompass practices for physical well-being, such as good sleep hygiene and healthy lifestyle choices, cognitive well-being through creative activities and continuous learning, emotional well-being via autonomy and self-regulation, and social well-being fostered by empathy, altruism, and interpersonal relationships. Additionally, citizens' existential well-being is enriched through purposeful living and intentional choices, while environmental well-being is an integral aspect, supported by sustainable practices and climate advocacy.

The three descriptors associated with self-regulation are the following:

a) Awareness that individual behavior, personal characteristics and social and environmental factors influence health and wellbeing.

b) Understanding potential risks for wellbeing, and using reliable information and services for health and social protection.

c) Adoption of a sustainable lifestyle that respects the environment, and the physical and mental wellbeing of self and others, while seeking and offering social support.

2.2. The social area

The social domain focuses on developing the skills and awareness essential for fostering harmonious coexistence and understanding the

inherently social nature of humanity. This encompasses the ability and willingness to positively engage, communicate, and collaborate with others.

The internalization of shared values is a critical outcome of utilizing social competencies, especially given the anticipated growth, in the immediate future, of jobs that will require strong collaboration and communication skills. Alongside empathy, entrepreneurship, and innovation, effective collaboration and communication are deemed crucial for navigating a labor market heavily influenced by technological advancements. It is therefore imperative for individuals to actively cultivate these skills. Social competence, as outlined in the 2018 European Council Recommendation on Key Competences, involves understanding societal codes of conduct and communication norms. It requires the capacity to communicate constructively in diverse environments, collaborate in professional settings, negotiate, demonstrate tolerance, comprehend and express various perspectives, instill confidence, and practice empathy. Social competence also entails fostering a collaborative attitude, respecting human diversity, overcoming prejudice, and engaging in compromise while actively participating in society. These competencies in the social realm are closely intertwined with the key competences of "Citizenship" and "Cultural Awareness," forming a comprehensive set of skills necessary for thriving in democratic societies. This area is associated with the following three competences, which we will now describe based on their descriptors: Empathy, communication and collaboration.

2.2.1. Empathy

Empathy plays a crucial role in the deployment of various social and emotional competences, forming the foundation for building positive relationships. At the core of all pro-social behaviors, empathy is instrumental in managing stress and resolving conflicts. It encompasses three key aspects: the ability to recognize emotions in others, to cognitively adopt their perspective and share emotio-

nal states, and the capacity to provide an appropriate response to others' emotions.

Empathy is a prerequisite for effective communication, interaction, and collaboration. It plays a pivotal role in regulating pro-social behaviors while inhibiting aggressive and antisocial tendencies. Recognizing its significance, the UNESCO Working Group on Global Citizenship Education includes empathy as one of the essential global citizenship competences. Scientific evidence indicates that empathy is ingrained in the human brain, and our species' survival has been historically linked to the ability to understand and assist others. Importantly, it is widely acknowledged that specific practices can enhance and develop empathy.

The three descriptors associated with empathy are the following:
a. Awareness of another person's emotions, experiences and values.
b. Understanding another person's emotions and experiences, and the ability to proactively take their perspective.
c. Responsiveness to another person's emotions and experiences, being conscious that group belonging influences one's attitude.

2.2.2. Communication

The 'linguistic model' of interpersonal communication identifies six crucial components for effective communication: the sender, message, receiver, context, code, and channel. The rise of digital technologies has revolutionized communication, enabling instant and cost-effective exchange through computer-mediated communication (CMC) and social media. While CMC facilitates connections over distances, it lacks the socio-emotional and nonverbal cues present in face-to-face interactions, potentially compromising effectiveness and leading to unintended interpretations.

To address these challenges, students and lifelong learners need digital competence. The Digital Competence Framework for Citizens underscores the importance of creating and managing digital identities, protecting reputations, handling data from various tools, and interacting through diverse digital technologies. It emphasizes awa-

reness of behavioral norms in digital environments, the adaptation of communication strategies to specific audiences, and recognition of cultural and generational diversity in digital interactions.

The three descriptors associated with communication are the following:

a. Awareness of the need for a variety of communication strategies, language registers, and tools that are adapted to context and content.
b. Understanding and managing interactions and conversations in different socio-cultural contexts and domain-specific situations.
c. Listening to others and engaging in conversations with confidence, assertiveness, clarity and reciprocity, both in personal and social contexts.

2.2.3. Collaboration

Navigating the complexities of 21st-century challenges demands intricate responses on both personal and collective fronts. The dynamic interplay of interconnected factors, often unpredictable and uncontrollable, necessitates successful solutions rooted in effective collaboration among individuals, organizations, and networks. Vital to this collaboration is the embrace of diverse perspectives, fostering novelty and a rich array of ideas to tackle shared tasks. Citizens play a crucial role by actively participating in collective activities, pooling knowledge and resources to achieve common goals, not only fostering shared accomplishments but also mitigating negative psychological states. Positive interdependence, relying on each other's efforts, and promotive interaction, encouraging and facilitating contributions, are pivotal for successful collaboration. Individuals striking a balance between personal goals and genuine concern for others emerge as adept negotiators and problem solvers. Collaboration-minded individuals navigate beyond the limitations of social dilemmas, where prioritizing individual benefit over group welfare can lead to suboptimal results. Leveraging digital technologies offers innovative avenues for collaboration, including sharing data, acting as intermediaries,

and utilizing digital tools for collaborative processes and knowledge creation.

The three descriptors associated with collaboration are the following:

a. Intention to contribute to the common good and awareness that others may have different cultural affiliations, backgrounds, beliefs, values, opinions or personal circumstances.
b. Understanding the importance of trust, respect for human dignity and equality, coping with conflicts and negotiating disagreements to build and sustain fair and respectful relationships.
c. Fair sharing of tasks, resources and responsibility within a group taking into account its specific aim; eliciting the expression of different views and adopting a systemic approach.

2.3. The learning to learn area

In our dynamic world, the skill of Learning to Learn is considered paramount, especially as students face unprecedented challenges such as navigating jobs, roles, and emerging technologies that have not yet made their way into the educational systems. The influx of data from the Internet introduces new social phenomena, including intentional misinformation. The digitalization of life underscores the need for continuous learning, making Learning to Learn crucial for persistent, organized learning and effective time and information management, both individually and collaboratively. This skill transverses both the personal and the social dimensions, encompassing cognitive aspects like problem-solving, metacognitive elements like self-awareness, and affective dimensions like motivation. Socially, Learning to Learn includes understanding contextual aspects such as historical, economic, and cultural dimensions. The Council Recommendation of 2018 highlights this competence's components, including knowledge of preferred learning strategies and the ability to critically reflect and make decisions. Acquirable throughout life, Learning to Learn is a key driver for change in adulthood, enhancing employability and competi-

tiveness. Proficient lifelong learners contribute to societal well-being by engaging intentionally in new learning activities and adapting to a rapidly changing world. This area is associated with the following three competences, which we will now describe based on their descriptors: Growth mindset, critical thinking and managing learning.

2.3.1. Growth mindset

A growth mindset, characterized by openness and curiosity towards new learning experiences, coupled with the belief in one's capacity for improvement through dedication and effort, contrasts with a fixed mindset that perceives intelligence and creativity as unalterable attributes. Individuals with a growth mindset embrace challenges, persist in the face of obstacles, see effort as crucial for mastery, learn from criticism, and draw inspiration from others' achievements. This mindset facilitates a more efficient recovery from setbacks, enhancing overall achievement. People often exhibit a combination of mindsets, showing a growth mindset in specific learning areas while displaying a fixed mindset in others. This nuanced perspective, linked to self-awareness and self-direction, emphasizes the ongoing importance of developing the ability to face challenges, embrace learning, and maintain confidence in one's potential for improvement.

The three descriptors associated with growth mindset are the following:
a. Awareness of and confidence in one's own and others' abilities to learn, improve and achieve with work and dedication.
b. Understanding that learning is a lifelong process that requires openness, curiosity and determination.
c. Reflecting on other people's feedback as well as on successful and unsuccessful experiences to continue developing one's potential.

2.3.2. Critical thinking

Critical thinking, crucial for navigating uncertainty, complexity, and change, is closely associated with managing learning and "mindful agency." This involves skillfully overseeing the learning process,

managing emotions related to challenges, and taking responsibility in the learning journey. Critical thinking is a self-directed, adept analysis of information, beliefs, or knowledge, requiring continual reconstruction of one's thinking. It involves knowledge of methods for assessing and generating new knowledge, as well as strategies for problem-solving. Critical thinkers are aware of egocentric and sociocentric thinking tendencies, willing to assess and evaluate information, and strive to cultivate intellectual virtues like integrity, humility, empathy, justice, and confidence in reason. In the information-saturated "post-truth" era, citizens must discern between facts, propaganda, opinions, and rumors by recognizing the influence of personal values on evaluating arguments. Perspectives on critical thinking highlight both divergent and convergent thinking, emphasizing creative idea generation and evaluative processes for optimal solutions. Critical thinking, intertwined with creativity, is seen as a higher-order skill linked to teachable learning dispositions. Divergent thinking involves playful exploration of ideas, demanding affective and cognitive resources, while critical thinkers exercise self-regulation and a willingness to critically assess and evaluate information.

The three descriptors associated with critical thinking are the following:

a. Awareness of potential biases in the data and one's personal limitations, while collecting valid and reliable information and ideas from diverse and reputable sources.
b. Comparing, analyzing, assessing, and synthesizing data, information, ideas, and media messages in order to draw logical conclusions.
c. Developing creative ideas, synthesizing and combining concepts and information from different sources in view of solving problems.

2.3.3. Managing learning

Managing learning involves fostering motivation for the development of both metacognitive knowledge and metacognitive regula-

tion. Metacognitive knowledge encompasses an understanding of general cognition, personal knowledge states, and one's strengths and weaknesses as a learner. It also includes knowledge about the task at hand, such as its difficulty level and suitable strategies, along with general approaches to learning, thinking, and problem-solving. Metacognitive procedural regulation applies this knowledge to plan, monitor, and evaluate one's own learning. Motivation, characterized by energy, direction, and persistence, is a crucial catalyst for learning. Intrinsic motivation, driven by personal rewards, encourages engagement in learning activities, while extrinsic motivation, linked to external rewards, can be influenced by societal pressures. Learning environments that address basic psychological needs, like autonomy, relatedness, and competence, are more likely to foster positive motivation and enhance learning outcomes. Awareness of one's learning dispositions, motivations, and reflective practices plays a pivotal role in managing learning, facilitating meaningful learning where new knowledge is consciously integrated with prior mastery. Lifelong learning requires the development of self-regulatory skills, encompassing metacognitive, motivational, and behavioral processes initiated by learners to acquire knowledge and skills. This involves goal setting, planning, learning strategies, self-reinforcement, self-recording, and self-instruction, ultimately promoting a growth mindset and intrinsic motivation.

The three descriptors associated with managing learning are the following:

a. Awareness of one's own learning interests, processes and preferred strategies, including learning needs and required support.
b. Planning and implementing learning goals, strategies, resources and processes.
c. Reflecting on and assessing purposes, processes and outcomes of learning and knowledge construction, establishing relationships across domains.

2. Writing in Higher Education

Writing is a cultural artifact that has allowed for the expansion of the human mind. It is a multifaceted activity that can be used by human beings to achieve several goals, from resolving daily tasks more effectively (e.g., to-do lists) to promoting significant social transformation (e.g., revising a constitution). When embedded in educational contexts, writing has a dial identity: it is a cross-disciplinary academic ability and a powerful communication tool (Boscolo, 2014). Writing can be analyzed from different standpoints. It can be seen as the motor act of putting a word on a blank sheet, as a coherent system of signs, as a means of communication, or as a form of art. But it can also be analyzed in interaction with the psychological processes of the person who writes.

Writing promotes thinking, both phylogenetically and ontogenetically. From a phylogenetic perspective, the human invention of an ability to represent in writing all sounds of spoken languages was a key ingredient of the development of ancient cultures. In ancient Greece, for instance, writing may have boosted the development of philosophy as writing facilitated a comparison between past and present perspectives, critique of cultural traditions and testing of alternative hypotheses (Baron, 2023). From an ontogenetic perspective, the acquisition of writing unlocks in the child a higher mental functioning, as it allows them to transform language elements into objects of

reflection. As a natural consequence, the learning of writing represents a significant milestone in our psychological development.

The learning of writing in the school context is closely linked to the learning of reading and begins around the age of six. From that moment on, children will acquire linguistic competence, which will be the foundation of all subsequent development in the curricular field and can be regarded as a significant predictor of academic success. Accordingly, throughout schooling, one faces several demands that require the implementation of writing. For instance, one must complete written exercises and exams in different subjects, craft opinion essays, write research papers, and even textbooks... The complexity of these tasks will increase with the years of schooling, but writing will always be present. As students become more fluent in writing, they keep learning to write, but begin to also use writing to learn.

In addition, writing is not only a requirement of formal education contexts. While we tend to associate writing with school age, it extends throughout our entire lives and accompanies us in a cross-cutting manner: from writing a motivational letter to find a job to composing a piece to understand our emotions in a therapeutic process. Writing is a constant in our life development and can be understood as an end in itself, assuming its role in cognitive development, but also as a tool for knowledge acquisition and the enhancement of a multitude of competencies associated with higher-order mental processes, as well as with our personal and social development. Therefore, writing is a tool that contributes to the growth of the mind and promotes lifelong learning.

1. Theoretical Models of Writing

The preceding paragraphs underscore the significant potential of writing in fostering the evolution of thought and knowledge, presenting it as a tool with a substantial epistemic value. Research in the "writing to learn" movement indicates that writing, in its various

forms, serves as a vehicle for learning, eliciting positive impacts on knowledge and thinking across diverse fields and contexts (Klein & Boscolo, 2016). As suggested by Scardamalia and Bereiter (1992), the dynamic interplay between knowledge and text processing is pivotal in advancing cognitive development and facilitating the transformation of knowledge. This is the conception of writing that guides this book and all our writing-based instructional activities to promote life skills. However, in order to understand the theoretical perspectives that have guided the development of all the instructional proposals included in this book, it is necessary to know the different approaches from which writing has been conceptualized historically. Importantly, these models contribute to creating an evidence-based approach to writing for lifelong learning. Overall, we can identify two main approaches to writing, cognitive and sociocultural.

1.1. Cognitive approaches to writing

Writing can be compared to the functioning of a mechanism that carrys out those operations that are needed to produce specific "objects," such as texts (Boscolo, 2014). Early research on writing was influenced by psychological studies of problem-solving. From this conception of writing emerged the well-known model of Hayes and Flower (1980), in which writing is conceptualized through three key processes: planning, translation of plans into text, and revision. These processes operate on information from the task environment and from long-term memory (Hayes & Flower, 1986). The term "translation" in this context refers to the conversion of conceptual content into linguistic form. The model of these authors departs from the conventional approach to writing, which focuses on the final product. Its uniqueness rests in its recognition of the iterative nature of the writing process. Within this framework, planning, translation, and revision are considered cognitive processes that can be adapted at any point in the writing process, challenging the notion of rigid stages in the development of this activity.

In addition, the research of these authors yielded a crucial finding: the ability to differentiate between expert and novice writers (Hayes & Flower 1986). Expert writers are able to approach writing as a goal-oriented activity, and self-regulate their affective, cognitive and behavioral processes until goals are achieved. Moreover, experts are able to use writing in an epistemic correct way (e.g., writing in a specific genre), yet they are flexible in the use of writing as a tool for reflection. Bereiter & Scardamalia (1987), for whom the act of writing was also regarded as a recursive process involving the use of problem-solving strategies and cognitive regulation to enhance the quality of writing, outlined the differences between expert and novice writers by contrasting a knowledge-telling model with a knowledge-transforming model of writing. In the knowledge-telling approach, novices primarily retrieve content directly from long-term memory, organized through associative relationships. Conversely, expert writers employing a knowledge-transforming strategy construct a detailed representation of the rhetorical challenge, guiding the generation and evaluation of content based on derived goals. Expert writers demonstrate more reflective thinking, developing intricate plans, making substantial modifications during writing, and engaging in extensive revisions. Consequently, the texts produced by expert writers are tailored to meet the needs of the audience, and their understanding of the subject is deepened through alignment with communicative goals. The knowledge-transforming model aligns with classical cognitive models in its overarching emphasis on the higher-level reflective thinking inherent in the writing process.

The exploration of cognitive interactive aspects in these writing models has significantly enriched our understanding of distinctions between experts and novices in crucial writing processes like planning, translating, reviewing, and monitoring. Novices, when compared to experts, frequently demonstrate deficiencies in goal-setting, considering the audience, monitoring output in alignment with goals, and revising text at an organizational level. While models by Hayes and Flower (1980) and Bereiter and Scardamalia (1987) integrate elements such as the task environment and self-regulatory strategies,

their primary focus remains on the role of cognitive processes in students' writing competence. However, comprehensive explanations for writing performance and self-regulated development necessitate the inclusion of social, motivational, and behavioral processes in addition to cognitive ones. Writing transcends being merely an expression of cognitive skill; it is a social cognitive process wherein writers must be attuned to readers' expectations and committed to revising text drafts for effective communication. In the 1990s, a new wave of research, highlighted by Castelló et al. (2010), addressed this limitation and developed an approach to understanding writing through a socio-cognitive lens.

Writers employ self-regulation techniques, often developed informally through personal struggles or by emulating successful models. In the field of writing, self-regulation encompasses writers' self-initiated thoughts, feelings, and actions aimed at a variety of literary goals, including improving writing skills and improving the quality of the text they compose. Zimmerman and Risemberg (1997) suggested that writing involves three types of self-regulation strategies: Environmental, behavioral, and personal self-regulation strategies. Environmental processes encompass writers' self-regulation within the physical or social context in which they write. Behavioral processes involve writers' self-regulation of overt motoric activities associated with writing, while personal processes entail writers' self-regulation of cognitive beliefs and affective states linked to writing. According to this model, these three self-regulation strategies create a cyclical feedback loop with self-efficacy.

Self-efficacy in writing involves an individual's confidence in their capacity to plan and execute actions needed to reach specific proficiency levels in writing tasks (Zimmerman & Bandura, 1994; Pajares & Johnson, 1994). Bandura's social cognitive theory (1986) is well-positioned to explain the self-regulation of writing by highlighting the reciprocal relations among triadic sources of self-regulatory influence and underscoring how self-efficacy beliefs impact personal motivation and achievement. Writers' self-efficacy is not only indicative of

their self-regulatory processes but also plays a predictive role in their intrinsic motivation to write and their ultimate literary achievements (Schunk & Zimmerman, 1997; Zimmerman & Bandura, 1994).

Zimmerman and colleagues significantly influenced the development of Self-Regulated-Strategy-Development (SRSD), an approach aimed at addressing writing challenges among students. Graham and Harris (1996) formulated a model within SRSD that combines explicit instruction in planning and revising strategies with self-regulation procedures. Diverging from mere descriptions of writing processes in cognitive models, this proposal serves as an intervention model for students to master cognitive processes in composing texts. It encourages autonomous, reflective, and self-regulated use of writing strategies, fosters an understanding of good writing characteristics, and promotes a positive attitude toward writing and towards self as writers. The six-stage proposal acts as an adaptable guide for teachers. Initially, the teacher helps students develop essential prior knowledge, and through discussions, they jointly examine writing strategies, their purposes, and benefits. Subsequently, the teacher models strategy use, incorporating self-instructions, allowing students to memorize and practice collaboratively. Ultimately, students independently apply learned strategies without teacher support.

Leaving aside the intrinsic value of these models in understanding the role of self-regulation in writing processes and how didactic interventions can be developed based on this principle, their conception of writing remains within the bounds of individuality. Nevertheless, more recent theoretical approaches advocate for conceiving writing from a more dialogical and collaborative perspective. In particular, we are referring to theories of writing framed within the socio-cultural framework.

1.2. Socio-cultural approaches to writing

The sociocultural approach, in contrast to the cognitive one, considers writing as a participation tool (Boscolo, 2014). Originating from

Vygotsky (1980), it posits that individuals learn from more knowledgeable others (MKOs), those with greater subject mastery. Linguistics researchers furthered this theory, emphasizing language's role in social and cultural interactions. This linguistic focus facilitated its integration with writing instruction. Sociocultural theory challenges the historical view of writing as a solitary endeavour, but rather advocating a collaborative, social representation where it is posited that novice writers learn from experienced counterparts. In the context of the classroom, MKOs can be students, teachers, or established authors. Viewing writing not just as a discipline but also as a tool for learning disciplinary content ("writing to learn"), the theory considers prior knowledge, language understanding, genres, motivation, and technology. Under the sociocultural perspective, writing is a collaborative effort, with teachers actively engaging as co-authors, guiding, supporting, and modeling effective practices. The sociocultural approach in research prioritizes interaction between participants over final products, emphasizing classroom practices, literate actions, and collaborative efforts supported by scholar settings (Prior, 2006).

1.3. Connection between beliefs about writing and the inclusion of writing practices in the curriculum

In the fields of psychology and education, there is a growing interest in delving into teachers' conceptions, fueled by the substantial correlation identified between these conceptions and the specific practices enacted in the classroom. Teachers' beliefs not only provide valuable insights into their classroom practices but also function as predictors of writing performance, as highlighted by Fives and Buehl (2012). The filtering effect of these beliefs is crucial in shaping teachers' self-evaluations and the focus of their attention, as emphasized by Nespor (1987). Furthermore, educators' beliefs have a far-reaching impact on how they conceptualize the role of teaching and formulate strategies to address students' needs, aligning with Bandura's (1977) recognition of the influential role of beliefs in the realm of education.

With regard to writing, several studies have investigated the conceptions of teachers about this tool (Graham et al., 2022). Some of these studies have explored general educators' beliefs about their preparation to teach writing (e.g., Brindle et al., 2016; De Smedt et al., 2016), their self efficacy to teach writing (e.g., Brindle et al., 2016; De Smedt et al., 2016; Hsiang & Graham, 2016; McMaster et al., 2020; Rietdijk et al., 2018), their attitudes about teaching writing (Cutler & Graham, 2008; De Smedt et al., 2016; Dockrell et al., 2016), and their epistemological beliefs about writing development and knowledge (e.g., Brindle et al., 2016; Hsiang et al., 2020; McMaster et al., 2020; Ritchey et al., 2015). In summary, research indicates that teachers with a positive attitude toward writing, confidence in their teaching skills, and a sense of competence in writing are more inclined to teach writing and adopt evidence-based practices. Positive beliefs, particularly higher efficacy in teaching writing, are associated with the reported use of evidence-based practices (Gilbert & Graham, 2010; Graham et al., 2015). These teachers are also more likely to tailor writing instruction for weaker writers (Graham et al., 2001) and integrate writing to support students' learning (Gillespie et al., 2014). Furthermore, teachers' views on the importance of writing (Gillespie et al., 2014; Graham et al., 2015) and their theoretical approach to teaching writing methods (Graham et al., 2002) predict the frequency with which teachers report using various types of writing practices.

Based on the data from previous studies that demonstrate the relationship between conceptions about writing and instructional practices that addressed it, we decided to conduct a survey in the context of the University of Florence to analyze the following aspects: 1) what beliefs university staff have about writing, and 2) what type of writing practices they include in their classes. This survey has been conducted in the frame of the ORWELL project, has served to carry out a needs assessment on the use of writing in higher education in a specific context, and has motivated the creation of this book. The following is a report on how the study was conducted and the main results.

2. Writing Across-the-Curriculum: Case-analysis of the University of Florence

The survey was conducted from September 2022 to June 2023. To carry out this survey, we followed a three-step procedure.

Step 1: Identification of good practices

We conducted an exhaustive analysis of all the syllabus at the University of Florence with the aim of identifying those courses that explicitly included any writing-related activity in their curriculum. In this regard, a content analysis of the teaching guides published on the University's website was performed. When these teaching guides revealed an activity related to writing for epistemic purposes – meaning an activity not solely focused on transmitting knowledge through a written assessment – the respective instructor was identified and included in our database. A total of 267 teaching guides were analyzed during this step, of which only 74 (less than 30%) included practices related to writing in an epistemic manner.

Step 2: Contacting the instructors

In this phase of the process, we contacted all those professors through email who, based on our prior analysis of the teaching guides, were presumed to include activities related to epistemic writing in their course plans. In this email, we provided an overview of our outreach within the ORWELL project framework. Following this introduction, we sought their collaboration by inviting them to complete a questionnaire, allowing us to grasp their beliefs about writing. Additionally, we proposed an interview to further explore the writing-based teaching activity they had mentioned in the teaching guide. If the teachers responded to the email, we promptly thanked them for their participation and sent them the link to the questionnaire (see BOX: The Questionnaire). 37 University professors responded to the questionnaire and agreed to participate in the interview.

The Questionnaire

Background information:

Years of service in Higher Education: _____
Department in which you are employed: _____
Type of institution:
☐ University   ☐ Higher Education College
Gender:
☐ Male   ☐ Female   ☐ Non Binary
Age: _____

Importance of Writing:

Have you noticed differences between your current students' written work and students' written work when you became a member of staff?
☐ Yes   ☐ No
If the answer is yes, how would you describe the differences and what are the main reasons for these differences?
_____

There have been a number of recent claims in the media about the fact that students' proficiency in writing has decreased. Based on your experience, how valid are these claims?
☐ Valid   ☐ Not Valid
In your department, is more emphasis placed on teaching competence in writing than ten years ago?
☐ Yes   ☐ No
If the answer is yes, what are the reasons?
_____

**Perspectives about writing interventions
("learning to write" or "writing to learn")**

Writing is a soft skill and, therefore, there should be didactic activities aimed to promote it, regardless of the area of knowledge.
☐ Agree   ☐ Not Agree
Although writing is a necessary skill, it should be taught in stages prior to college.
☐ Agree   ☐ Not Agree
The teaching of writing should be frame in the area of languages:

☐ Agree   ☐ Not Agree
Writing activities should be embedded in the syllabus because they contribute to the acquisition of knowledge.
☐ Agree   ☐ Not Agree
Writing is not the most suitable activity to promote content learning in certain areas of knowledge (for example scientific subjects).
☐ Agree   ☐ Not Agree

Writing assignments:
Do you assess the writing competence of your students at the beginning of your course?
☐ Yes   ☐ No
If the answer is yes, please describe the activities employed:
_____

How often do you evaluate writing skills during the academic year?
☐ Daily
☐ Weekly
☐ Every few weeks
☐ At the end of each course
☐ Other (please specify): _____

What kind of writing activities do you employ to assess your students?
☐ Essay
☐ Summaries
☐ Dissertation
☐ Laboratory report
☐ Project report
☐ Research report
☐ Laboratory notes
☐ Reading notes
☐ Case studies
☐ Business plan
☐ Technical manual
☐ Creative writing
☐ Journalism activity
☐ Reflective journal
☐ Argumentative synthesis
☐ Other (please specify): _____

Developing student writing:

What kind of actions do you put into practice in order to promote the writing proficiency of your students?

☐ Include instructive comments when marking writing assignments
☐ Discuss students' writings with them
☐ Modeling students about how to write
☐ Offer revision sessions on writing
☐ Offer preparation sessions for writing tasks
☐ Refer students to Institution's Counseling or Writing Support Center
☐ Other (please specify): _____

Step 3: Interviews

In this phase, the professors were interviewed to gain a deeper understanding of the didactic activities they carried out related to writing. In doing so, a semi-structured interview guide was designed See BOX: The Interview). This interview served to identify writing practices that had genuine epistemic potential and that, ultimately, within one of the main actions of the ORWELL project, have been transformed into Flip-Cards and made publicly available on the project's website (https://orwellproject.eu/flip-and-write/).

Script for the semi-structured interview

Introduction and Presentation of the Project:

Good morning/afternoon. First of all, we would like to ask if you are opposed to the recording of the interview. The recording will only be viewed by the ORWELL team, in order to have a record of your responses for potential coding purposes.

First and foremost, we would like to thank you for your collaboration on the Erasmus+ KA02 ORWELL project ("Online Reflective Writing in Higher Education and Lifelong Learning"), co-financed by the European Union. ORWELL is coordinated by the University of Florence, in collaboration with: Malmö University, University of Cantabria, WIDE Services, and EUDA. As we have already communicated in the email, one of the project actions involves collecting best practices regarding the use of writing in the university context. Our goal is to create a database of different ways in which writing can be used

to promote learning and reflection in different university disciplines. This is why we contacted you and why we are conducting this interview. If you agree, information about your writing activities will be published on the project's website, in the form of a flip-card. If you are ready, let's begin with the questions.

Questions related to the activity found in the syllabus:

The analysis of the syllabus for one of your courses (mention the course) has allowed us to identify that you use writing in the following way (quote what is mentioned in the syllabus, always in relation to assessment practices).

- Why do you use writing as a method of assessment?
- Is it the best writing activity you have, or do you prefer that we refer to another activity?
- First of all, we would like to know more about this activity.
- Do you use online tools to support writing competence?
- Do you have a rubric for assessing the quality of written products?
- If you use a rubric, do you provide it to students before assessment so they know the criteria and how it will be used?
- Do you believe that this activity has a positive impact on the writing skills of your students? If the answer is yes, why do you think so?
- What difficulties have your students encountered when facing this task?
- Is this a task that you use to assess the educational content of your course and/or the level of writing competence of your students?
- Are there pedagogical activities during the course aimed at improving writing skills?

Questions related to other possible activities:

At this point, we would like to know if you conduct other writing-related activities in class that are not covered in the syllabus. If the answer is affirmative:

- What are the educational objectives of these activities?
- What methodology do you use to carry them out?
- How do you assess the learning outcomes for students?
- What difficulties do you encounter in implementing them?
- Do you think students enjoy engaging in this type of activity?
- Do you consent to the dissemination of data related to this activity/activities within the project?

The interview is concluded. Do you have any questions about the project or other matters?
Thank you again for your participation.

The following figure illustrates the process flow we have followed to conduct the survey.
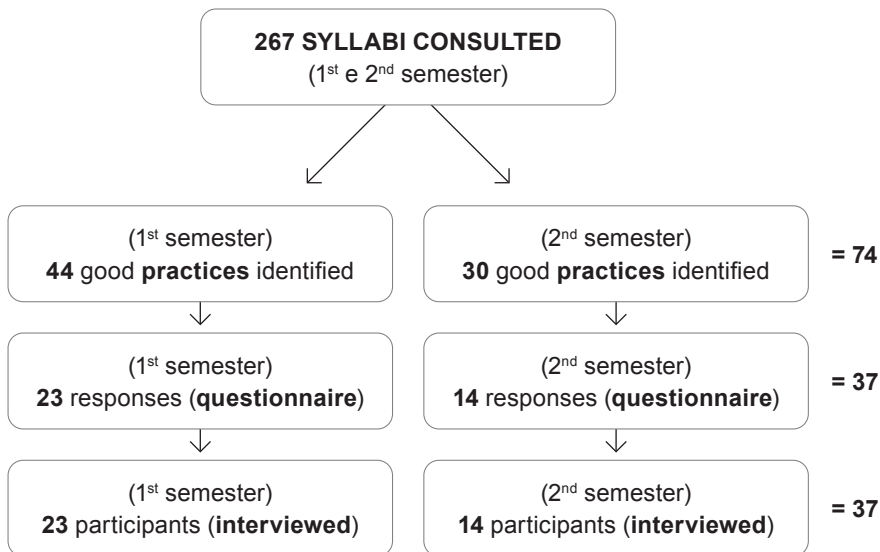
Figure 1. Flow of the process of analyzing syllabi, collecting questionnaires and conducting the interviews

2.1. Main Results of the Survey

2.1.1. Data from the analysis of the syllabi
The examination of teaching guides revealed that the way writing activities are embedded in courses can be greatly improved. Firstly, writing activities were not well aligned with evidence-based theories of writing. Secondly, the identified writing activities were predominantly associated with the assessment process and were not

consistently integrated into the regular lesson plans. This pattern was particularly pronounced within the realms of social sciences and humanities, where the concentration of writing activities was observed. An interesting observation from the analysis is the lack of references to digital tools to support writing activities, highlighting a potential gap in the exploration and incorporation of technology-enhanced pedagogical strategies. This collective insight from the analysis of teaching guides signifies an opportunity for universities to revisit and enhance their strategies for incorporating writing activities across various disciplines, with a particular emphasis on leveraging digital tools to enrich and diversify the writing experience for students.

2.1.2. Data from the analysis of the questionnaire

The answers to the questionnaire provided valuable insights about the writing beliefs and teaching practices of University instructors. The average age of the participants was 50.43 years, with a nearly equal distribution of 48.6% women and 51.4% men. Notably, 60% of participants observed differences in current students' written production compared to those during their previous service period, citing an increase in grammatical and syntactic errors and a diminished ability to write texts. Despite the importance of writing competence, 85.7% of respondents indicated that there is no increased emphasis on teaching writing in their Department compared to a decade ago. However, the majority of participants recognize writing as a cross-curricular skill (80%) and agree that it should be taught in stages before college (91.4%). 94.3% of professors do not assess students' initial writing skills before the start of the course. Regarding the frequency of reading or evaluating student writing, 54.1% reported doing so at the end of each course. In terms of assessment methods, participants utilize various forms, including essays, dissertations, final theses, and reading notes. When it comes to helping students improve their writing, teachers tend to provide instructive comments and to engage in discussions with students.

2.1.3. Data from the content analysis of the interviews

The interviews shed light on the fact that University professors often do not integrate writing activities into their courses based on a conscious understanding of the epistemic potential of this tool. Instead, their inclusion of such tasks is often driven by intuition or informed by their accumulated teaching experience, revealing a pragmatic acknowledgment of the positive impact on student learning. However, what emerges from the interviews is the absence of a deliberate pedagogical awareness concerning the specific role that writing plays in the intricate processes of learning and knowledge transformation. While professors may recognize the practical benefits of incorporating writing, there seems to be a lack of systematic consideration regarding the strategic utilization of writing as a pedagogical tool for deeper understanding, critical thinking, and knowledge construction among students. This suggests a potential area for further exploration and development in pedagogical training and awareness programs within higher education.

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Part II.
Promoting Life Skills
through Writing Activities:
The Personal Area

The first months of C.'s time at university pass calmly. C. has moved to a university residence and invests more time and effort in discovering what it means to be a university student in terms of social and leisure activities than in studying. Let's say that their daily routine involves attending lectures and brainstorming new variations of playing ping pong in the residence hall. However, an unexpected event disrupts their dynamic of tranquility and enjoyment.

One morning, C. attends a lecture in one of those subjects that, at first glance, seems to have been included in the curriculum without much thought. One of those courses where demands are low, as are the practicality of the contents. Of course, all of these are assumptions made by C. after listening to the professor introduce the course and learning that the evaluation would be at the end of the semester through an oral exam. What C. could not anticipate at that time is that this professor would enroll in training on new pedagogies in the university context and, as a result, decide to change the script of their subject. With this turn of events, C. discovers on that peaceful morning that she must face an unexpected task. This task is titled "devil's advocate" and consists of the following.

The professor suggests selecting a topic related to the course content, on which there are various theories or positions. First, students must declare in writing what their opinion is on the matter, substantiating it with arguments and responding on a numerical scale from 1 to 10 how

committed they feel to that perspective. Next, they have to choose a theory contrary to their own and "disassemble" their previous argument, seeking to find limitations and logical errors in thinking. This process must occur in two phases. In the first phase, students have to elaborate this exercise for themselves, and in the second phase, the activity aims to write two informative texts presenting the perspectives objectively, noting strengths and weaknesses. After the second phase, they have to respond again to the numerical commitment scale and explain whether they maintain their position or decide to move along the continuum. They also have to monitor their emotions throughout the process and explain what mechanisms or compensatory strategies they use when negative emotions hinder progress in the task. Finally, they have to assess what they have learned in terms of content.

C. panics. It's the first time she has been asked to do such a task. She has their opinions very clear, "What's the point of testing them?" "And since when does one have to go back to the beginning of activities to change their answers?" "Most things in life happen sequentially, don't they?" "But, above all… when does a student have to express how they feel about doing a task?" C. doesn't understand anything, so she decides to try her luck and ask the professor if it would be possible to only do the final oral exam as outlined in the syllabus. The professor responds negatively and justifies it by saying, "This activity will help you self-regulate, develop cognitive flexibility, and manage your negative emotions in the face of environmental demands." C. now truly doesn't understand anything.

3. Self-Regulation

1. What is self-regulation according to The LIFECOMP framework?

Self-regulation is a capacity that enables us to modify and control our responses in our environment, ensuring they are not mere unconscious reactions to stimuli. Self-regulation is a cyclical process that involves three main steps: (a) establishing a desired state by creating action plans, setting goals, and anticipating future outcomes; (b) comparing the current state with the desired one through self-monitoring and cultivating self-awareness; and (c) acting to modify the current state if it does not match the desired one. The essence of self-regulation lies in restraining the inclination to respond to stimuli with automatic reactions (e.g.: learned habits, innate responses, or impulsive actions).

Self-regulation plays a crucial role in active engagement in learning, including learning how to learn, and is essential for developing other key competences. For instance, alongside self-efficacy (belief in one's capacity to achieve goals), self-regulation is a vital component of the Entrepreneurship competence, encompassing the ability to create cultural, social, or economic value.

According to the LIFECOMP framework, the three descriptors associated with self-regulation are the following:

Awareness and expression of personal emotions,
thoughts, values, and behavior

Recognizing emotions, thoughts, and values is crucial for personal growth, fostering adaptability and an openness to learning. This involves self-awareness in emotional intelligence, acknowledging and perceiving one's emotions, thoughts, and physiological responses. Understanding how these factors influence behavior across life domains is essential. Seeking feedback and adopting introspection aids in developing self-awareness, identifying strengths, virtues, and limitations. Robust self-awareness supports effective self-regulation, facilitating the prevention of undesirable outcomes that can originate from automatic reactions. It is vital for informed decision-making, personal well-being, and aligning values with career goals.

Understanding and regulating personal emotions, thoughts,
and behavior, including stress responses

This descriptor focuses on self-management, highlighting the understanding of how emotions, thoughts, and values shape behavior and the ability to regulate them. Individuals need to consistently redirect their emotions, thoughts, and responses, employing strategies to reduce emotional strains. Managing feelings is crucial for personal development and openness to learning. Attention and emotion regulation strategies improve performance in personal, educational, and professional settings. Both down-regulation and up-regulation strategies positively impact personal well-being, contributing to coping with stress and conflicts for trust-based relationships. The ability to delay gratification, essential for academic performance, involves cultivating a perspective beyond immediate stimuli. Effective self-regulation requires identifying and adapting suitable strategies to specific tasks and situations.

Nurturing optimism, hope, resilience, self-efficacy, and a sense of purpose
to support learning and action

This descriptor emphasizes the importance of maintaining a positi-

ve life perspective and a sense of purpose. It highlights the cultivation of hope, optimism, resilience, and self-efficacy. Hope is presented as a motivational force for progress and the ability to envision alternative paths to goals. Optimism involves fostering positive expectations for present and future success. Resilience is the capacity to positively cope with challenges, uncertainty, conflicts, and positive changes. Self-efficacy is the positive belief in one's ability to successfully complete tasks, correlating with performance and perseverance. Nurturing a sense of purpose involves having long-term goals aligned with beliefs and values, enhancing motivation for meaningful life objectives beyond constraints, and contributing to long-term personal well-being.

2. Self-regulation in the University context and the role of writing

The analysis of emotions has predominantly focused on identifying emotional responses derived from social interactions within educational institutions. However, the University context requires students to face numerous challenges and academic tasks of different nature that can negatively impact their emotional experience, motivation and implementation of learning strategies (Alonso-Tapia et al., 2020). At the same time, these challenges provide an opportunity to promote a development in self-regulation as a life skill. This is why, as educators, we must understand how emotional regulation strategies influence self-regulation strategies and the achievement of our students' learning goals (Panadero, 2017).

Of notice, in this chapter we focus on self-regulation of emotions and motivation, which is associated with the larger framework of self-regulated learning. Self-regulated learning can be defined as one's ability to understand and control one's learning environment. It is a process that involves using cognitive, metacognitive, behavioral, motivational and affective processes to address a learning situation and persevere until successful (Alonso-Mencía et al., 2020). While current approaches to learning seem to discuss self-regulation of meta-

cognitive, cognitive, emotional, motivational and behavior processes within one cohesive approach, the LIFECOMP framework distinguishes self-regulation of emotions and motivation (included in the personal area) from managing learning, which covers self-regulation of metacognitive, cognitive and behavioral processes (included in the learning area and discussed in chapter 11).

In simple terms, a self-regulated learner is a student who, in managing their learning process, can establish practical goals related to tasks, assume accountability for their learning, and sustain motivation. Additionally, it is supposed that self-regulated learners possess the ability to employ a diverse set of cognitive and metacognitive strategies. These students demonstrate adaptability by tuning their approaches to effectively address various academic tasks. This adaptability extends to their capacity to monitor how they employ strategies and, when needed, make adjustments to align with changes in task requirements (Zimmerman, 2000). Emotions are certainly ubiquitous in learning environments, but most of the attention has generally been devoted to test anxiety. However, when studying we may feel bored, frustrated, or enthusiastic, all emotions with likely significant effects on our interest, motivation, persistence and strategic approach to learning tasks. The emotions we experience in achievement activities, such as studying, or achievement outcomes, such as passing an exam, are defined as "achievement emotions" (Pekrun, 2006). Besides being negative (e.g., rage) or positive (e.g., happiness), achievement emotions can be categorized by level of physiological activation: activating achievement emotions (e.g., enjoyment or anger) or deactivating achievement emotions (e.g., relaxation or boredom). Moreover, according to the control-value theory of achievement emotions (Pekrun, 2006), such emotions are induced by two proximal determinations: how much we feel we can control the learning environment (control appraisal) and how much we subjectively important the outcome of the task is (value-appraisal). For instance, hopelessness, a deactivating emotion, is induced by a low level of perceived control. If the activity is highly valued, hopelessness can become anxiety.

The self-regulation of emotion and motivation involves intentional cognitive and behavioral efforts by students to manage emotions that arise during the learning process. These emotions can impact a student's motivation for achievement, prompting the use of motivational regulation strategies when faced with learning difficulties (Wolters et al., 2011). Confronting challenges often elicits negative emotions that students must navigate to persist in the given task. In pursuit of their academic goals, students employ strategies to regulate their emotional responses. However, the way students handle negative emotions varies based on their individual volitional and motivational orientations (Alonso-Tapia et al., 2014). Additionally, there are instances where students need to directly self-regulate their motivation by consistently refocusing on their goals (and making them more "controllable"). Consequently, some scholars view emotional regulation as a means of regulating motivation. Emotions play a mediating role in influencing goals, beliefs, learning behaviors, and their interactions, particularly in the face of challenges or failures during task execution (Ben-Eliyahu, 2019). Therefore, emotions are intricately connected to key elements of learning self-regulation, including interest, motivation, and learning strategies, all of which have demonstrated predictive capabilities for academic performance (Asikainen et al., 2018).

At the same time, the influence of emotions appears to be contingent on students' goal orientations. For instance, Boekaerts (2011) have explored the role of goals in learning self-regulation, suggesting that students follow distinct self-regulation paths based on the goals they pursue, influenced by emotions triggered by the task. According to this author, when a students face a specific task, two paths may emerge: the mastery path, driven by the desire to learn or improve skills, activated by positive emotions aligning personal interests with task objectives; and the wellbeing path, motivated by the desire to avoid ego damage, activated when negative emotions arise from a perceived disconnect between personal goals and task objectives. These paths are not fixed, allowing students to shift between them based on internal and external factors. Strategies for emotional and

motivational regulation enable transitions, influenced by factors like task interpretation, social reinforcement, or teacher intervention (Boekaerts, 2011).

The skill of regulating emotions is pivotal in the learning process. Emotion regulation (ER) entails purposeful processes aimed at influencing the intensity, duration, and nature of emotional experiences. Boekaerts (2011) defines ER in the classroom context as the ability of students to harness their emotions as a source of energy while adjusting aspects of the emotional experience that may hinder the pursuit of important goals. The efficacy of self-regulation varies among individuals and can be enhanced through practice. For instance, student-centered learning environments and the level of support students perceive from the university seem associated with their self-regulation and self-efficacy (Duchatelet & Donche, 2019). Writing can be a great tool to learning environments more student-centered.

Using writing as a tool for externalizing thoughts can also aid in externalizing, understanding, and reinterpreting the emotional states that one encounters when confronted with a task. Writing, therefore, facilitates self-regulation strategies by enabling the monitoring of internal processes and fostering personal awareness. Indeed, there is evidence supporting the contribution of this tool to the development of emotional regulation skills (e.g., Santoso et al., 2020). There are many writing formats that can contribute to emotional regulation and, consequently, to the regulation of learning. In this chapter we are going to focus on diaries as a writing modality.

3. Activity: Writing diaries as a method to foster self-regulation of emotions

Pedagogical foundations

When we think about a diary, our minds automatically conjure the image of a teenager recording the most exciting events of their life. However, in the field of psychology, they are widely used tools

for maintaining a reliable record of day-to-day events. For example, in the field of developmental psychology, diaries are used to record the progress of the children in various competencies or skills, such as language development (e.g., Mervis et al., 1992). In clinical psychology, diaries are widely used to assess the emotional experiences of the patients (e.g., Ebner-Priemer & Sawitzki, 2007), and in the field of education, diaries provide data on how the learning processes of the students unfold (e.g., Fabriz et al., 2013).

Diaries and journals have traditionally been regarded as valuable tools for monitoring the reflective capacity of higher education students, fostering the development of their abilities, values, and dispositions in academic disciplines. Recent trends show a growing interest in using journals as part of a reflexive metacognitive strategy, helping students to regulate their learning strategies, including critical thinking and inquiry-based skills (Park, 2003). Additionally, there is a tendency to link these strategies with autobiographical approaches, highlighting the importance of emotional issues (Harrison & Miller, 2001). Research in this area indicates that facilitating opportunities for resilience-building and self-theory development has allowed students to realize that successful learning is not solely dependent on acquiring knowledge but is also influenced by attitude, self-esteem, and the adaptability of their own ideas (Gleaves et al., 2007).

Regarding self-regulation, writing diaries can contribute to this competence in various ways. Due to its format and construction, a diary serves as a personalized support tool that documents the learning journey. Additionally, it functions as a data collection method that adapts well to diverse learning environments and different disciplines and can be easily embedded within courses. Furthermore, writing diaries allow for collecting information at all stages of a self-regulated process. In other words, they enable recording states and variables before tackling a learning task, during its execution, and after it has been completed. In conclusion, diaries can support self-regulation in three ways: 1) by amplifying the effects of self-regulated learning training through transfer monitoring; 2) as written records, diaries

can enhance the individual competence in self-regulated learning by fostering metacognitive monitoring processes; 3) diaries can elevate the students' motivation to learn by acknowledging small daily improvements in skills (Schmitz et al., 2011). This activity focuses on how writing diaries can contribute to the latter aspect of self-regulation, specifically concerning motivational and emotional states.

Objectives of the activity
1. Acquiring the skill of maintaining a writing diary with a specific emphasis on emotions.
2. Promote metacognitive awareness and self-regulation through the writing of a diary.
3. Promote motivation and self-efficacy regarding the learning process.

Methodology
This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of knowledge of History. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this session, students are introduced to the theoretical aspects of diaries in an academic setting, along with a concise overview of their advantages.

Session 2: This second session will be focused on modeling how to create a writing diary focused on emotional states and motivations related to the learning process. To carry out this modeling exercise, students will be presented with a series of statements extracted from the Emotion and Motivation Self-Regulation Questionnaire (EMSR-Q; Alonso-Tapia et al., 2014). These statements correspond to the thoughts and emotions of students who have faced a specific learning task and have undergone a think-aloud process during the task. The teacher will explain to the students that internal speech often takes the form of verbal instructions, typically emerging in challenging situations during a task, serving to regulate emotions, thoughts, and

behavior. Being that, by externalizing or reporting internal language, we can discern the emotions elicited by a task and the strategies a student employs to regulate them and accomplish the intended goal. In this regard, the teacher will read the following statements (items from the questionnaire):

Avoidance-oriented self-regulation:
1. This is not worth my time... Let's try to finish it as soon as possible.
2. This task is a complete loss of time!
3. These instructions are so long! They only make me confused.
4. What a boring task! Let's see if I finish and leave.

Performance-oriented self-regulation:
1. I'm dead tired... Well, I had to go on to pass.
2. I must go on... if I do not, I'll fail.
3. What a mess! Well... Go on... if not you won't pass the exam.
4. What a tiring task!... But I have to pass... Let's continue.

Negative self-regulation of Stress
1. What a stressful task! I'm doing it very badly... It's so difficult!
2. This is so difficult... I am not going to be able to make it right.
3. I am not made for doing this. If I could, I would give it up.
4. I am getting nervous... I'm not able to do it.

Positive self-regulation of motivation
1. This is going O.K.!... It seems that I understand it.
2. Calm down... "Do not hurry, do not stop"... You'll get it.
3. Well... It seems that every time I do it better... I'm progressing...
4. How interesting! It seems to me that I understand it.

Process-oriented self-regulation
1. How difficult, but how interesting! ... I have to understand how to do it.
2. This is not right...I'm going to check it step by step.

3. How complicated!... Well, I'll go on... it is important to learn how to solve it.
4. Here was the mistake! Great! Next time I will know how to do.

During the process of reading the various items, the teacher will elucidate the reasoning process for categorizing them into different dimensions:
- Avoidance-oriented self-regulation;
- Performance-oriented self-regulation;
- Negative self-regulation of stress;
- Positive self-regulation of motivation;
- Process-oriented self-regulation.

Session 3: This session will focus on having students practice creating a diary, with an emphasis on emotional and motivational aspects. They will be asked to complete a task of a certain complexity, framed within the History course curriculum. Students will need to write down everything they think and feel in diary form and organize their thoughts and emotions using the categories related to the self-regulation processes discussed in the previous session. Therefore, they will have to 1) create a narrative of what they think and feel during the task and 2) perform the subsequent classification exercise. Students will be asked to apply this procedure independently when preparing for the course exam.

Example of a diary excerpt that could be presented to students

Learning Diary: Exploring the Byzantine Empire
Date: January 18, 2024

Objective: Understanding the Decline of the Byzantine Empire

Today the professor has asked us to elaborate a research paper on the Byzantine Empire. When he asked us to do it I felt anxious because I do not feel capable of doing these research exercises alone. I don't know where

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to start, especially because there are a thousand documents on the Internet that talk about the same subject. It is stressful for me to integrate the information.

However, when I started reading about the Byzantine Empire, my curiosity was aroused. In fact, the expectation of discovering forgotten stories and unraveling the threads of this empire's demise heightened my impatience to begin this historical expedition.

The task of research led me to a plethora of primary sources, ranging from Byzantine chronicles to firsthand accounts of the empire's decline. Engaging with these documents was akin to stepping back in time, evoking a sense of awe at the resilience of the human spirit amidst political upheaval. It is a bit confusing to read different sources, so I decided to synthesize the information with a concept map.

The accounts of political turmoil within the Byzantine Empire stirred a mix of emotions. Empathy arose for the citizens who witnessed the once-mighty empire crumble. Simultaneously, discomfort settled in, contemplating the complexities of power struggles and the human cost of political maneuvering. Surprisingly, the lessons from the Byzantine Empire felt strikingly relevant to our modern society. The echoes of power dynamics, religious tensions, and the intricacies of governance reverberated through time. This connection sparked a renewed concern for the importance of learning from history to navigate our contemporary challenges. I have found that I have progressed in my understanding of ancient historical processes and their connection to elements of the present day.

As I conclude this day's exploration, I find myself standing at the threshold of a vast historical landscape. The emotions evoked – curiosity, anticipation, awe, empathy, and concern – have woven a rich tapestry of understanding. The decline of the Byzantine Empire is not merely a distant chapter in a history book; it is a living testament to the enduring human experience, a narrative that transcends centuries and beckons us to learn, reflect, and grow.

Exercise of identification of narrative elements linked to self-regulation:
- "I felt anxious because I do not feel capable of doing these research exercises alone" → Negative self-regulation of Stress
- "It is a bit confusing to read different sources, so I decided to synthesize the information with a concept map" → Process-oriented Self Regulation
- "I have found that I have progressed in my understanding of ancient historical processes and their connection to elements of the present day" → Positive Self Regulation of motivation.

Evaluation

The writing diary created in session 3 will be assessed in terms of metacognitive awareness, emotional self-regulation, motivation and self-efficacy, according to the verbalizations included by the students in their writings. Additionally, students will need to submit the diary they have developed during exam preparation, which will also be evaluated and contribute to the final course grade.

Digital tools for creating writing diaries

Blogger (https://www.blogger.com/about/) is a web-based platform that allows users to create and manage their own blogs. It was created by Pyra Labs, which was later acquired by Google in 2003. Blogger provides a simple and user-friendly interface for people to publish their thoughts, share information, and engage with online audiences through the medium of blogging.

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4. Flexibility

1. What is flexibility according to The LIFECOMP framework?

In the current ever-changing global environment marked by volatility, uncertainty, complexity, and ambiguity, citizens must adeptly navigate uncertainties and adjust their behaviors to evolving conditions. Life is characterized by developmental changes and disruptive events, spanning various domains such as learning transitions, professional changes, family dynamics, and external environmental shifts. Life paths are much more diverse and much less predictable than they were decades ago. In this socio-historical moment in which we live, evolution is encouraged and academic institutions seek to train citizens capable of adapting to a changing world. Flexibility, beyond adapting to new situations, entails making adjustments, embracing complexity, contradictions, and uncertainty, and being willing to tackle tasks with incomplete information.

According to the LIFECOMP framework, the three descriptors associated with flexibility are the following

Readiness to review opinions and courses of action
in the face of new evidence
This descriptor highlights the importance of staying informed, adapting to change, and adjusting actions based on new information.

It emphasizes intellectual curiosity and openness to exploring different perspectives on a subject. Individuals are encouraged to recognize that no single strategy consistently guarantees positive outcomes, and the effectiveness of approaches should be assessed in response to evolving situations. The descriptor stresses that reassessing opinions reflects adaptability, not a lack of determination. It underscores the need for individuals to reflect on feedback, both positive and negative, and make necessary adjustments to personal plans.

Understanding and adopting new ideas, approaches, tools, and actions in response to changing contexts

This descriptor highlights the importance of openness to new ideas and adaptability in navigating uncertainty. It encourages individuals to generate alternative solutions and avoid persisting in strategies that prove ineffective. In the digital age, flexibility extends to enhancing digital skills and capitalizing on development opportunities presented by technologies like artificial intelligence and virtual reality. Engaging in data-centric societies requires citizens to manage personal data while protecting privacy. Additionally, flexibility is crucial in addressing the challenges of climate change, necessitating the ability to anticipate, respond, mitigate consequences, and embrace opportunities for lifestyle adjustments with a global awareness.

Managing transitions in personal life, social participation, work and learning pathways, while making conscious choices and setting goals

Flexibility in career management involves continuous training for diverse employment contexts, meaningful goal setting, and effective decision-making for successful transitions. It necessitates proactive envisioning of future options, employing relevant strategies, and managing indecision and anxiety. In the 21st Century, non-linear learning and career paths demand frequent job changes, identification of growth opportunities, and personalized lifelong learning. A cross-sectoral career education approach involving diver-

se stakeholders enhances career management skills acquisition. The cyclical career development process includes exploring opportunities, self-awareness, decision-making, goal setting, and planning transitions. Proactively seeking opportunities, continuous learning, skill acquisition, and adapting to changes give individuals a competitive edge, emphasizing coping with ambiguity and setting, planning, and monitoring goals.

2. Flexibility in the university context and the role of writing

University education reflects the complex and swiftly changing dynamics occurring outside traditional classroom settings. The range of educational possibilities is growing, aiming to adapt to the demands of an unpredictable job market. Some training programs are becoming obsolete, and particular professions are dwindling as tasks become automated. At the same time, the COVID-19 pandemic has shown that abrupt shifts in the course of events can occur, not only transforming our daily lives but also reshaping the educational landscape. For instance, the online education during the lockdowns in response to the pandemic have demonstrated the importance of students taking responsibility for their learning within the virtual learning environment (Yildiz, 2022). This dynamic of constant change and adaptation has a psychological cost. Numerous research studies have shown that university students experience higher levels of stress compared to their non-university counterparts of the same age (Andrews & Wilding, 2004; Eisenberg et al., 2007). Furthermore, over the last decade, a growing body of research has indicated an increasing prevalence of mental health issues among university students, when compared to previous generations (Galatzer-Levy et al., 2012). In this context, cognitive flexibility becomes a protective element against stress responses. In fact, cognitive flexibility has a mediating role in emotion regulation (Arici-Ozcan et al., 2019). But what do we mean when we talk about cognitive flexibility?

Cognitive flexibility is one component of what is known as executive functions. Executive functions (EF) are widely recognized as a set of cognitive skills essential for regulating thoughts and actions in goal-directed activities (Blair & Peters, 2003). Various operational definitions exist in the literature, but there is general agreement on the core components of EF (Diamond & Lee, 2011). These components include working memory, inhibitory control, and cognitive flexibility (Magalhães et al., 2020).

Cognitive flexibility was initially defined by Spiro et al. (1988) as the ability to spontaneously restructure one's knowledge in adaptive response to changing situational demands. Subsequently, several authors defined it as the awareness that one individual has about alternative ways and options, the adaptability to new conditions, and the perception of efficiency in flexible situations (e.g., Martin & Rubin, 1995). Stevens (2009) characterized cognitive flexibility as the ability to generate alternative solutions and switch thoughts, while Stahl and Pry (2005) described it as a regulation process shaping semantic relationships. Barbey et al., (2013) explained it as the interaction of multiple mechanisms to respond to diverse demands. The acquisition of cognitive flexibility skills, crucial for tasks such as planning, organization, and problem-solving, is believed to take place in the early stages of development (Crone et al., 2004). Students' development of cognitive flexibility and the acquisition of information structures are fostered by exposing them to the same information in various formats and for diverse purposes within flexible learning environments (Spiro et al., 1992). According to these definitions, cognitive flexibility in learning environments refers to the capacity to select the most suitable alternative learning strategies, problem-solving skills, and diverse approaches for finding solutions, adapting to various subjects and situations (e.g., Alper & Deryakulu, 2008).

Several studies and researches have shown the benefit of increasing the cognitive flexibility of students, taking into account its relationship with variables related to academic performance and emotional well-being of university students. Studies conducted with college stu-

dents have revealed that enhanced cognitive flexibility is linked to decreased anxiety levels, increased motivation, and success in training programs (Timarova & Salaets, 2011). Moreover, it has been associated with positive perceptions of group work (Myers et al., 2009) and bilingualism (Teubner-Rhodes et al., 2016). These findings, coupled with indications that cognitive flexibility influences learning, language development (Jacques & Zelazo, 2005), and mathematical skills (Bull & Scerif, 2001), suggest a potential correlation between cognitive flexibility and academic success within educational contexts. There are many ways to contribute to students' cognitive flexibility (e.g., the problem-solving method, see Krems, 1995), but in this chapter we will address the role of writing as a facilitator.

Some researchers, such as Graham et al. (2012) and Graham & Perin (2007), identify flexibility as a characteristic of proficient writers. In particular, Graham and Perin (2007) stated that skilled writers can adapt their writing flexibly to the context in which it is situated. Writing involves a complex and demanding process that requires individuals to harmonize diverse cognitive skills and knowledge sources. This entails setting goals, solving problems, and strategically managing memory resources, as highlighted by Flower and Hayes (1981) and Hayes (1996). Different models identified several individual differences that impact students' writing proficiency, including factors such as knowledge, skill, and working memory capacity (e.g., Kellogg, 2008), vocabulary knowledge (Graham & Perin, 2007) or knowledge of the writing process (Saddler & Graham, 2007).

On the other hand, various researchers have attempted to analyze the linguistic characteristics of texts (mainly essays) produced by expert writers (e.g., Crossley et al., 2011). In general, past research indicates that more advanced writers, as identified by both essay scores and higher grade levels, typically generate longer essays with characteristics that reflect sophisticated lexical, syntactic, and rhetorical choices (Allen et al., 2016). However, more recent literature has shown that writing cannot be reduced to a set of linguistic properties

(e.g., Allen et al., 2014). Writing proficiency is, in part, connected to students' understanding of various writing styles and their ability to adapt the characteristics of their essays based on the specific context of the writing task. This implies evaluating the context of the writing task and dynamically employing diverse linguistic tools, considering the constraints and requirements that are imposed by the environment. For instance, writers may consider writing a purely expository text, or embed the expository text within a narrative frame that helps the reader to better contextualized informative content to real-life scenarios. In other words, expert writers can flexibly navigate across genres and subgenres and may even consider writing hybrid texts. In this framework, writing flexibility is defined as an individual's capacity to adapt specific components of their writing to craft more effective text (Allen et al., 2016). Thus, cognitive flexibility and writing may be closely related. But how can the former be developed through a didactic intervention based on the latter? Here is an example.

3. Activity: Writing in ill-structured situations

Pedagogical foundations

The Cognitive Flexibility Theory (CFT), as highlighted by Spiro et al. (1988), underscores the benefits of embracing multiple perspectives. The use of various viewpoints is geared towards enhancing the transferability of knowledge. It suggests that students should engage with concepts at different times, within diverse contexts, for different purposes, and in varied roles. CFT underscores the importance of adapting to the situation by assembling schemas based on previously learned concepts, rather than simply retrieving precompiled generic knowledge structures rigidly imposed on the specific case at hand. Being that, the CFT focuses on the intricacies of teaching and learning in complex and ill-structured domains; that is, those areas of knowledge in which open problems and different perspectives predominate. Complex and ill-structured problems present multiple

solutions and involve uncertainty about the necessary concepts, rules, and principles for resolution (Jonassen 1997).

Funke (1991) defines complex and ill-structured problems based on certain attributes. Intransparency, for instance, refers to situations where only information about symptoms is accessible, and variables are either directly observable or necessitate selection by the problem solver due to the multitude of variables. Another characteristic, Polytele, indicates the presence of multiple goals that may potentially clash. Situational complexity manifests as intricate connectivity patterns between variables, and time-delayed effects underscore the absence of immediate consequences for every action. These problems range across a spectrum from ill-structured to well-structured, with the level of definiteness contingent on the effectiveness of available problem-solving techniques. Well-structured problems, in contrast, exhibit clear criteria for recognizing solutions, a mechanized process for application, at least one problem space representing successive states, a structure facilitating representation of attainable state changes and considerable moves, a mechanism for knowledge acquisition, and basic processes demanding practical computing resources and accessible information (Simon, 1973).

In all fields of knowledge ill-structured problems can be assigned to students. Grappling with intricate problems necessitates the simultaneous utilization of various concepts. Yet, the problems themselves are characterized by patterns or combinations of concepts that are not uniformly employed or required across all instances (Rhodes & Rozell, 2017). But even outside of academic contexts, many of the conflicts we face are far removed from logic and simple problem solving. Given that problem-solving experiences in everyday life are often unstructured, complex and multifaceted, it is essential to provide learning experiences anchored in the real world. For instance, authors as Wright (2001) propose that to boost students' problem-solving proficiency, problems should be introduced using real-life scenarios, providing students with the opportunity to evolve as authentic problem solvers. This concept aligns with situated learning and con-

text-based learning, emphasizing the significance of learning in genuine contexts through practical activities. Taking into account the characteristics of ill-structured problems and the need to introduce real-life situations into educational contexts, we propose an activity in which journalism students will have to address the following challenge: write a story on mental health, integrating the perspectives of different people.

Objectives of the activity
1. Encouraging cognitive flexibility through writing.
2. Promoting perspective adoption through unstructured problem solving.

Methodology

This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of journalism. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this first session, students are presented with the following scenario: they have just joined a magazine that has a section dedicated to health, both psychological and physical. The magazine's editor-in-chief gives them the following assignment: to create a report on the issue of eating disorders. To create this report, they must include the testimony of an individual suffering from anorexia, the family's perspective, and provide theoretical framing of the issue. This should encompass a purely medical viewpoint as well as a psychological and social perspective, considering socio-cultural variables such as body image and beauty standards. Students will be informed that they can obtain testimonials either through online research or, if they have people in their environment who face this problem, through direct interviews. Students will begin working on the project in this session and will have one week to progress autonomously. After that time, the second session will take place, in which they will work in the classroom. All writing should be done in a word processor that allows students to work with change control.

Session 2: This will be a classroom work session. The teacher will ask for progress on the report and will propose the following situation to the students: The editor of the magazine they work for proposes to change the focus of the report. They consider that it is convenient to open the frame and include the case of bigorexia, a problem that affects more men than women. In this regard, they will need to adjust the writing style when addressing the issue of bigorexia, as the message will be more directed towards men. In light of this, students will be asked to modify the conceptual framework to incorporate this disorder, to seek a testimonial from a person who experiences bigorexia and to adapt the writing style when probably addressing a female or male audience depending on the disorder. The students will use this session to incorporate the requested modifications. Students will have to incorporate the changes in the initial document and make them visible with the "change control" option. Afterwards, they will have another week of independent work to finalize the report.

Session 3: This will be a group reflection and discussion session. Students will have to answer the following questions: what strategies did they follow to integrate the information coming from the different sources/testimonies, what actions did they take when the information was contradictory, how did they change their behavior when the supposed boss introduced a new unexpected task and how did they act to adjust to the new demand?

Evaluation

The students' final report will be evaluated according to variables of linguistic and stylistic correctness, in accordance with the criteria of journalistic language. Likewise, the teacher will evaluate the capacity of cognitive flexibility through the visible changes in the documents, comparing the last version of the report with the first one in which the introduction of bigorexia was not contemplated. In addition, the teacher will evaluate the responses in the reflection of the third session to assess their problem-solving skills and their ability to adopt new perspectives.

Digital tools for writing in ill-structured situations
GENERATIVE AI (e.g., ChatGPT, Bard, ...)

Generative AI tools such as ChatGPT or Bard can assume an immensely valuable role in providing versatile writing assistance, but only if prompts are well-defined and goal-oriented. Students may write a text and then provide it to a Generative AI tool and ask it to adapt the text to a specific audience ("transform this text for a 10-year old readership"; "re-write this text with a narrative structure"). Students can then compare the AI-generated text with their original text, analyse differences and evaluate the AI-generated text in terms of reliability and task completion.

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5. Wellbeing[1]

1. What is wellbeing according to The LIFECOMP framework?

Wellbeing is described as the pursuit of life satisfaction, care of physical, mental and social health and the adoption of a sustainable lifestyle. This definition highlights the connection and interdependence of physical, mental, social and environmental aspects of wellbeing. To achieve it there are three main psychological needs which need to be satisfied: autonomy, competence and relatedness, and they are affected not only by the personal competence but also by the social, cultural and economic competence.

To address this, individuals should adopt a systemic understanding and take into consideration actions to improve their physical, cognitive, emotional, social, existential, environmental and collective wellbeing. It is vital to understand this challenge as a co-shared responsibility, understanding the importance of mutual care and strengthening our sense of belonging to a wider community.

The three descriptors associated with wellbeing are the following:

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[1] This chapter has been written by Ruth Villalón Molina and Marta Gallardo Gómez (Universidad de Cantabria).

Awareness that individual behaviour, personal characteristics
and social and environmental factors influence health and wellbeing

To better understand their own and other´s health and wellbeing, a person needs to be aware of the different factors that impact health, wellbeing and life satisfaction: from individual behaviour and genetics to social conditions, such as gender, income, education level, access to health services and culture. This implies the appreciation for the resources and networks that support individual wellbeing and individual or collective empowerment to advocate for improved healthcare systems, social services or policies to address climate change among others.

Understanding potential risks for wellbeing, and using reliable
information and services for health and social protection

Citizens have access to information, but they need the ability to understand, appraise and apply reliable health information to make decisions on disease prevention, healthcare and health promotion. This is linked with the ability of learning to learn and with critical thinking to distinguish reliable and unreliable health information and understanding the dangers of trusting and sharing false information on health. Additionally, it also entails the capacity to identify and use reliable services for health and social protection.

Adoption of a sustainable lifestyle that respects the environment,
and the physical and mental wellbeing of self and others, while seeking
and offering social support

This descriptor highlights the importance of adopting a lifestyle that contributes to promoting health and preventing diseases. At the same time, it promotes adopting a sustainable lifestyle that considers the interdependence of one's own and other's health and wellbeing, as well as safeguarding healthy environments.

It also promotes engaging in prosocial behaviours, offering help to others or receiving it when necessary, and in affiliative behaviours, creating and reinforcing cohesion in a group and social integrations. Both of those actions mitigate the negative effects of daily stressors.

Furthermore, both hedonic motives, those seeking pleasure, enjoyment, comfort and satisfaction, and eudaimonic motives, those seeking excellence, personal growth, meaning and authenticity, contribute to wellbeing in different ways.

2. Wellbeing in the university context and the role of writing

As it has been introduced, personal and social wellbeing are interconnected and affected by the environment. University is a specific context where a lot of interactions occur and where both personal and social wellbeing take a very important role. With this change, students are facing a new chapter of their life that can affect routines, stability, and, of course, wellbeing.

On the one hand, from the personal wellbeing point of view, starting university entails a lot of personal changes and challenges. Maybe moving abroad from home, studying new and more difficult things, having a change of timetables and study habits and facing a completely new environment. On the other hand, social wellbeing requires meeting new people, with the need to form new support social networks and start to work on projects with them. This approach to wellbeing is in line with the WHO health's definition (1946): "a state of complete physical, mental and social well-being", which underlines a clear relationship with the subjective perception of health. As Unden and Elofsson (2006) have pointed out, the most powerful predictor of self-perceived health is psychological wellbeing, and the self-perception of health status is a simple and good indicator of life satisfaction.

Several research identifies different protectives factors for wellbeing in adults (Heinsch et al., 2022):
- Social support and community participation.
- Physical activity and other lifestyle factors, such as sleep, exercising or diet, habits that usually start with physical improvement as a motivation, but end up sticking to your routines because of happiness and life satisfaction.

- Individual attributes such as humor, optimism, sense of purpose...
- Creative arts, including music.

As can be inferred, universities may foster students' wellbeing boosting social support and social collaboration within the institutions and extra-curricular facilities or services. Although in past decades professors may not care about students' interest, currently universities in Europe usually have a unit related to social inclusion and student support service, in which specialized staff may counsel students regarding not only academic but personal issues. As WHO states, "mental health is everybody's business" (WHO, 2005). Research has shown that wellbeing and academic success are linked. Thus, for example, the study of Cardenas and colleagues (2020) pointed out that experiencing greater subjective well-being, particularly having lower levels of depression, is related to obtaining higher grades. Moreover, a positive social climate that fosters a sense of belonging and connection can buffer the feeling of depression and promote positive emotions in students, which ultimately has an impact on academic achievement.

Writing is a powerful tool that can significantly impact the psychological and professional well-being of university students. It serves as a medium for self-expression, a method for organizing thoughts, and a means of communication in professional settings. Writing is an essential instrument that can be useful in two ways.

First, allowing to express their thoughts, feelings, and experiences, providing an outlet for emotional release. Composing a text, helps to become aware of thoughts and emotions, so this process can lead to improved mood, reduced stress levels, and a greater sense of wellbeing (Baikie, & Wilhelm,2005; Lepore & Smyth, 2002). Expressive writing, which involves writing about traumatic, stressful, or emotional events, has been found to result in improvements in both physical and psychological health (Pennebaker, 1993; Torre & Lieberman, 2018). This form of writing provides an outlet for emotional release, leading to better mood and mitigation of stress levels. In fact, recently researchers are studying "wellbeing literacy", that is, the intentio-

nal use of wellbeing relevant vocabulary, knowledge and language skills to maintain or improve the wellbeing of oneself, others and the world (Hou et al., 2021). Moreover, wellbeing literacy is considered as a part of "positive education", an approach which is currently getting more space in academia and educational centers (Oades et al., 2021).

Second, writing is a powerful tool for encouraging critical thinking and helping in organizing thoughts. As we claimed in previous chapters, writing may boost high–order cognitive processes. It encourages critical thinking and helps in organizing thoughts, thereby enhancing memory and comprehension, so it can contribute to academic success, but, furthermore, reflective writing on what is happening in a formal context can increase self-awareness by helping individuals to learn from their experiences and interactions. In that sense, writing about professional experiences, such as internships or projects, foster students to reflect on what they have learned (Bolton, 2007). This reflection can lead to deeper understanding and personal growth, which are key indicators of good mental health (Weigold el al. 2020; World Health Organization, 2005).

Since writing has a great potential for fostering wellbeing, both from a personal and professional level, we propose an activity that can be carried out at the university context. This activity aims to favour professional motivation and helps finding purpose and meaning in life, aspects that are not always that obvious and that can affect subjective wellbeing (Schippers and Ziegler, 2019).

3. Activity: Professional Motivation and Formative Biography

Pedagogical foundations

One of the hardest decisions young adults must make comes from choosing what they want to study or what major they are going to choose, and that is something that feels like a lifelong decision that will determine their professional future. This decision is not only affected by personal preferences, in many cases, family and social con-

text also influences the final decision made (González, 2009). However, even if this decision requires a good orientation prior to access to university and feels definitive, it is never an end road. Students may change their degree, or if they made a good initial decision, they will still have to make choices on specialization, or at least be aware of what they decided or may decide in the future, because, on many occasions, even once they have finished their university studies, there is a lack of information on how they can continue their studies or the laboral possibilities that they can have access to.

The activity we are going to present is thought to be implemented with undergraduate students in their first or second year but could be applied to older students.

Writing is an incredible tool for finding guidance and reflecting thoughts regarding decisions, and it should be promoted among university students in order to help them find a professional motivation through the writing of a formative biography or learning biography (Kabuto & Harmey, 2020). González (2009) conceives a professional autobiography as an innovative instrument to foster critical reflection and experiential sensitivity in the higher education context. This autobiography helps develop self-knowledge, the capacity of analysis of our daily life environments, and the experiential implication of students in their learning process.

Thinking about a professional biography or life story at a training level may help students form all knowledge fields, but it is especially interesting when an important part of the syllabus contains very practical subjects or internships, as it happens in teacher education (González, 2009; Richards et al., 2021; Rodrigues-Pessoal et al. 2022) or health professionals (Alves et al., 2020; Pool et al., 2015).

Objectives of the activity
1. Encourage personal reflection on:
    a. Personal situation and knowledge field interests
    b. Strengths and weaknesses
    c. Possible training and/or professional paths

2. Finding a professional motivation that leads to wellbeing in their studies.
3. Elaborating a formative biography.

Methodology

This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of knowledge of biology. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: What is a formative biography and what is useful for?

The teacher will explain the purpose and benefits of professional biographies and he will provide an example. Once students understand the benefits of the tasks, they will start reflecting on their own student's life, analysing all the training received until that moment and all the knowledge that has been acquired. The writing will be guided by some prompts:

• Write about your family professions, are they relate to you desired career?
• What were the subjects where you felt stronger before starting university? Were they your favourites? Did you have subjects that elicited positive and/or negative emotions?
• When you were a child, what profession did you think you would become?
• What made you choose this professional career? Were there external factors that made you choose this career instead of another?

Session 2: Finding your own path

The aim of this session is to foster an analysis of all the possible roads that students can take from their field of studies.

Students will go further in their reflection on their academic life, and they will start analysing their learning path through the different subjects that they are taking at university. They will be writing all their experiences and knowledge that they have been acquiring during their university lessons and write it down in a "diary". The objective of this

part is that they can find a meaning to what they are studying, and they will have to do some research on their academic and professional future. Some prompts an instructor may use to guide the writing:

- Do you find purpose in the subjects that you are taking?
- How would you like to get specialised during your training?
- What subjects or how do they help you through this path of specialization?
- What emotional challenges do you think you will encounter?
- What strengths and weaknesses do you possess to deal with the path?
- Do you know all the professional opportunities you can access once you finish your degree?

During this reflection, and specially at the end, before getting in the last session, students will receive feedback from their instructor, by giving him a first draft of their reflective writing process.

Session 3: Creating a support network

In this session, students will have to share their findings in relation to the reasons they have found to give meaning to what they are studying and what future opportunities it will give them. This activity is thought to be a whole-class debate in case of not having a very large number of students. In bigger classes, to foster participation the teacher can previously create smaller groups for debate depending on their professional interests shown in session 2 activity.

Sharing their findings will broaden the rest of the group's ideas, help them create a sense of community and support network (for social wellbeing) between their classmates by finding that they might have similar interests in the same fields, and this will motivate each other to improve their educational performance. Before ending the session, the professor recommends students to keep doing this assignment at the end of each academic course, so they may see their own development and encourage them to sum up their bio and publish it on professional social media. By keeping this portal updated, they will keep reflection on their training and will create a wider profes-

sional community and as their final biography is presented digitally, it can be updated and shared with enterprises which are looking for potential candidates for internship or hiring.

Evaluation

At the end of the activity, students will have to hand in two documents, the first draft, a document with all the work done until the end of session two, and a second document, the final submission including a writing with all the reflections done throughout the sessions. The evaluation will have two different approaches. First, within a formative assessment approach, the draft collected by the instructor after the second session will be used for analyzing students' initial reflections and work done. Second, as a summative approach, instructor will consider two elements: student's participation in the debate and the ideas that they share with the rest of the peers, and their final biography. The grade of the final biography will be based on whether a change from the initial idea has occurred and on the degree of reflection shown in this document.

Digital tools for professional biography:

LinkedIn is a social network used to connect between professionals and with different companies. It is also a great portal to show your abilities, publish your professional achievements, your training and your experience. This will also help them create a professional network that can serve as support and a sense of belonging to a wider community.

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Part III.
Promoting Life Skills
through Writing Activities:
The Social Area

The academic journey of C. is progressing. She is in her final year, and yet it seems like yesterday when she wandered disoriented through the hallways of the faculty, still unaware of which dishes on the cafeteria menu should be avoided at all costs. Now she spends more time on campus than in her own room (the one she rented after realizing that the residence ceases to be the ideal space in the second year of college).

C. has a close-knit group of friends. Most of them have chosen the same educational path, so they coincide in practically all subjects. The fact that they spend so much time together has led to the creation of a kind of emotional convergence where they are practically in agreement on all the decisions they make. However, an unexpected event has provoked a conflict within the group: the participation in a university public call that funds projects related to the environment. The aim is to create an awareness campaign to reduce water consumption on campus. The top three campaigns will receive financial compensation intended to spread the message through panels and posters throughout the campus. C. thinks that this is a straightforward project to carry out, given that both she and her friends are environmentally conscious individuals. What C. did not foresee were the difficulties in terms of collaboration. Everyone agrees that decisions should be made democratically. However, every time they try to openly discuss their preferences, a group discussion arises, stemming from different perspectives and constraints. Some propose adopting an

informal approach, moving away from technicalities, while others consider it more appropriate to adopt a scientific approach to give relevance to the argument. Likewise, some want to devote weekends to preparing the campaign, while others prefer to take advantage of non-academic afternoons. This situation causes C. a lot of discomfort because he would not like the relationship to deteriorate after so many years of friendship. Fortunately, one of the group members, who has always been involved in democratic processes and social and citizen participation, makes a proposal for collaborative work.

Considering that the group is divided between those who prefer to generate a more informal campaign and those who prefer to generate a more serious one, C.'s friend proposes to create two committees. Each of these committees will be in charge of elaborating a campaign outline and researching, through the reading of scientific papers, the best persuasive strategies used in the field of marketing and advertising. The campaign sketch will have to be accompanied by a brief text justifying this approach with arguments. After this working process of each committee, a meeting will be organized to decide the best approach for the campaign. Once the type of campaign to be designed has been agreed upon, two work teams will be created based on time preferences to carry out the tasks (Weekend team and Evening team).

To C., the procedure seems quite appropriate, and she readily accepts her friend's proposal. However, she has some doubts about her own competence to carry it out. 'Will I be able to empathize with those who disagree with my opinion on the best way to design the campaign?' 'How will I convey the information persuasively?' 'And... above all, how complex will it be to collaborate in this decision-making process when individual interests are at odds?

6. Empathy

1. What is empathy according to The LIFECOMP framework?

Empathy is defined by the APA (American Psychological Association) dictionary as "understanding a person from their frame of reference rather than one's own, or vicariously experiencing that person's feelings, perceptions, and thoughts" (https://dictionary.apa.org/empathy). Empathy plays a crucial role in the deployment of various social and emotional competences, forming the foundation for building positive relationships. At the core of all pro-social behaviors, empathy is instrumental in managing stress and resolving conflicts. It encompasses three key aspects: the ability to recognize emotions in others, to cognitively adopt their perspective and share emotional states, and the capacity to provide an appropriate response to others' emotions. Empathy is a prerequisite for effective communication, interaction, and collaboration. It holds a pivotal role in regulating pro-social behaviors while inhibiting aggressive and antisocial tendencies. Recognizing its significance, the UNESCO Working Group on Global Citizenship Education includes empathy as one of the essential global citizenship competences. Scientific evidence indicates that empathy is ingrained in the human brain, and the survival of our species has been historically linked to the ability

to understand and assist others (for instance, humans are the only higher primates that require assistance for giving birth). Importantly, it is widely acknowledged that specific practices can enhance and develop empathy.

According to the LIFECOMP framework, the three descriptors associated with empathy are the following.

Awareness of another person's emotions, experiences and values.

This descriptor underscores the importance of perceiving and understanding emotions and values of others. Recognizing emotions in others is inextricably linked to self-awareness, involving the identification and description of one's own emotions. Proficiency in nonverbal communication, such as recognizing facial expressions and gestures, is vital for understanding and expressing emotions. This skill extends to the digital realm, where emoticons are used for explicit emotional communication. Ultimately, empathy, stemming from this capacity, involves automatic responsiveness to others' emotions and an appreciation of diversity, recognizing unique values and experiences in individuals from different cultures.

Understanding another person's emotions and experiences, and the ability to proactively take their perspective

This descriptor highlights the ability to adopt the perspective of another person while separating one's own emotions from theirs. It involves cognitive skills like making inferences and imagining how others perceive and feel in specific situations. Understanding others' emotions is crucial for effective communication and collaboration. Taking the perspective of someone else does not require endorsing their views: empathy can coexist with disagreement. Two approaches to perspective-taking involve imagining the feelings of the others or envisioning how one would feel in the same situation, yielding different emotional outcomes. The first approach often results in more empathetic emotions and altruistic behaviors, while the latter may lead to mixed feelings of empathy and personal distress.

Responsiveness to another person's emotions and experiences,
being conscious that group belonging influences one's attitude

This descriptor focuses on the motivational dimension of empathy, emphasizing the ability to respond effectively to others' emotions and alleviate their distress. Empathic concern involves experiencing congruent emotions, leading to intentional pro-social behavior aimed at easing others' suffering, influenced by factors like similarity and shared experiences within social groups.

2. Empathy in the university context and the role of writing

Higher education fosters profound social connections, bringing together individuals from diverse backgrounds through classroom interactions. Furthermore, with internationalization as one of the goals of higher education and the progressively globalized context in which we live, classrooms and university campuses have evolved into spaces of great diversity. This spectrum of diversity encompasses various dimensions, including heritage demographics (such as ethnicity and socio-cultural belonging), sex and gender (biological sex, gender identity, sexual-affective orientation), geographical and cultural origins, belief systems, political affiliations, religion, temporal factors (age, generation), socioeconomic statuses, and numerous other facets (Olt, 2021). In this heterogeneous context, empathy becomes a fundamental pillar to understand other people's realities and maintain good interpersonal relationships. In a way, university can become a sandbox to practice interpersonal and intercultural communication competence for an increasingly interconnected and multicultural society. And what do we mean by empathy?

Decety and Cowell (2014) define empathy as both affective and cognitive responses to human suffering, involving understanding, communication, and action. Authors, like Hojat (2007) and Crossman (2007), differ on whether empathy is more cognitive or emotional but agree on its complexity, requiring consistent openness to others'

experiences (Maxwell, 2008). Other authors state that empathy is socially constructed, influenced by personal affiliations and experiences (Gair, 2011; Rasoal et al., 2012). In summary, the literature indicates empathy as a complex entity shaped by social, contextual, and disciplinary factors. This complexity in defining empathy is also related to its close relationship with other psychological constructs related to social cognition, for example, Theory of Mind. Empathy and Theory of Mind (ToM) are considered to encompass both affective and cognitive components, making it challenging to differentiate between the two terms. The definition of ToM includes the ability to make inferences not only about others' cognitive mental states but also about their desires and emotions, sometimes termed "affective ToM" (e.g., Kalbe et al., 2010; Schlaffke et al., 2015). The processing of others' mental states is seen as engaging ToM whenever it involves metarepresentation, regardless of cognitive or affective content. Conversely, empathy definitions involve both emotional processes, such as sharing others' feelings, and cognitive processes, like reasoning about others' affective states, referred to as "cognitive empathy" (Walter, 2012). Broader conceptualizations of empathy include features such as empathic concern or compassion. The diverse models of empathy and ToM present challenges for integrating findings across different fields (Schurz et al., 2021). Aside from the theoretical intricacies of defining empathy, given its interconnected cognitive and affective factors, various didactic approaches within the University setting aim to enhance this competence. This emphasis is particularly significant considering the crucial role empathy plays in certain professions.

Researchers have extensively investigated factors believed to diminish empathy (McNaughton, 2016). For instance, students are provided with limited opportunities for prolonged engagement with authentic activities that focus attention on shared bodily aspects of life and encourage self-direction, which does not help them to improve their empathy through their higher education path. Notably, there has been considerable exploration into teaching and learning strategies aimed at enhancing the development and sustenance of empa-

thy, with a particular focus on fields such as social work and health (Batt-Rawden et al., 2013; Gair, 2011; Rasoal et al., 2012). Social work students must navigate a distinct challenge, being tasked not only with demonstrating empathy but also providing strategies for clients to develop empathy towards offenders (Turnage et al., 2012). In contrast, healthcare students face the challenge of interacting with individuals whose conditions may elicit fear and avoidance (Shapiro, 2008). Simultaneously, preservice teachers are often expected to exhibit empathy towards children. However, regardless of the disciplinary area, all students in a higher education context should develop empathy to establish interpersonal connections in a diverse context that is a reflection of society. There are several ways to promote empathy in an academic context (see for instance a systematic meta-analysis and meta-synthesis of the impact of service-learning programs on university students' empathy by Gordon et al., 2022). In this chapter we will address the potential of creative writing to promote empathy in college students.

Reflective writing commonly prompts the writer to contemplate their personal experiences. In contrast, the aim of creative writing is to redirect the focus from the writer to an external character. This shift allows the writer to cultivate an empathic connection (Charon et al., 2016). Various experiments involving students in the health field have been conducted, demonstrating the effectiveness of this writing tool in fostering empathy. For example, George et al. (2014) evidenced how medical students who participated in a creative storytelling task with elderly patients diagnosed with dementia showed increased empathy and more positive attitudes towards these patients and dementia patients in general. Another study by Shapiro and colleagues (2006) compared essays from two groups of medical students—one trained in creative writing and the other in clinical reasoning. The content analysis of the essays revealed that students with creative writing training wrote stories with more emotion, empathy, insight, and religious/spiritual references compared to those in the clinical reasoning group. Finally, Shaffer et al., (2019) showed that narrative wri-

ting can serve as an effective intervention to foster a shift in attitudes toward patients who exhibit unhealthy and sometimes controversial behaviors. The results of these studies point to the potential of creative writing to promote empathy, but how can we integrate it into a structured teaching activity? Below we present an example.

3. Activity: Promoting empathy through storytelling

Pedagogical foundations

Storytelling has proven to be an exceptionally effective method of cultivating various traits, especially among children. Regardless of age, everyone seeks interaction and a sense of belonging, and storytelling fulfills this need. Stories possess the capacity to engage, influence, educate, and inspire listeners (Peterson, 2017). Beyond fostering connection, stories establish familiarity, trust, and enable listeners to immerse themselves in the narrative, fostering a more receptive learning environment (Boris, 2017). Stories typically narrate a series of events involving one or more protagonists engaging with their world, often addressing and attempting to resolve challenges along the way. The human capacity for intersubjectivity enables audiences to construct shared meaning from distant events and others' experiences. According to Bruner (2002), stories provide structure to our experiences and serve as vital tools for cultural learning and reflection.

The employment of storytelling as an instructional tool has been investigated mainly in secondary and postsecondary educational settings. For example, Bell (2009) documented an arts-based storytelling approach applied to middle and high school students, emphasizing racism and social justice themes. Keehn (2015) employed personal storytelling to advocate for social justice in two diversity courses, while Mutonyi (2016) explored the efficacy of stories, proverbs, and anecdotes in enhancing high school students' comprehension of science concepts. Stories can serve various purposes in supporting teaching and learning. Instructors or students may

create them, or existing texts by other authors may be adopted. The narratives conveying the story can assume diverse forms, ranging from conventional oral or written formats to those employing modern technologies such as digital storytelling or data visualizations (Landrum et al., 2019).

While the storytelling methodology is applicable across various fields of knowledge, there is a specific focus on the concept of "patient storytelling" in empathy education for medical students (Kagawa et al., 2022). Patient storytelling, being more realistic and interactive than teacher readings or videos, is expected to have a unique educational impact on enhancing medical students' comprehension of patients' perspectives. Hence, our activity will be directly connected to the field of medicine.

Objectives of the activity
1. Promote empathy through creative writing.
2. Learn how to use the storytelling technique.

Methodology
This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of medicine. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this first session we present basic fundamentals of creative writing and storytelling (narrative transportation, role of empathy and mental imagery, basic story arc structure, building blocks for a character in a story, tips for creative writing, see for instance https://diymfa.com/about/ for useful tips and resources that can support creative writing). We also introduce students to good examples of stories in which the characters are clinical patients.

Session 2: In this next session the teacher offers students three different prompts to construct the story. Students will be able to choose between a clinical problem or disease affecting a child, an adult or

an elderly person. Based on this instruction, students will have to delimit the character. To do so, they will have to: describe the person physically and their qualities, their hobbies and context (study, work, friendships, socio-cultural and socio-economic aspects, etc.). Students will have to develop a story with a storyline based on how this person found out about their disease and the overall process. The story will have to be told in the first person; that is, students will have to tell it as if they were this character. To facilitate the construction of the story, the teacher will provide a template. The template will organize the story into three segments: a beginning, a middle, and an end. The beginning will address questions related to the main character's desires (e.g., coping with the disease, understanding of the disease by the family, etc.) and will provide context (encouraging the use of data about the city, hospital, health system, resources). The middle will prompt the imagination of obstacles encountered by the character during the disease process. The end of the story will inquire about the outcome of the disease process (positives or negatives).

Example of completed template:
elderly person diagnosed with dementia

Who am I? [Character traits]
Character: Ezekiel Harrington ("Zeke")

Physical Variables: Ezekiel is 68 years old. He has gray hair and blue eyes. A motorcycle accident when he was young affected his spine and as a result he has a pronounced kyphosis. He is an active person, so he is not overweight. Ezekiel's most distinctive aspect are small round glasses that make him look like an intellectual. His skin is pale and, as a result of age and having laughed a lot, he has marked wrinkles.

Personality: Zeke possesses an indomitable spirit that refuses to be overshadowed by the limitations of age. He is a reservoir of stories, anecdotes, and lessons, always ready to share his wealth of knowledge with a twinkle

in his eye. A natural storyteller, he captivates listeners with his wit, humor, and a touch of mischief. He is compassionate, often offering wisdom garnered from decades of joy, sorrow, and self-discovery.

Family Context: A widower for the past decade, Zeke finds solace in memories of his late wife, Eleanor. Their love story, a cornerstone of his existence, continues to influence his perspective on life. His two children maintain a close connection with him. Despite the physical distance, Zeke cherishes the regular phone calls and occasional visits, finding comfort in the warmth of family ties that span generations.

*Sociocultural Setting:*Zeke comes from a small, close-knit town where everyone knows everyone else's business. He grew up in a time when community ties were strong and trust was paramount. His roots in the town run deep and he remains a respected and well-known figure, having run a bakery for over 25 years.

Storyline [Diagnosis and disease process]

Beginning: Answer the following questions to develop the beginning of the story:

- What is the disease diagnosed to the protagonist?
- Where and how does the protagonist find out about the diagnosis?
- What is his emotional reaction when he finds out?

The sterile scent of antiseptic hung in the air as I sat on the unforgiving plastic chair in Dr. Thornton's office, my worn hands fumbling nervously with the edges of my tweed jacket. The sun, subdued by heavy curtains, struggled to cast a feeble glow through the room's clinical atmosphere. The doctor, a solemn figure with a gentle demeanor, sat across from me, framed by shelves adorned with medical tomes.

"Mr. Harrington," he began, his voice measured and compassionate, "I'm afraid the results confirm our suspicions. You're experiencing symptoms consistent with early-stage dementia."

Dementia. The word echoed in my mind like a distant thunderstorm, ominous and laden with the weight of impending change. My gaze drifted from

the doctor's face to the beige walls that seemed to close in, and for a moment, the world outside ceased to exist.

The hospital, a monolith of healing and despair, surrounded me. Its halls, once familiar during my visits with Eleanor, now felt foreign, like a labyrinth I had unwittingly entered. I could hear the hushed murmurs of nurses and the distant beeping of machinery, a disconcerting symphony that underscored the gravity of my situation.

I felt emotionally overwhelmed — fear, grief, and a profound sense of loss. I looked down at my hands, weathered by time, realizing that I was about to lose something fundamental to my identity. Memories, those fragile threads connecting me to a lifetime of experiences, were slipping away.

In the midst of this emotional tempest, a decision crystallized within me. I met Dr. Thornton's gaze, determined. "What are my options?" I asked, my voice steady despite the tumult raging inside.

The doctor explained the potential treatments, the uncertainties that lingered like shadows in the fog of the unknown. We discussed medications, therapies, and the importance of a support system. As the details unfolded, a resolution formed in my mind — I would confront this challenge head-on.

Leaving the hospital that day, I felt the weight of the diagnosis settle on my shoulders, but beneath it, there lingered a spark of resilience. I chose not to let the shifting shadows of dementia consume me entirely. There was a battle ahead, and I would fight it with the fragments of clarity that remained. The journey was daunting, yet somewhere within the recesses of my fading memory, I found the strength to embark on the path that lay before me.

**Rising Action. Answer the following questions
to develop the middle part of the story:**

- What does the main character do after the diagnosis?
- What are the main barriers and difficulties he/she encounters in dealing with the disease?
- What are his or her elements of support during the process?

The news of my diagnosis weighed heavily on my heart, a truth I couldn't

bear to carry alone. Summoning the courage, I gathered my family in the cozy living room adorned with faded photographs and cherished memories. The air was thick with anticipation as I cleared my throat, the words lingering on my tongue like an unwelcome guest.

"I've been to see Dr. Thornton," I began, my gaze shifting from face to face. "The news isn't easy, but I want us to face it together."

Silence settled in, broken only by the ticking of the antique clock on the wall. The room absorbed my revelation, and I felt a collective inhalation of breath as my family grappled with the weight of my diagnosis. Yet, in their eyes, I saw not just fear but a determination to stand by my side.

As we navigated the emotional aftermath, a shared decision emerged — to confront this challenge as a united front. The family rallied around me, offering support, understanding, and an unwavering commitment to preserving the moments that were slipping away like grains of sand.

Determined to take an active role in my journey, I expressed my desire to enroll in a cognitive activity program tailored for those facing memory challenges. However, the quaint town we called home lacked such specialized services. Undeterred, I began a quest to find an alternative, determined to forge a path toward cognitive well-being.

After numerous phone calls, emails, and consultations, I discovered a neighboring town with a reputable cognitive enrichment center. It offered memory exercises, stimulating activities, and a supportive community that could become my lifeline in the face of encroaching shadows.

This decision marked the beginning of a new chapter. Despite the logistical challenges of commuting to the neighboring town, I embarked on this journey. Each day, as I traveled the winding roads, I found solace in the picturesque landscapes that seemed to whisper encouragement.

The cognitive program became my sanctuary, a place where the echoes of laughter and shared experiences reverberated. Surrounded by kindred spirits facing similar trials, I discovered a sense of belonging. The memory exercises became not just mental workouts but threads weaving a tapestry of resilience.

**Resolution. Answer the following questions
to develop the ending of the story:**

- How does the character act over time in relation to the disease process?
- How does he/she deal with the difficulties that emerge during the disease process?
- How does the story conclude?

As the seasons changed, so did the landscape of my journey with dementia. The cognitive program in the neighboring town became a sanctuary where I forged new connections and unearthed hidden reservoirs of strength. The exercises, initially challenging, evolved into a mosaic of victories, no matter how small.

The family, too, embraced a new normal. The living room, once a space laden with the weight of uncertainty, transformed into a haven of acceptance and understanding. Laughter echoed against the walls, creating a melody that drowned out the whispers of impending shadows.

With each passing day, the family observed subtle shifts — moments of lucidity, sparks of recognition, and an enduring connection that transcended the limitations of my fading memory. They became adept at navigating the labyrinth of my thoughts, finding joy in the fragments of clarity that persisted amid the encroaching fog.

The neighboring town's cognitive program, however, posed logistical challenges that intensified over time. The commute became arduous, casting a shadow on the positive strides made within its walls. Determined to adapt, the family collaborated with local organizations and passionate individuals, laying the foundation for a cognitive enrichment program within our own community.

This grassroots initiative not only addressed my needs but became a beacon for others grappling with similar challenges. The living room, once a symbol of uncertainty, transformed again, this time into a hub of local support. Our town rallied, recognizing the importance of unity in the face of adversity.

The resolution of my story unfolded not in dramatic crescendos but in the

quiet moments of everyday life. The cognitive program, now a fixture in our community, offered a lifeline for those navigating the complexities of memory loss. The family, with unwavering love and resilience, became the cornerstone of my journey.

The echoes of resilience resonated, not just within our home but throughout the town. The shadows persisted, but amid them, a tapestry of shared strength and collective compassion emerged. As the sun dipped below the horizon, casting hues of warmth across the landscape, I found solace in the knowledge that, even in the face of inevitable twilight, the echoes of resilience endure.

Session 3: In this session, students will have to transform the content of their story into video format, using the flip tool (https://info.flip.com/en-us.html). In addition, they will have to include in the video a personal reflection on how writing from another person's experience of illness has contributed to their perspective-taking and empathy.

Evaluation

The content of the stories/videos will be evaluated based on the accuracy and appropriateness of the clinical terms. Likewise, a content analysis will be carried out to evaluate the presence of emotions in the discourse, elements referring to vulnerability factors, social risk, etc; that is, aspects related to social cognition to evaluate empathy.

Digital tools for creating storytellings

Bibisco (https://bibisco.com/?lang=en) is a novel writing software. It provides all the features and tools you need to draft, refine, and share your story start to finish.

Manuskript (https://www.theologeek.ch/manuskript/#) is a less-detailed software than Bibisco for novel writing.

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7. Communication

1. What is communication according to The LIFECOMP framework?

The 'linguistic model' of interpersonal communication identifies six crucial components for effective communication: the sender, message, receiver, context, code, and channel. Communicative competence can be defined as the ability of one individual to communicate successfully in terms of both effectiveness (goal achievement) and appropriateness (acceptability in relation to context) (Vorwerg, 2015). The rise of digital technologies has revolutionized communication, enabling instant and cost-effective exchange through computer-mediated communication (CMC) and social media. While CMC facilitates connections over distances, it lacks the socio-emotional and nonverbal cues present in face-to-face interactions, potentially compromising effectiveness and leading to unintended interpretations.

To address these challenges, students and lifelong learners need digital competence. The Digital Competence Framework for Citizens underscores the importance of creating and managing digital identities, protecting reputations, handling data from various tools, and interacting through diverse digital technologies. It emphasizes awareness of behavioral norms in digital environments, the adaptation of

communication strategies to specific audiences, and recognition of cultural and generational diversity in digital interactions.

According to the LIFECOMP framework, the three descriptors associated with communication are the following.

Awareness of the need for a variety of communication strategies, language registers, and tools that are adapted to context and content

Effective communication necessitates individuals to choose appropriate strategies based on the context. These strategies encompass verbal (written and oral), non-verbal (body language, facial expressions, tone of voice), and visual methods (signs, icons, illustrations). Adapting messages involves considering factors like audience knowledge, relationship with the speaker, communication context, purpose, and tools used for conveying the message. The flexibility to articulate both verbal and non-verbal strategies across formal and informal registers is crucial for ensuring effective communication.

Understanding and managing interactions and conversations in different socio-cultural contexts and domain-specific situations

This descriptor emphasizes the vital skill of adjusting communication styles to diverse sociocultural contexts. It involves tailoring communication to physical settings, considering factors like noise level and lighting in places such as libraries, parties, or workplaces. The cultural context, shaped by values, lifestyles, and beliefs of both speaker and audience, significantly influences message production and interpretation. In multicultural settings, individuals must approach cultural differences with openness, self-awareness of their cultural heritage, and the ability to temporarily adopt alternative perspectives. Additionally, the social context and speaker-audience relationship set norms for intimacy levels and formality in the exchange.

Listening to others and engaging in conversations with confidence, assertiveness, clarity and reciprocity, both in personal and social contexts

This descriptor emphasizes the role of effective listening skills, in-

cluding awareness of verbal and non-verbal cues, empathy, and patience. Key techniques, such as clarifying and summarizing, are employed to build trust, making it a fundamental skill for fostering positive human relationships. Attention to the entire message and respect for turn-taking are crucial, especially in discussions with strong opinions. Individuals must be cautious of confirmation bias, particularly in personalized online environments, actively countering this tendency, and being mindful of potential "filter bubbles" that limit exposure to diverse ideas. The descriptor also underscores the importance of assertively expressing positions through advocacy, promotion, argumentation, debate, persuasion, and negotiation in various settings.

2. Communication processes in the university context and the role of writing

University education is very demanding. University students are required to have a multitude of competencies, among which we can highlight autonomy, critical thinking, the ability to work in groups, perfect reading and writing skills and mastery of communication in a broad sense.

With respect to the latter, it should be noted that University students are involved in a multitude of communicative situations throughout their academic career. Some of them will occur through social interactions with peers or instructors and others will take place within the framework of a teaching-learning task. In the latter case, the student will be confronted with the narrative discourse of an author through the reading of their texts. In many cases, the student will have to internalize these theories, connect them with their previous knowledge and generate their own discourse to be communicated orally or in writing. Since communication is a fundamental pillar of University education, it is necessary to conceptualize it theoretically, especially if we want to carry out didactic activities to promote it that are solidly grounded.

Considering the overall framework that structures this book and its connection to life skills, first and foremost, we need to conceptualize communication from the perspective of *Life Span Communication*. More than two decades ago, Knapp (1978), Nussbaum (1981), and other scholars initiated a discourse proposing the adoption of a life span approach as a valuable metaperspective to enhance our understanding of communication behavior. Nussbaum et al. (2002) underscored the core principle of life span developmental approaches, asserting that developmental potential persists throughout the entire life of each individual. In Baltes (1987) a further deepening of this perspective is provided by the outline of five key assertions: i) challenging conventional beliefs about universal decline with age, ii) recognizing diverse development in behaviors at distinct times and rates, iii) portraying development as a dynamic interplay of gains and losses, iv) acknowledging intra- and interindividual diversity, and v) highlighting the environment's influential role in shaping human behavior. Research in this field has revealed that communicative behavior undergoes dynamic and complex changes across the lifespan.

In addition, communication has a clear situational nature, and in this sense, we must understand it within the framework of the *Communication Accommodation Theory.* Howard Giles and colleagues have developed this Communication Accommodation Theory (CAT), a framework that delves into the social cognitive processes influencing individuals' perceptions of the environment and their communicative behaviors (Giles et al., 1987). CAT proves invaluable for communication scholars, facilitating the description and explanation of how individuals adjust their speech in response to various factors such as situational, personal, or interactional variables. In essence, during a conversation, individuals may choose to maintain their communication style, converge towards their conversational partner, or diverge from the perceived style of the other participant. This adaptation can lead to underaccommodation, where talk is downplayed concerning the interlocutor's needs, or overaccommodation, involving an exag-

gerated language or communication style beyond the listener's requirements (Williams & Nussbaum, 2001). CAT, with its roots in the work of Giles and his collaborators, offers a nuanced understanding of the dynamics of communicative behavior.

Ultimately, it is important to recognize that *argumentation constitutes a pervasive element within human communication* and social interactions. Defined as a cognitive and social process, argumentation involves the construction and critique of arguments by individuals (Golanics & Nussbaum, 2008). Consequently, it serves as a means to access the reasoning of students. The evaluations of arguments formulated by students during their reasoning, whether presented in dialogue, a written essay, or another format, can vary based on criteria such as depth, balance, support, speculation, simplicity, complexity, and other factors.

Connecting argumentation with the fact that communication must be adapted to the interlocutor and the context, the most comprehensive framework for understanding it is *Walton's dialogue theory*. Walton's framework is pragmatic, meaning that the form and substance of an argument are influenced by the shared objectives of a reasoner and the other participants engaged in reasoning. Consequently, various types of argument dialogues exist (Walton, 1998), each characterized by distinct goals and regulated by specific rules and constraints aligned with those objectives. For instance, in a persuasive dialogue, the aim is for one party (the proponent) to convince another party (the respondent) of the validity of a proposition, leveraging propositions that the respondent has previously acknowledged as premises. These different forms of argumentative discourse can occur in both oral and written contexts. Consequently, we may also encounter various styles and genres of writing, which will be more or less associated with different disciplinary areas. Communicating and arguing within various fields of knowledge will lead to reasoning in diverse ways, considering the close relationship between communication and thinking processes.

In conclusion, considering that the communicative processes of a

university student differ qualitatively and quantitatively from those of students at other educational levels (taking into account the demands and requirements of the context), we need to propose meaningful and adapted pedagogical approaches. How can we contribute to the communicative processes of this population through writing? One way, among many possibilities, is to promote the genre approach in writing in different disciplinary areas. Below, we present an example of an activity that could be carried out in this sense.

3. Activity: Exercising genre writing: the power of templates

Pedagogical foundations

Thoreau (2006) defines genre in writing as a specific type characterized by style, target audience, and purpose. This implies three key dimensions: writing style, readership, and goal orientation. Students are urged to write with specific purposes, following social conventions for clarity. The genre approach to writing encompasses two dimensions: genre as a type of text, emphasizing language and form, and genre as a process, involving how writing is developed, taught, and learned. Ann (2003) underscores the dual role of genre role as a type of text and an approach for teaching writing, emphasizing its uniqueness among existing methods.

The genre, as an instructional approach for teaching writing, follows a distinct process, outlined by Martin (1999) in three phases: modeling the target genre, collaborative construction of the text by learners and teachers, and independent text construction by learners. The modeling stage introduces students to a specific genre, which is then analyzed for linguistic features, structural patterns, and communicative purpose. Subsequent phases include student exercises in text manipulation and modification, leading to attempts at independently producing a genre type based on acquired knowledge. Templates can be scaffold instruments throughout these three stages, as described in the following activity.

Objectives of the activity
1. Encourage writing in different disciplines.
2. To increase awareness of the aspects that characterize a given textual genre.
3. To improve students' written communication skills.

Methodology

This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of knowledge of Health sciences. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this initial session, students are introduced to the topic of genre in writing. The importance of writing with attention to style, formal characteristics, audience, and the purpose of the produced text is explained. Following this, the activity for the next two sessions is presented: writing a scientific text on the composition of flu vaccines and transforming it into a brochure targeting individuals over 65, promoting vaccination.

Session 2: In this session, students will receive two templates, each including the main sections corresponding to two expository sub-genres: informative texts (such as those found in textbooks) and persuasive texts (such as white papers or policy-oriented documents). The first template, associated with the informative text, will focus on plastic. The sections of the template will cover when this product emerged, its composition, the types of plastics, and their main uses. The second template, linked to the persuasive text, will also focus on plastic and aim to promote its reduction. Sections will include a brief conceptualization of plastic, production and consumption rates in the national context, environmental impact, and alternative materials. Both templates will be completed by the instructor, section by section, explicitly demonstrating decision-making processes involved; in other words, the instructor will fill out the templates by modeling the process.

Template 1: Informative Text – Plastic Analysis

Introduction
• Brief history of plastic emergence, highlighting key milestones and historical context.
• Definition of plastic as a synthetic material with organic origins.

Organic Composition
• Explanation of the organic compounds used in plastic production.
• Insight into the chemical processes that transform these compounds into various plastic polymers.

Types of Plastics
• Classification of plastics based on polymer structure and properties.
• Brief description of common types such as polyethylene, polypropylene, PVC, etc.

Main Uses of Plastics
• Comprehensive overview of the diverse applications of plastics in various industries.
• Discussion on the versatility and adaptability of plastic materials.

Template 2: Persuasive Text – Promoting Plastic Reduction

Introduction
• Brief conceptualization of plastic as a widely used but environmentally challenging material.
• Acknowledgment of the need for sustainable practices and reduction in plastic usage.

Production and Consumption Rates in the National Context
• Statistics on plastic production and consumption within the national borders.
• Analysis of trends, highlighting any notable fluctuations or patterns.

Environmental Impact
• Overview of the environmental consequences of plastic pollution.
• Discussion on the effects on ecosystems, wildlife, and human health.

Alternative Materials
- Introduction to eco-friendly alternatives to traditional plastics.
- Discussion on the feasibility and scalability of adopting these alternatives.

Promoting Reduction Strategies
- Presentation of effective strategies for reducing plastic usage.
- Inclusion of case studies or successful examples of plastic reduction initiatives.

Session 3: In this session, students will have to write texts on the topic of vaccination, also following the support of the template. It is useful to repeat the template-based exercise with a different topic to promote flexibility in genre-based communication. The sections of the template for the informative text on vaccination will include the emergence of the flu vaccine, different types and production costs, benefits, and potential adverse effects. The sections of the template for the persuasive text will be the same as the ones mentioned earlier, but the negative effects of the flu, especially in individuals over 65 or with various pathologies, will be added. Students will need to develop their texts independently this time, following the structure established by the templates.

Template 1: Informative Text – In-Depth Analysis of Flu Vaccination

Introduction
- Historical context of the emergence of the flu vaccine.
- Overview of the significance of vaccination in public health.

Types and Production Costs
- Comprehensive classification of different types of flu vaccines (e.g., inactivated, live attenuated).
- Analysis of the production processes and associated costs for each type.

Benefits of Flu Vaccination
- Examination of the primary advantages of receiving the flu vaccine.
- Exploration of the impact on individual health and community-wide disease prevention.

Potential Adverse Effects
- Detailed discussion of potential side effects associated with flu vaccination.
- Analysis of the frequency and severity of adverse effects.

Template 2: Persuasive Text - Flu Vaccination and Its Impact, especially on Vulnerable Groups

Introduction
- Brief conceptualization of flu vaccination as a preventive measure.
- Acknowledgment of the importance of understanding the vaccine's impact, particularly in vulnerable populations.

Types and Production Costs
- Summary of different flu vaccine types and their respective production costs.
- Highlighting the accessibility and affordability of vaccines.

Benefits of Flu Vaccination
- Overview of the general benefits of flu vaccination for all age groups.
- Emphasis on the positive impact on reducing the spread and severity of influenza.

Potential Adverse Effects
- Mention of potential adverse effects to provide a balanced perspective on vaccination.
- Encouragement of informed decision-making.

Negative Effects of the Flu, especially in Vulnerable Populations
- In-depth exploration of the negative impact of the flu, with a focus on individuals over 65 or those with underlying health conditions.
- Statistics and case studies illustrating the heightened risks and consequences.

Evaluation

The assessment of the activity will involve writing two texts without any assistance. Students will need to create an academic text on breast cancer and a persuasive text on the same topic, designed for a

prevention campaign. These texts will be evaluated using a correction rubric that grades the quality based on criteria related to 1) the relevance and accuracy of the content, 2) aspects associated with each genre (formal characteristics, style, objective-inform vs. persuade-, and degree of alignment with the reader).

Digital tools for template design

Canva (https://www.canva.com/) serves as a robust design tool with valuable applications in education, enabling the creation of visually appealing projects that simultaneously impart fundamental principles of digital design to students. This free tool provides a user-friendly platform for both students and teachers to engage in photo editing, design layout, and other design-related activities.

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8. Collaboration[1]

1. What is collaboration according to The LIFECOMP framework?

Some of the complexities individuals experience in the 21st century, both on a personal and collective level, derives from the interplay of numerous interconnected factors, some unknown, some not controllable and some unpredictable. To successfully address these complexities, effective *collaboration* among individuals, organizations, and networks is necessary. A key success factor in collaboration is embracing a diversity of perspectives and backgrounds, thus enhancing novelty and introducing a wider array of ideas and approaches for accomplishing shared tasks. Or, phrased differently, it is essential that individuals both display engagement in group activity and at the same time acknowledge and respect others. Individuals who prioritize both personal and collective well-being are better positioned as adept negotiators and problem solvers. Their willingness to collaborate enables them to find compromises and innovate. Further, collaboration fosters a sense of accomplishment and strengthen relationships among group members.

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[1] This chapter has been written by Eva Wennås Brante (Malmö University).

Digital technologies open up innovative avenues for collaboration, ranging from online collaborative environments to co-working on shared documents. Strategies for effectively utilizing the affordances of digital technologies should be developed, aligning with the principles outlined in the Digital Competence Framework for Citizens (DigComp). This framework underscores the relevance of collaboration, emphasizing the need to share data, information, and digital content through appropriate digital technologies and to utilize digital tools for collaborative processes, co-construction, and co-creation of data, resources, and knowledge.

In the LIFECOMP framework there are three descriptors associated with collaboration:

Intention to contribute to the common good and awareness that others may have different cultural affiliations, backgrounds, beliefs, values, opinions, or personal circumstances
The descriptor emphasizes respectful interaction and cooperation with diverse perspectives to foster positive relationships and effective collaboration. It stresses the value of embracing diversity for broader goals, encouraging active contribution to shared interests, and relying on each other's efforts. Key elements include providing support, exchanging resources efficiently, offering feedback for improvement, promoting quality decision-making, influencing mutual efforts, fostering trust, and aiming for mutual benefit.

Understanding the importance of trust, respect for human dignity and equality, coping with conflicts and negotiating disagreements to build and sustain fair and respectful relationships
The descriptor underscores the importance of trust, respect, conflict management, and negotiation for fostering fair and respectful relationships. Psychological safety, based on trust and respect, is crucial for effective collaboration, enabling open discussions, feedback-seeking, and innovation within teams. Managing conflicts

and learning constructive conflict resolution strategies are essential skills for interacting effectively in diverse settings, both physical and virtual, promoting the ability to address disputes and seek mutually beneficial solutions.

Fair sharing of tasks, resources and responsibility within a group considering its specific aim; eliciting the expression of different views and adopting a systemic approach

The descriptor emphasizes fair structuring of teamwork, highlighting clear roles and goals as crucial for improved dynamics and better outcomes. It underscores the emergence of collective intelligence within groups, influenced by empathy, fair participation, and the prevention of dominant voices. It stresses the systemic approach, advocating a global view of teamwork, understanding interconnected aspects and external factors for successful collaboration, leveraging diverse capabilities for optimal group outcomes.

To sum up, the tree descriptors all prioritize inclusive, respectful, and fair collaboration, emphasizing trust, diversity, fairness, and systemic thinking as pillars for successful teamwork across various contexts.

2. Collaboration processes in the university context and the role of writing

The collaborative writing landscape for university students has transformed significantly due to the emergence of new (mostly free) digital technologies, facilitating the ownership, and sharing of documents among multiple writers. The opportunities to write, revise, and comment synchronously or asynchronously within a shared document open doors to new approaches towards the collaborative writing process.

Sharples et al (1993) writes about three different methods of coordinating collaborative writing: *parallel, sequential, and reciprocal*. In

the parallel method, tasks are divided, and the final product is put together by one leader, while the sequential method can be seen more as a production line where one person starts writing and then hand over to the next in line, which may send it back or further to a third party. The reciprocal way to coordinate collaborative writing implies that all partners work on all parts, watch each other's contributions, and adjust writing accordingly (Sharples et al., 1993). Lately, the reciprocal methodology has increased due to the occurrence of web-based storage of documents and the possibilities of tracking changes, restore former versions, follow one writer's input etcetera. The possibilities to interact within a document have blurred the boundaries between synchronous and asynchronous writing.

The reciprocal form of collaborative writing touches upon Storch's (2019) definition of collaborative writing. Storch's work on collaborative writing is frequently cited and somewhat of a corner stone in the field of research on collaborative writing. Storch (2019) defines collaborative writing as " an activity that requires the co-authors to be involved in all stages of the writing process, sharing the responsibility for and the ownership of the entire text produced" (p. 40). The following part of this chapter will expand on what it takes in terms of collaboration to succeed with a more reciprocal methodology of coordinating collaborative writing in higher education. A significant distinction between individual and collaborative writing lies in the freedom an individual writer enjoys, allowing personal habits to guide the writing process. In contrast, collaborative writing necessitates the establishment of a structured collaborative writing process (Castello et al., 2023). If the collaborative writing is successful, team members go through collaborative endeavors beyond mere goal-sharing; they actively seek a collective understanding by collaboratively addressing the sub-tasks at hand.

Effects of collaborative writing
Collaborative writing has received a lot of attention in L2-research. One explanation is that when writing collaboratively, authors try

to find the accurate phrasing by negotiating wording and grammar in 'collaborative dialogues' (Swain, 2000), thus expanding their language skills. For example, from a meta-analys of 33 studies within an L2-context, Elabdali (2021) found that the collaborative written products were more accurate than individually written texts with a mean effect size of a medium magnitude (g=0.73). While the focus of this chapter is more directed towards supporting students in higher education to experience the synergies of collaborative writing as for example deeper understanding of a topic, it is still worth mentioning some of the prominent findings from collaborative writing. Studies mention positive effects as better sentence structure (Storch, 2019) and more correct use of vocabulary (Talib & Cheung, 2017). Studies also report of less fluency in collaboratively written products compared to individual written texts (Biria & Jafari, 2013) or that texts tend to be shorter when written collaboratively but with larger accuracy and more complexity in grammar (Villarreal & Gil-Sarratea, 2020). McDonough et al. (2018) claim that collaborative writing improves individuals writing skills. The group size in collaboration can matter; Dobao (2012) found that a small group of four outperformed pair work, regarding text accuracy while Sejadi (2014) found the opposite, claiming that pair work was more beneficial than group work. Peng et al. (2022) highlights the difficulties for students to find consensus about goals in online collaborative writing, when not meeting face-to-face, and thereby noted differences in students' activation levels.

Visualizing online collaborative writing

Other studies have tried to analyse *the art of the collaboration* by using a visualisation tool as DocuViz (a plug-in to Google Docs). In a study by Olsson et al. (2017, DocuViz was used in analysis of advanced undergraduates collaborative writing. The authors examined 96 visualization graphs and found that student groups wrote both synchronously and asynchronously, fluidly took on different writing and editing roles, and employed a variety of collaborative writing stra-

tegies. They could also see, via a thorough analysis of the quality of the final texts, that longer documents and documents that included balanced participation were of higher quality. Sundgren and Jaldemark (2020) analyzed 25 Google documents authored by 146 teacher students, during their first course of the programme. By scrutinizing the visualization graphs (handed in anonymously and analyzed after students had received their grades), different patterns of the writing process emerged. On one side of the continuum, students stayed within their own writing and did not interfer or interact with other students writing, on the other side of the continuum, students actively suggested, revised or added text all over the document. In the later pattern, students took turns in writing and the product was collaboratively written. Sundgren and Jaldemark conclude that to enhance collaborative skills of higher education students, the university needs to provide opportunities for practice within educational settings. Integrating online collaborate writing and visualization techniques into teaching practices within these environments could prove to be a productive strategy for fostering students' collaborative skills. Below is an activity presented with the aim to strengthen students' collaborative writing skills.

3. Activity: PREPARING an collaboratively written essay

Pedagogical foundations

Collaboration, according to the Lifecomp Framework, should be inclusive, respectful, and fair, emphasizing trust, diversity, fairness, and systemic thinking. It is easy to see that in collaboration dialogue is central; dialogue about thoughts, about words, about one own's perceptions etcetera. Dialogism, the dialogual framework on language, outlined by Linell (1998; 2009) is used here as a pedagogical foundation for the activity. Linell writes that dialogism is "theoretical and epistemological assumptions about human action, communication and cognition" (Linell, 2000) and circling around the key words

interaction, contexts, and linguistic-communicative construction. This can be explained shortly as: communication always involves interactions with others, in a specific context and this will allow individuals to through linguistic communication construct meaning, to make sense of matter.

Dialogism sees knowledge as something that is always shaped, negotiated, and adapted—both in specific situations within socio-cultural traditions and through ongoing conversations with *others*. "The other" is a recurring concept in dialogism. Linell describes the understanding and function of the other as: "It is the disruptive influences of the other which introduces tensions; the other brings in extra ("surplus") knowledge other than you had before or you had expected to encounter; she may see things from points of view that are so far strange or unfamiliar to self." (p. 7, 2000). The dialogical framework and the concept of the other align well with the descriptors of collaboration from the LIFECOMP Framework, and are thus used here as the starting point for designing an online collaborative writing task.

Most studies on collaborative writing have focused on the drafting and reviewing process (Svenlin et al., 2023) and less attention has been addressed towards the preparatory stages of collaborative writing, as reading from sources or brain-storming about content. According to Svenlin et al's scoping review (2023), even fewer studies have focused on students' outlining of texts. The activity presented here will pay particular attention to the preparatory stages needed before the online collaborative writing process starts.

Objectives of the activity
1. Strengthen collaborative skills:
   - Foster effective communication and shared responsibility.
   - Embrace diverse perspectives for a well-informed essay.

2. Encourage critical collaboration:
   - Analyze texts and engage in thoughtful group discussions.
   - Synthesize information collectively for a nuanced essay.

3. Develop collaborative writing strategies:
   • Progress through collaborative stages for effective writing.
   • Emphasize cohesive and organized group writing.

4. Promote reflective collaboration:
   • Encourage self-assessment and continuous improvement.
   • Reflect on collaborative growth and identify areas for development.

Methodology

This activity can be used in several subjects, where students should write a source based short essay. In the following example, the activity is framed in teacher education for primary school. The topic for the essay is "How can teachers affect students' reading motivation and is it teachers' job to do that?" The first moment takes approximately 30 minutes, the second slightly longer, and the third max 30 minutes.

1. Divide students into groups of four. Use the open software Padlet (or similar) and open one padlet for each group. Ask students to write their first thought around the theme. Without discussion, shift to a peer's writing and comment/follow up, shift again, until all members have read each other's ideas. Then, discuss in groups and use the ideas to lay out a structure of the text.
2. When the seminar starts, send students two for the assignment of relevant texts. Ask students to upload them in a cloud-service they use, read them and annotate in the documents. *After* completed reading, let students discuss the annotations as well as the content. Instruct students to use the annotations to complement ideas and preliminary structure from session 1. Students should now have a tentative lay-out with bits and pieces of text or references in appropriate places.
3. Each group member writes a first paragraph in their Padlet. Let students read each other's paragraphs and write what their thoughts or questions are. Then, ask students to discuss and collabora-

tively merge the paragraphs into one introduction. Now it is time to start an online shared document for writing the essay! Paste the finalized introduction and the tentative structure into the document and encourage the students to be active with comments, feedback and editing in the whole document. Students should finalize the writing seminar-time.

Evaluation

Ask students to rate between 1 and 7 which session/sub-section (brain-storming; annotated reading; writing first paragraph and commenting) was most useful, un-necessary, enlightening etcetera. Discuss in the whole class.

Digital tools to use in a collaborative writing activity

Padlet (https://padlet.com/) for brainstorming and sharing ideas. Possibility to write simultaneously in one Padlet.
Google Docs (https://www.google.com/docs/about/) for writing the actual task. Possibilities to share ownership of document, annotate and chat.
DocuViz (https://chromewebstore.google.com/search/DocuViz) for visualizing each person's input and revisions. Displays actions in Google Docs as graphs.

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Part IV.
Promoting Life Skills
through Writing Activities:
The Learning to learn Area

If we go back to the early years of C.'s schooling and her hypotheses about the role of writing in academic environments, we can practically confirm all her assumptions. Over the years, C. has witnessed how writing went from being the queen of skills to be acquired (a throne shared with Mrs. Reading) to being the perennially forgotten one, invoked only when one needs to convey what little or much they know about a subject. However, life has destined a central role for writing in C.'s life. More by intuition than direct instruction, C. has learned the potential of writing in various domains. C. cannot conceive of reading a book without writing in the margins; when she doesn't understand what she feels, she faces a blank page; when she wants to analyze a difficult problem, she grabs paper and pen for a thorough analysis. But above all, writing is the protagonist in C.'s life, given that, among all possible professional paths, C. decided to pursue an academic career and work at the university.

Nowadays, C. spends her days writing scientific papers, documents for scientific dissemination, teaching materials for her students, and various administrative and management documents. C. has managed (albeit quite self-taught) to put writing at the service of other skills and tasks. Without having had models in this regard, C. aims to innovate in pedagogical terms and become a reference for both her students and colleagues. Hence, her classes are filled with activities that require writing, even though her courses are not directly linked to language-related subjects.

C. thought she had overcome any difficulties associated with this thinking tool. What C. didn't know is that she would be proposed to apply for a project with European funds. One morning, C. receives the proposal to write a project that links reflective writing with digital tools in the university context. Being a staunch advocate of introducing writing in this field, she finds many difficulties in rejecting the proposition. However, she has never faced a task of this nature. It arouses immense curiosity and motivation in her, but at the same time, she experiences the anxiety of someone who doesn't know how to approach such an open-ended task. She thinks a good starting point could be to write a report, conducting a critical analysis of similar previous projects, searching for evidence-based actions and interventions, and trying to establish connections between what is known and what is lacking in terms of literature. But, "What is the most effective way to conduct this critical analysis?" "Is there any tool that facilitates this process?" After this initial phase, she decides to seek support from more experienced figures at the university. This action allows her to receive feedback, increase confidence in her abilities to tackle the task, and begin building a professional identity in this direction. Also, considering the deadline to submit the project, she decides to write a plan of objectives, with achievement indicators and a set schedule. This is the strategy she uses for writing papers, for her teaching work, and even for other aspects of her life, such as managing household expenses. "Will the transfer be possible?" "Will I be able to use the same method of writing, learning, and development in different contexts?" These are all questions that arise for C. in this new adventure. Undoubtedly, one of many that will connect writing with different situations and contexts throughout her life. For readers with doubts, C. manages to develop a funded project, with the original name WIDA-LOCA (Writing in the Digital Age – Learning in Online Collaborative Activities).

9. Growth Mindset

1. What is the growth mindset according to The LIFECOMP framework?

A growth mindset, characterized by openness and curiosity towards new learning experiences, coupled with the belief in one's capacity for improvement through dedication and effort, contrasts with a fixed mindset that perceives intelligence and creativity as unalterable attributes. Individuals with a growth mindset embrace challenges, persist in facing obstacles, see effort as crucial for mastery, learn from criticism, and draw inspiration from the achievements of others. This mindset facilitates a more efficient recovery from setbacks, enhancing overall achievement. People often exhibit a combination of mindsets, showing a growth mindset in specific learning areas while displaying a fixed mindset in others. This nuanced perspective, linked to self-awareness and self-direction, emphasizes the ongoing importance of developing the ability to face challenges, embrace learning, and maintain confidence in one's potential for improvement.

According to the LIFECOMP framework, the three descriptors associated with growth mindset are the following.

Awareness of and confidence in one's own and others' abilities to learn, improve and achieve with work and dedication

Individuals with a growth mindset believe in developing intelligence through effort, while those with a fixed mindset see success as effortless and innate. Educators and learners are urged to value the learning process, diverse strategies, and perseverance. Emphasizing effort quality transforms failure into an opportunity for improvement. Effective learning requires intentional, meaningful, and reflective work in task analysis and strategy selection. This approach highlights self-efficacy's role, motivating individuals to see challenges as chances for learning and growth.

Understanding that learning is a lifelong process that requires openness, curiosity and determination

It involves recognizing that self-directed, lifelong learning is essential in contemporary societies where adult learners must continually acquire and update skills to thrive in a rapidly changing job market. Learning throughout one's life occurs intentionally and incidentally in various formal, non-formal, and informal settings, necessitating a receptive and open attitude towards every interaction and experience. Conversely, curiosity is an inclination to delve deeper, displaying an eagerness to comprehend complex topics or issues and intellectually explore a diverse range of subjects.

Reflecting on other people's feedback as well as on successful and unsuccessful experiences to continue developing one's potential

This descriptor emphasizes the importance of purposeful and reflective effort in reaching learning goals. It involves self-reflection on learning outcomes, seeking input from others in challenging situations, and mastering various strategies for tasks. In a growth mindset, failures and mistakes are viewed as crucial steps toward success. Responding to setbacks, failure, and negative feedback with a growth mindset includes recognizing and addressing potential feelings of anger, defeat, insecurity, worry, incompetence, or defensiveness, while embracing setbacks as opportunities for learning and progress.

2. Growth mindset in the university context and the role of writing

Universities have become demanding contexts that seek to provide students with the necessary skills to cope with the demands of a society characterized by constant change, globalization, digitalization and environmental and social issues. Therefore, it is imperative for higher education institutions to nurture students' cross-cutting skills, understanding of sociotechnical issues, and engagement with industry and community partners. In such a demanding context, it is natural that difficulties arise that may threaten the students' self-concept. Students' beliefs about their abilities, intellectual capacities and different skills play an important role in their learning processes, their level of motivation and engagement, their academic success and, fundamentally, in their ability to respond to adversities. In other words, the mindset of students becomes a crucial element in understanding their academic trajectory in college.

Dweck and Leggett's implicit theory (1988), explores how individuals shape beliefs about personal attributes. A growth mindset, characterized by the belief in adaptability, growth, and the capacity to learn from experiences, contrasts with a fixed mindset attributing personal traits to unchangeable characteristics. Dweck (2000, 2008) argues that these mindsets significantly influence behavior and accomplishments. Numerous studies support the idea that cultivating a growth mindset positively impacts students' learning behaviors, enhances academic performance, and strengthens resilience in the face of academic challenges (Claro et al., 2016).

Mindset theory challenges the idea that success is guaranteed solely by desire, asserting that failure to achieve a goal doesn't necessarily imply a lack of sufficient desire (Healy, 2017). Instead, the theory redirects attention to individuals' beliefs in their ability to improve specific personal attributes, like intelligence. It acknowledges diverse perspectives on the flexibility of personal attributes, impacting achievements and interpersonal outcomes (Bernecker & Job, 2019). The theory delves into the incremental theory of intelli-

gence, supporting the idea that personal attributes can be enhanced (Dweck, 2012).

Extensive research has investigated the application of the growth mindset concept in educational settings, with a particular focus on primary schools (Savvides & Bond, 2021; Sisk et al., 2018). However, there is a notable scarcity of studies that have evaluated growth mindset interventions within the context of higher education. In fact, a recent meta-analysis conducted by Cheng et al. (2021) evidenced this research gap regarding the growth mindset interventions in the higher education setting. Cheng et al. (2021) also found that the most identified studies adopt an efficient "light-touch" approach. In these interventions, participants initially receive extensive information on mindset through sources like scientific articles, TED talks, seminars, and slides. Subsequently, participants engage in activities like writing exercises, assignments, journal entries, reflections, projects, and portfolio creation.

We know, therefore, that interventions aimed at increasing students' growth mindset are scarce in the University context. We also recognize some of the elements included in studies aimed at fostering this competence (e.g., scientific articles, writing exercises...). However, how can we define a growth mindset teaching pedagogy (GMST)? According to the frame proposed by Sahagun et al. (2021), a GMST pedagogy should include five elements:

1. Transform the classroom into a practical learning environment:
2. enhance in-class engagement and discussion quality by having students submit assignments beforehand;
3. offer regular feedback and improvement suggestions on students' performance;
4. permit a certain degree of failure without punitive measures;
5. afford students multiple chances to enhance their academic performance.

Until now, we can infer the potential impact of feedback and writing on enhancing the growth mindset. But what kind of feedback and writing particularly contribute to this ability? And, above all, how can we

combine them in a teaching activity? Discussing writing in the context of the growth mindset primarily involves addressing reflective writing. According to Ash and Clayton (2009), reflective writing implies three different processes and can be defined with the acronym DEAL: D (Describe a learning experience), E (Examine how this experience aligns with their learning goals), AL (Articulate Learning, encompassing both capturing past learning and drawing out implications for future benefit). Therefore, the reflective learning process involves detailing a particular event, such as a lecture, textbook content, active learning, or non-academic experience. Following this, connections are forged to and from this specific experience, encompassing links to previous personal experiences and the integration of new theories acquired through classroom or personal/professional development. This integrative thinking approach resonates with Mezirow's insight that a significant aspect of learning entails generating new interpretations to expand and fortify existing frames of reference or formulate fresh meaning schemes (Mezirow, 1990). Reflective writing assignments centered on process reflection—deliberate, structured, or systematic analysis of processes and their outcomes—can enhance student persistence by fostering the development of a growth mindset (Korstange, 2016). In terms of feedback, it will be the one applied with a formative approach that will contribute the most to improving the growth mindset. Formative feedback is defined as information conveyed to the learner with the aim of modifying their thinking or behavior to enhance learning (Shute, 2008). And how can we foster a growth mindset through reflective writing and formative feedback? One option would be through the use of rubrics. Below is an example of an activity that uses the potential of these tools.

3. Activity: Reflective rubrics

Pedagogical foundations

A rubric is a evaluative guide outlining explicit criteria for assessing the quality of written work, with distinct performance levels

associated with each criterion (Andrade et al., 2010). Rubrics enhance the objectivity, validity, and reliability of assigned ratings (e.g., Dempsey et al., 2009) while also making learning objectives visible and offering valuable feedback to identify strengths and weaknesses in a written product (Andrade et al., 2008). Therefore, rubrics can serve pedagogical purposes, and in recent decades, substantial research has explored their potential to enhance students' learning processes (Wiliam, 2011).

Employing rubrics has the potential to elevate student learning and improve instructional practices. This can be achieved through various methods, encompassing both teacher-centered and student-centered approaches. In the teacher-centered strategy, articulating assessment criteria through rubrics enables educators to enhance the alignment of learning, instruction, and assessment—a concept often termed "constructive alignment" (Biggs, 1996). In the student-centered approach, sharing the rubric with students is designed to foster their learning (Jonsson, 2008; Jonsson & Svingby, 2007). Multiple studies indicate substantial positive effects on student performance when rubrics are employed as assessment tools for learning. But in what way can rubrics contribute to the students' learning process? As indicated by the results obtained by Panadero and Jonsson (2013), the use of rubrics can enhance performance by (a) offering transparency in assessment, potentially leading to (b) a reduction in student anxiety. Additionally, the use of rubrics may (c) assist in the feedback process, (d) enhance student self-efficacy, and (e) contribute to student self-regulation. Therefore, rubrics can be beneficial in aiding student learning, especially when used in conjunction with various metacognitive activities. In the latter regard, a metacognitive activity that may be useful is reflective writing based on critical incidents. Critical incidents, as proposed by Tripp (1993), serve as platforms for facilitating critical reflection. These incidents involve interpreting significant episodes within a specific context rather than routine occurrences. Critical incidents are typically personal and only become problematic if the individual perceives them as such. The reflective analysis of an

incident, occurring after its conclusion, is what defines it as critical (Bruster & Peterson, 2013). How can we combine formative feedback with reflective writing from critical incidents? We detail it below.

Objectives of the activity
1. Learning to use a reflective rubric to increase growth mindset.
2. Learning to reflect on critical incidents.
3. Increase metacognition about one's own learning process.

Methodology

This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of education sciences with preservice teachers. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this first session students are introduced to the concept of growth mindset. For that purpose, students are asked to read a scientific article titled "You Can Grow Your Intelligence". This article, originally utilized in the Blackwell et al. (2007) experiment and slightly modified for the Paunesku et al. (2015) experiments, conveys the notion that the brain can enhance its intelligence through increased challenges, akin to the development of a muscle. Furthermore, students will be provided with an explanation of what critical incidents are in relation to the personal learning process.

Session 2: In this session, students are asked to transfer the content of the paper to a formative session with elementary school students. To do so, they will have to elaborate a small didactic unit in which they will teach the concept of growth mindset and promote the children's positive self-concept and reflection. For the development of this activity, students will receive a formative rubric in which all indicators of success will be detailed. This session will be devoted to an explanation of the use of the rubric.

The rubric (included below) will be composed of three levels: poor,

average or outstanding level of achievement. At each level there will be indicators that will refer to:

1. if the learning outcomes are well defined and adjusted to the age of the children;
2. if the methodology has a participatory and constructive approach that allows for reflection and the development of the growth mindset;
3. if the evaluation method allows for certain evidence of the acquisition of the competency.

This rubric will also include a box, in which students will have to write and reflect on the critical incidents they encounter during the development of the work. How will the rubric be used? Students will begin by designing their teaching unit. In a self-assessment exercise, they will have to use this rubric to evaluate their work at least three times before submitting the final product. Each time they use the rubric, they will need to assign a grade to their draft based on the predefined criteria. Additionally, they will have to document critical incidents associated with each phase of the process or success indicator. All problems or critical incidents they encounter must be analyzed based on three questions: Why is this a critical incident for me? How do I feel as a learner right now? How can I resolve this issue to enhance the quality of my work? An example of a critical incident could be: I don't know the cognitive development of an elementary school child and how materials should be appropriately tailored.

Rubric for Assessing Learning and Growth Mindset in Children's Activities

Criteria	Poor	Average	Outstanding
Learning Outcomes Definition	Learning outcomes are unclear, not age-appropriate, or irrelevant.	Learning outcomes are partially defined and somewhat age-appropriate.	Learning outcomes are well-defined, age-appropriate, and align with developmental stages.

Methodology and Growth Mindset	Methodology lacks a participatory or constructive approach. No room for reflection or growth mindset development.	Methodology shows some attempts at participation and construction but lacks consistency. Limited reflection opportunities.	Methodology is consistently participatory, constructive, and encourages reflection, fostering the growth mindset in children.
Evaluation Method and Evidence	Evaluation method is arbitrary, providing no clear evidence of competency acquisition.	Evaluation method offers some evidence of competency but lacks consistency or specificity.	Evaluation method is well-structured, providing clear and varied evidence of competency acquisition.

Reflection Box: Critical Incidents

Please use the space below to write about any critical incidents encountered during the development of your work. Reflect on challenges, successes, and moments that contributed to your learning and growth mindset. Consider how these incidents align with the learning outcomes and methodology outlined in the rubric.

Session 3: This session will take place once the teaching unit is completed (the teacher will determine how much time to give students to complete the didactic unit). During this session, students will be required to write an essay reflecting on how the rubric has contributed to their self-awareness as learners, improved the quality of their work, increased motivation for the task, and transformed critical incidents into challenges that can be overcome.

Evaluation

Students will need to submit all the rubrics (along with the critical incidents) they have completed throughout the process. In other words, each student will have to present at least three rubrics in addi-

tion to the final material, namely, the teaching unit on growth mindset for elementary school children. Furthermore, students will be required to submit their essay on the impact of the reflective rubric on their own competence in growth mindset. The teaching unit will be assessed based on the quality criteria outlined in the formative rubric. Both the essay and the critical incidents will be evaluated based on the inclusion of metacognitive elements and personal reflection on the individual learning process.

Digital tools for creating and designing reflective rubrics

A "rubric maker" (https://rubric-maker.com/) is a tool or software application designed to assist educators and instructors in creating rubrics for assessing assignments, projects, or other student work. Rubrics are scoring guides that outline specific criteria and levels of performance, providing a structured and transparent way to evaluate and grade student performance. A rubric maker typically allows users to customize and generate rubrics based on their specific assessment needs, including criteria, performance levels, and descriptors. This tool aims to streamline the process of creating clear and consistent grading standards, making assessment more objective and understandable for both educators and students.

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10. Critical Thinking

1. What is critical thinking according to The LIFECOMP framework?

Critical thinking, crucial for navigating uncertainty, complexity, and change, is closely associated with managing learning and "mindful agency." This involves skillfully overseeing the learning process, managing emotions related to challenges, and taking responsibility in the learning journey. Critical thinking is a self-directed, skillful analysis of information, beliefs, or knowledge, requiring continual reconstruction of one's thinking. It involves knowledge of methods for assessing and generating new knowledge, as well as strategies for problem-solving. Critical thinkers are aware of egocentric and sociocentric thinking tendencies, willing to assess and evaluate information, and to cultivate intellectual virtues like integrity, humility, empathy, justice, and confidence in reason. In the information-saturated "post-truth" era, citizens must discern between facts, propaganda, opinions, and rumors by recognizing the influence of personal values on evaluating arguments. Perspectives on critical thinking highlight both divergent and convergent thinking, emphasizing creative idea generation and evaluative processes for optimal solutions. Critical thinking, intertwined with creativity, is seen as a higher-order skill linked to teachable or stimulatable learning dispositions. Divergent

thinking involves playful exploration of ideas, demanding affective and cognitive resources, while critical thinkers exercise self-regulation and a willingness to critically assess and evaluate information.

According to The LIFECOMP framework, the three descriptors associated with critical thinking are the following.

Awareness of potential biases in the data and one's personal limitations, while collecting valid and reliable information and ideas from diverse and reputable sources

Recognizing the significance of critical thinking, this description emphasizes the need for acknowledging knowledge limitations and biases. Various cognitive biases, including confirmation bias and belief bias, can hinder accurate information assessment. In the age of unfiltered online information, individuals must be aware of the risk of encountering misinformation. It is crucial to actively fact-check information, evaluate source credibility based on accuracy and reliability, and prioritize primary sources over secondary ones whenever possible.

Comparing, analyzing, assessing, and synthesizing data, information, ideas, and media messages in order to draw logical conclusions

In the digital era flooded with data, the focus is on deriving meaning rather than accumulating information. This requires open-mindedness and a commitment to critically assess information, ideas, and media messages. Critical thinkers must evaluate situations, question assumptions, and assess the coherence of arguments, scrutinizing them for potential biases and adhering to rigorous thinking standards.

Developing creative ideas, synthesizing and combining concepts and information from different sources in view of solving problems

Creativity is vital for effective problem-solving and innovation. Developing creativity involves using imagination, intuition, and a playful mindset with some risk-taking. A safe and stimulating environment encourages individuals to embrace creative risks. Creativity

empowers individuals to challenge assumptions, exhibit fluency, flexibility, originality, and metaphorical thinking. Cultivating traits like openness, courage, curiosity, playfulness, imagination, self-efficacy, and persistence, along with self-awareness and ethical considerations, enhances creative thinking. Nurturing habits of persistence, collaboration, and discipline sustains creativity as valuable "habits of minds.

2. Critical thinking in the university context and the role of writing

Critical thinking, often described as a crucial higher-order skill, is widely acknowledged for its pivotal role in logical reasoning, decision-making, and problem-solving (Butler, 2012; Halpern, 2003). Critical thinking also provides a skill set that can be employed in addressing challenges to democracy. Emphasizing critical thinking in education offers an opportunity to empower learners with the necessary skills to counteract the rise of xenophobic populism and reinforce democratic values in society (Golden, 2023). Being that, educators and policymakers in higher education have increasingly focused on critical thinking, making it a key learning outcome for college students in numerous institutions. Notably, the Assessment of Higher Education Learning Outcomes (AHELO) project, backed by the Organisation for Economic Co-operation and Development (OECD, 2012), identifies critical thinking as a fundamental competency in the assessment of general learning outcomes among college students globally.

Despite the efforts of higher education institutions to foster critical thinking, given that it is a fundamental competence to face the challenges of today's society, the performance of students in this competence remains poor. For instance, a significant number of students leave college with a deficiency in their ability to comprehend, assess, or articulate arguments (Larson et al., 2009). This observation aligns with the findings of researchers who have demonstrated that a significant proportion of individuals, both within and beyond aca-

demic settings, lack an inherent aptitude for critical thinking (Kuhn, 1991). In essence, critical thinking seems to be a skill that must be actively taught but does not consistently undergo favorable development in students. Now, in order to invest efforts in designing effective instructional methods that enhance critical thinking in University students, we must first conceptualize what critical thinking is. Here we encounter the first challenge, taking into account the variability of different theoretical frameworks.

One frequently referenced definition of critical thinking comes from the 1990 Delphi Report by the American Philosophical Association, representing a significant two-year project aimed at establishing an international expert consensus on the definition of critical thinking. According to the resultant definition, critical thinking is described as "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference as well as an explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione, 1990, p. 3). Fisher (2011) conducted an extensive examination of various definitions of critical thinking and found shared characteristics among them. These definitions often present critical thinking as a skill-based activity that must meet intellectual standards like clarity, relevance, adequacy, and coherence. Additionally, they underscore the importance of interpreting and evaluating observations. Of note, several authors integrate into their conceptualizations of critical thinking the idea that its purpose is to guide individuals in making well-informed decisions and judgments regarding beliefs and actions (Daniel & Auriac, 2011; Johnson & Hamby, 2015). Moreover, critical thinking has been characterized as a multidimensional framework that includes cognitive, dispositional, motivational, attitudinal, and metacognitive elements, as outlined by Bensley and Spero (2014) and Wechsler et al. (2018).

As previously mentioned, there is a consensus that critical thinking should be taught in the University context. While thinking is an inherent process, lacking intervention and structured support may

lead to biased, distorted, partial, uninformed, and potentially prejudiced outcomes. The pertinent question then is what is the best way to promote critical thinking through teaching programs? According to Ennis (1989), we can distinguish four approaches to teach critical thinking: general, immersion, infusion, and mixed. The general approach emphasizes explicit instruction of critical thinking abilities separately from subject matter. In contrast, the immersion approach is subject matter-driven, with critical thinking principles not explicitly stated, encouraging learners to acquire skills through exposure. The infusion approach intertwines subject matter with explicit critical thinking instruction, fostering the application of critical thinking to familiar subjects. The mixed approach combines the general approach with either immersion or infusion, providing additional support for educators by separating critical thinking instruction from subject-specific teaching. Regardless of the chosen instructional approach, critical thinking education operates under the premise that there are identifiable, teachable thinking skills that transcend specific domains. These skills, believed to be transferable to students, aim to equip them for effective application in various real-life scenarios and future professional contexts (Nickerson, 1988). The overarching goal of critical thinking instruction is to help students acquire and apply these domain-independent thinking skills to navigate challenges in everyday life (Ennis, 1989). Nonetheless, an ongoing debate centers on whether critical thinking is better suited for standalone courses alongside the standard curriculum or integrated within academic disciplines (Ennis, 1989; Nickerson, 1988; Resnick, 1987). The unresolved question pertains to whether critical thinking skills should be imparted in domain-independent (general) courses or embedded within existing subject-matter courses. A systematic review of the effectiveness of critical thinking instruction in higher education conducted by Tiruneh et al. (2014) revealed that the effectiveness of critical thinking instruction is impacted by factors within the instructional environment, including instructional variables such as teaching strategies and critical thinking instructional approaches. Additionally, student-related variables

such as year level and prior academic performance play a role. The overall findings suggest a trend toward integrating critical thinking instruction within academic disciplines, but they do not provide substantial support for the effectiveness of specific instructional strategies in facilitating the acquisition and transfer of critical thinking skills. In summary, there is no conclusive data on the best approach to teaching critical thinking at the University level. Even so, some of the methodologies typically employed by teachers to favor critical thinking are the following (Bezanilla et al., 2019): debates and cooperative work, questions and enquiries, problem solving (problem and project based learning), case study, oral presentations (teachers and students), real-world activities, feedback, drama and writing activities (writing assignments like essays, reports or argumentative activities; concept map and argument mapping; practical activities followed by a written reflection, for example, a diary). In this chapter we will focus on writing activities as a method to enhance critical thinking.

Throughout history, writing has been linked to the development of critical thinking skills. Scholars like Applebee (1984) argue that writing enriches thinking by requiring the explicit articulation of ideas and the evaluation and selection of tools for effective discourse. Resnick (1987) emphasizes that writing should serve as an opportunity for reasoning through arguments, fostering higher-order thinking. Marzano (1991) suggests that, when used to restructure knowledge, writing enhances higher-order thinking, enabling students to address complex problems through careful argumentation. Additionally, writing is employed to enhance conceptual learning, particularly within disciplines, nurturing a deeper level of analytical thinking closely tied to critical thinking. For instance, Stapleton (2001) emphasizes the profound interconnection between thinking and writing, emphasizing the need for a thinking mind to manifest in written expression. Within his work, Stapleton (2001) delineates six essential elements of critical thinking in written texts. These include arguments, which are claims supported by reasons and often represented as the main idea or "thesis statement". Reasons are statements providing support for claims and explaining

their credibility. Evidence consists of statements or assertions reinforcing the argument, while recognition of opposition and refutation involves acknowledging counter viewpoints or alternative interpretations. The conclusion encapsulates a statement or series of statements through which the writer conveys their intended belief to the reader. Finally, Stapleton (2001) addresses fallacies, identifying errors in reasoning that may be present in the text. But how can we contribute to critical thinking through writing? Below, we present an example of an activity.

3. Activity: Scientific argumentation to develop critical thinking

Pedagogical foundations

Over the past decade, there has been a growing emphasis on the educational practice and foundational skill of scientific argumentation in global science education (Giri & Paily, 2020). Student engagement in scientific argumentation enhances their understanding of science across conceptual, epistemological, and methodological dimensions (Sampson & Blanchard, 2012). This active involvement not only enriches comprehension but also promotes critical thinking, reflection, and evidence evaluation among students in the scientific context (Bathgate et al., 2015; Erduran & Jimenez-Aleixandre, 2007). It is essential to note that the term "argumentation" in science education diverges significantly from its everyday usage, as it does not denote a heated exchange of opinions between adversaries. Instead, in this educational context, argumentation is characterized as a discourse where knowledge claims are collaboratively and individually constructed and evaluated based on empirical or theoretical evidence (Duschl et al., 2007). Psychologists argue that involvement in argumentation activates higher-order thinking skills, fostering the development of critical thinking (Jiménez-Aleixandre et al., 2000; Nussbaum & Sinatra, 2003). Consequently, this engagement leads to the generation of higher-quality responses characterized by the inclusion of valid justifications and the ability to refute alternative

perspectives (Iordanou, 2013). And how can scientific argumentation and, consequently, critical thinking be promoted in the classroom? A good method may be to apply Toulmin's Argumentative Pattern (TAP, 1958, see figure 1), in combination with writing activities. TAP provides a comprehensive framework for understanding the components of an argument. It delineates a cohesive structure involving a claim, supporting data and evidence (*i.e.*, the grounds), warrants establishing the link between the data and the claim, backings strengthening the warrants, and rebuttals identifying circumstances where the claim might be invalid. The qualifier shows that a claim may not be true in all circumstances (e.g., maybe, sometimes, ...). In alignment with Toulmin's definition, a claim is portrayed as a publicly asserted statement seeking general acceptance. Grounds denote the specific facts supporting a claim, while backings involve generalizations explicitly articulating the experiential basis for the credibility of arguing methods. Rebuttals address exceptional circumstances that could weaken supporting arguments. Toulmin also underscores the role of qualifiers, which are phrases indicating the level of reliance placed on conclusions in light of available supporting arguments.
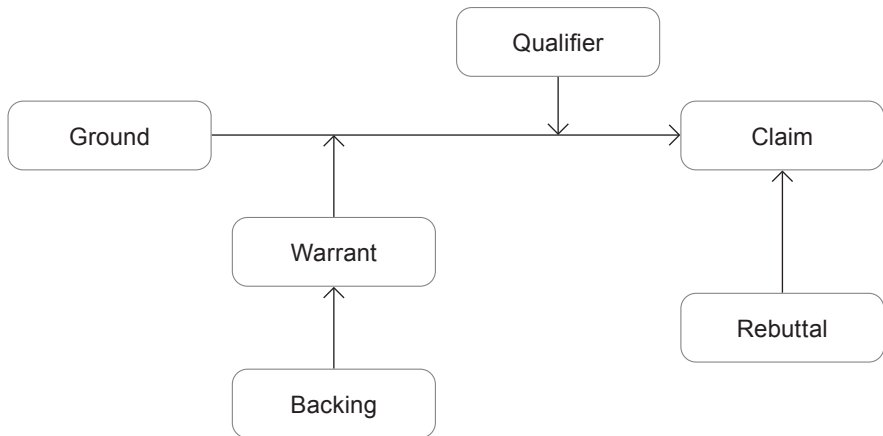

Fig. 1. Toulmin's argumentation pattern

Objectives of the activity
1. Develop reliable critical thinking and critical reading and writing strategies.
2. Identify author, source title, thesis, audience, purpose and tone in written prompts.
3. Evaluate supporting evidence for arguments.
4. Express clear written arguments about scientific topics.

Methodology

Although this activity can be carried out in any disciplinary area to promote critical thinking, we have decided to frame it in the field of science due to the great interrelation between scientific argumentation and critical thinking. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this session, students will be introduced to Toulmin's argumentative pattern, explaining its different elements (claim, data, warrant, qualifier, backing, and rebuttal) through the analysis of an example text. The teacher will pose questions that will delve into the authenticity and adequacy of the data, the logical connection between the data and the evidence, and the overall quality of the warrant supporting the argument in the example text.

Text example analyzed in terms of Toulmin's model

The Impact of Climate Change on Ocean Ecosystems

Claim
The rising global temperatures due to climate change have a profound and detrimental impact on ocean ecosystems.

Ground
Scientific data from marine research expeditions consistently show an increase in sea temperatures, leading to the bleaching of coral reefs and disruptions in the migratory patterns of marine species. Additionally,

studies document the alarming rise in ocean acidity levels, adversely affecting shell-forming organisms.

Warrant
The connection between rising global temperatures and changes in ocean ecosystems is supported by well-established principles of climate science. As the Earth's temperature increases, it directly influences ocean temperatures and, subsequently, the delicate balance of marine life.

Qualifier
While it is acknowledged that natural factors can contribute to shifts in oceanic conditions, the preponderance of scientific evidence strongly supports the assertion that human-induced climate change is a primary driver of the observed alterations in ocean ecosystems.

Backing
This claim is supported by the Intergovernmental Panel on Climate Change (IPCC) reports, which compile the findings of thousands of scientists worldwide. The consensus among experts in the field reinforces the validity of the claim, further substantiating the link between climate change and its impact on oceanic environments.

Rebuttal
Critics may argue that the observed changes in ocean ecosystems could be attributed solely to natural climate variability. However, an in-depth analysis of the data, considering the rapid pace and extent of changes, emphasizes the human contribution to the warming planet and its direct correlation with the observed disruptions in oceanic habitats.

In conclusion, the claim that climate change significantly affects ocean ecosystems is well-supported by a wealth of scientific data, backed by reputable institutions, and stands up to potential counterarguments through a careful consideration of natural variability and the weight of human influence on the planet's climate.

Session 2: In this second session, students will receive four essays on the topic of climate change. These essays will present the topic as an ill-structured problem, defined by Barrows (2002) as a complex

issue with no single solution, prompting students to consider various alternatives. Students will then be asked to identify unrealistic statements and illogical assumptions in the essays. Students will also be asked to evaluate aspects related to the source (information about the authors of the essays, position on climate change, target audience, etc.). This evaluation should be written in a report on the quality of the essays presented. Following this phase, students will be asked to write an argumentative essay to provide a critical response to the problem of climate change. They will have to express their own opinion, indicating their agreement or disagreement with the arguments presented in the preceding essays read.

Extract form Essay 1

Optimistic Perspective - "Embracing Green Innovations for a Sustainable Future"

Climate change presents an opportunity for innovation and positive transformation. As we face the challenges of a warming planet, the global community can come together to develop and embrace green technologies. These innovations not only mitigate environmental damage but also foster economic growth. By investing in renewable energy sources, sustainable agriculture, and eco-friendly infrastructure, we can pave the way for a more resilient and harmonious future.

Extract form Essay 2

Pessimistic Perspective - "Irreversible Damage: The Dire Consequences of Climate Change"

The trajectory of climate change paints a grim picture of irreversible damage to our planet. Rising temperatures, extreme weather events, and the loss of biodiversity signal a looming environmental catastrophe. Despite international efforts, the pace of change may outstrip our capacity to address it effectively. This pessimistic perspective emphasizes the urgent need for comprehensive and immediate action to mitigate the devastating consequences of climate change.

Extract form Essay 3

Pragmatic Perspective - "Balancing Progress and Preservation in the Face of Climate Change"

Striking a balance between human progress and environmental preservation is paramount in the climate change discourse. While acknowledging the reality of global warming, a pragmatic approach involves implementing policies that address both environmental concerns and societal needs. Sustainable practices, conservation efforts, and responsible consumption habits can contribute to minimizing our ecological footprint without stifling progress. This perspective advocates for a middle ground that safeguards our planet without compromising human development.

Extract form Essay 4

Climate Skeptic Perspective - "Questioning the Narrative: A Critical Look at Climate Change"

A segment of the population remains skeptical about the extent and causes of climate change. While recognizing some observable shifts in weather patterns, skeptics question the attributed human influence. They argue for a more comprehensive examination of historical climate fluctuations, asserting that natural variability might play a more significant role than suggested. This perspective urges for continued open-minded scientific inquiry and a critical evaluation of the climate change narrative.

Session 3: This will be a pair work session. Students will have to exchange their argumentative essays with a classmate. The objective will be to translate the information in this essay into a diagram, in which the different units of information are grouped according to the categories of Toulmin's model. This exercise will be elaborated with the partner's essay and then a dialogue will be generated within the pair to share the results.

Evaluation

Both the written report on the quality of the essays (initial texts

on climate change) and the argumentative writing produced by the students will be evaluated using a rubric. This rubric will include the categories of Toulmin's model, so that it will be assessed if the students are able to analyze texts and produce writings, following this pattern of critical reasoning.

Digital tools to identify and evaluate scientific arguments, following the Toulmin's Argumentative Pattern

MindMup (https://www.mindmup.com/) is an online mapping tool that allows users to create and share mind maps with or without pre-set templates. The instructor can provide a template for argument patterns (with two or more perspectives) or ask students to create their own map before and/ or as they progress in the writing of their essay.

Online inquiry tool (https://onlineinquirytool.org/latest/) is a research-developed tool (Hämäläinen et al., 2022) to create argumentative maps based on Toulmin's argument pattern theory.

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11. Managing Learning

1. What is managing learning according to The LIFECOMP framework?

Managing learning involves fostering motivation for the development of both metacognitive knowledge and metacognitive regulation. Metacognitive knowledge encompasses an understanding of general cognition, personal knowledge states, and one's strengths and weaknesses as a learner. It also includes knowledge about the task at hand, such as its difficulty level and suitable strategies, along with general approaches to learning, thinking, and problem-solving. Metacognitive procedural regulation applies this knowledge to plan, monitor, and evaluate one's own learning. Motivation, characterized by energy, direction, and persistence, is a crucial drive for learning. Intrinsic motivation, driven by personal rewards, encourages engagement in learning activities, while extrinsic motivation, linked to external rewards, can be influenced by societal pressures. Learning environments that address basic psychological needs, like autonomy, relatedness, and competence, are more likely to foster positive motivation and enhance learning outcomes. Awareness of one's learning dispositions, motivations, and reflective practices plays a pivotal role in managing learning, facilitating meaningful learning where new knowledge is consciously integrated with prior mastery. Lifelong lear-

ning requires the development of self-regulatory skills, encompassing metacognitive, motivational, and behavioral processes initiated by learners to acquire knowledge and skills. This involves goal setting, planning, learning strategies, self-reinforcement, and self-instruction, ultimately promoting a growth mindset and intrinsic motivation.

According to The LIFECOMP framework, the three descriptors associated with managing learning are the following.

Awareness of one's own learning interests, processes and preferred strategies, including learning needs and required support

This description underscores the significance of self-awareness and self-knowledge in learning, emphasizing the ability to reflect on one's thinking processes as a learner. It includes evaluating task performance, considering self-efficacy, motivation, and interest in learning. Accurate self-awareness is crucial for effective action, and learners' belief in their self-efficacy influences persistence, effort, and interest in learning. Higher self-efficacy is associated with a willingness to tackle challenging goals and invest more resources. Learners should also be aware of their learning preferences, attitudes, and values. In the collaborative learning process, openness to learning from others and a sense of belonging to a learning community are vital, especially in formal education. Cooperative learning, emphasizing positive social interdependence, yields increased interest, better outcomes, improved relationships, and higher self-esteem compared to competitive or individualistic settings.

Planning and implementing learning goals, strategies, resources and processes

This description underscores the crucial role of self-regulation in the learning process. Self-regulated learners possess the ability to independently navigate their learning, set goals, self-motivate, and employ effective strategies for goal achievement. The process encompasses planning, implementation, and monitoring of learning activities, with planning based on understanding goals and self-knowledge.

Monitoring involves awareness of comprehension and performance, enabling learners to persist with successful strategies or adjust ineffective ones. The capacity to generate questions for assessing understanding is a vital aspect of metacognitive regulation. Self-efficacy and self-regulation are interrelated, with improved self-regulatory skills positively influencing self-efficacy, and higher self-efficacy fostering increased utilization of self-regulation strategies.

Reflecting on and assessing purposes, processes and outcomes of learning and knowledge construction, establishing relationships across domains

This description underscores the importance of reflection for improving cognitive and emotional self-awareness in learning. Reflection involves evaluating outcomes, identifying errors, and self-correction. Continuous formative assessment enables learners to adjust strategies, tasks, plan, and redesign for better outcomes. Recognizing similarities in learning processes across domains allows the transfer of strategies. Knowledge of strategies is crucial, but an effective learner needs a reflective attitude to select the most suitable approach. Assessing the process helps identify and address factors hindering satisfactory results.

2. Managing learning in the university context and the role of writing

Higher education institutions and, on a more general level, societies are undergoing a rapid digital transformation, which has been accelerated by the COVID-19 pandemic.

The urgency to curb the spread of the infection led to the temporary closure of educational institutions. These closures, affecting more than 70% of the global student population, compelled educational institutions to seek alternative measures to ensure the continuity of education (Giovannella, 2020). In response to the closure of Universities, UNESCO recommended the implementation of online learning applications and platforms. This approach facilitated communication among Uni-

versities, teachers, and students, thereby enabling the continuation of education despite the challenges posed by the pandemic (UNESCO, 2020). To support the digital transformation plans of higher education institutions and the creation of a high-performing digital education ecosystem, we need to develop students' digital readiness, resilience and capacity, and stimulate innovative learning and teaching practices. One central aspect particularly influenced by the digital transformation of higher education is represented by students' self-regulated learning, a construct that we discussed already in chapter 3. Indeed, a key obstacle faced by students in remote learning is the absence of face-to-face interaction. In a traditional educational setting, interaction typically involves the learner, the instructor, and the content. Nevertheless, the use of online learning applications and tools introduces added complexity to this interaction. Being that, opportunities for receiving feedback and monitoring their knowledge acquisition process became more limited. This circumstance only served to highlight the importance of metacognition at an educational level where it is assumed that students have already acquired the ability to manage their own learning. But is that true? Can we assume that University students are capable of acquiring knowledge autonomously? The Covid-19 situation highlighted that university students do encounter difficulties at this level. As an example, research conducted in the United Kingdom revealed a 36% overall decrease in the frequency of study activities among students. This reduction was primarily attributed to challenges in workload management and insufficient interaction with peers (Aristeidou & Cross, 2021). These data suggest that even University students encounter difficulties at the level of metacognitive awareness regarding their learning process.

Metacognition refers to the distinct human capacity to contemplate, observe, and manage one's own knowledge and thoughts (Flavell, 1979). It is frequently examined in conjunction with self-regulation and self-regulated learning, illustrating the intricate array of skills that individuals use to govern their behavior and learning in pursuit of specific objectives (Zimmerman & Schunk, 2011). Metacognition has been identified as a pivotal element of agency and is progressively

recognized as a facilitating factor in self-regulated learning. It aids individuals in transferring skills, knowledge, and strategies across various contexts and situations (Azevedo & Witherspoon, 2009; Negretti, 2012).

In educational psychology, Self-Regulated Learning is viewed as a process where learners actively manage their cognitive, emotional, and behavioral efforts. In chapter 3 we emphasized the emotional and motivational component, but self-regulated learning involves also strategically planning, executing appropriate strategies, and evaluating outcomes. Self-regulated learners employ cognitive, metacognitive, affective, and socio-cultural strategies throughout this process. These strategies operate in three cyclical phases: forethought, performance, and evaluation. The forethought phase involves planning, setting goals, organizing resources, and fostering self-motivation. In the performance phase, learners implement strategies, monitor processes, adjust as needed, and sustain motivation. The evaluation phase focuses on assessing outcomes, reflection, and planning for future learning. Effective self-regulation equips learners with attributes for active, autonomous, and constructive learning, leading to improved academic achievement, study skills, realistic learning goals, a supportive environment, seeking help proactively, sustained motivation, diverse task strategies, and enhanced progress monitoring (de Bruin et al., 2011; Elstad & Turmo, 2010). Self-regulation, encompassing learning behaviors, strategies, motivation, and metacognition, is integral to academic success (Schunk & Ertmer, 2000).

Self-regulated learning is a higher-order skill that impacts all areas of knowledge acquisition as transversal ability. But what is its relationship with writing, and how can the latter contribute to its development? According to the model proposed by Zimmerman and Risemberg (1997), writing is composed of three fundamental forms of self-regulation: environmental, behavioral, and personal and covert; each of which is divided into specific self-regulation processes (*environmental:* 1) environmental structuring -selecting, organizing and creating effective writing settings and conditions- 2) self-selected models, tutors or

books that serve as sources of writing knowledge and skills; *behavioral:* 3) self-monitoring one's own performance, 4) self-consequenting based on one's own performance and 5) self-verbalizations employed to enhance the process of writing; *personal/covert:* 6) time planning and management, 7) goal setting, 8) self-evaluative standards, 9) use of cognitive strategies and 10) use of mental imagery). Zimmerman and Risemberg (1997) argue that these three modes of self-regulation interact cyclically, allowing the writer to monitor their entire process. Many interventions aimed at improving writing processes are based on the enhancement of self-regulatory strategies (Harris & Graham, 1992; 2018). It is to be expected, therefore, that the use of writing in a self-regulated way will also have a positive impact on metacognitive processes applied to other fields of knowledge, if we understand self-regulation as a higher-order competence underlying all learning processes. But how can we contribute to self-regulation and learning management through writing? Below, we present an example of an activity.

3. Activity: Learning journals

Pedagogical foundations

Learning journals can be characterized as a writing assignment where students independently articulate their thoughts on academic content, thereby enhancing the depth and significance of their learning experience. This being so, learning journals can be conceived as a writing tool with an epistemic purpose; a perspective that was first promoted by the educational reform movement "writing across the curriculum" in the United Kingdom and later popularized in different educational institutions in the USA (Britton et al., 1975; Nückles et al., 2020). And how is a learning journal developed? Students should write down their reflections on both their learning experience and the content covered in a particular lesson. In addition, they should inquire about aspects that remain unclear to them and outline the steps they plan to take to resolve those uncertainties. Through

this approach, learners can implement advantageous cognitive strategies such as organization and elaboration, along with metacognitive strategies such as monitoring and regulation. The creation of a learning journal involves a self-directed approach to writing, enabling learners to organically develop their ideas about the subject matter. Learners have the freedom to personally choose which aspects of a learning episode necessitate deeper reflection. Unlike the traditional perspective, there is no requirement for learners to adhere to a specific rhetorical structure during this reflection. This is in contrast to genres like argumentative essays or scientific reports, as learning journals intentionally lack a standardized rhetorical structure.

From a cognitive load theory perspective, journal writing holds great promise for fostering self-regulated learning due to two key factors. Firstly, writing inherently allows the externalization of thoughts onto paper or a computer screen, preserving them for the writer's review and further development (Klein, 1999). This process substantially reduces the information processing load on working memory, freeing cognitive capacity for metacognitive reflection, including monitoring and regulation. Secondly, the externalized thoughts can function as valuable feedback, initiating associative processes that aid in idea generation and guidance. Furthermore, cognitive offloading is enhanced by the "genre-free principle" in journal writing, allowing learners to deviate from prescribed rhetorical standards. This unique aspect means a quality learning journal entry is not bound by well-defined rhetorical structures, potentially appearing imperfect to traditional linguistic criteria. Despite this, such entries can be highly beneficial to the writer's learning progress. The genre-free principle is seen as facilitating self-regulated learning through journal writing by relieving the writer from the need to invest substantial mental effort in conforming to rhetorical schemata, especially pertinent for novice writers. Despite the advantages of learning journals, students may encounter difficulties when crafting them independently. That is why the following activity is based on generating prompts aimed at serving as a scaffold for the construction of these epistemic writing tools.

Objectives of the activity
1. Learning how to keep a learning journal.
2. Promote metacognitive awareness and self-regulation through learning journal writing.
3. Promote content acquisition through learning journal writing.

Methodology

This activity can be developed in any disciplinary area. In this chapter we are going to frame it in the field of knowledge of engineering. The activity consists of three sessions, each lasting about fifty minutes.

Session 1: In this session, students are introduced in a theoretical and concise manner to what learning journals are and what are their advantages. Next, the class is divided into four teams or groups. Two of the groups will be responsible for creating prompts related to cognitive aspects and the other two groups will have to create prompts related to the metacognitive dimension.

The first group in the cognitive dimension will be asked to generate, through the brainstorming technique, prompts that are linked to the organization of the content of the journal (e.g.: "How can you best structure the learning contents in a meaningful way?"; "Which headings and subheadings enable you to arrange the learning contents in a logical order?"). The second group in the cognitive dimension will be asked the same activity, but the prompts must be aimed at developing and internalizing content (e.g.: "Which aspects of the learning materials do you find interesting, useful, convincing, and which not?"; "Try to illustrate the most important content by giving your own examples"). At this stage, the prompts will be formulated in an abstract way and not in relation to any specific lesson or curricular content.

The first group in the metacognitive dimension will be asked to generate, also through the brainstorming technique, prompts related to monitoring aspects (e.g.: "Which main points have I already understood well"; "Which main points have not I understood yet?"). The second group in the metacognitive dimension will be asked the

same activity, but the prompts will be aimed to plan remedial strategies (e.g.: "What possibilities do I have to overcome my comprehension problems?"; "For each comprehension difficulty: Try to plan a remedial action and conduct it. Please describe what you did and how your understanding changed").

Session 2: This session will be based on specific curricular content recently addressed. Taking into account that we have framed this activity in the field of engineering, a possible topic could be *"The terrain topography in the design of roads and highways".* This session will begin with a group discussion in which, initially, one representative from each team from the previous session will share the prompts generated for each dimension. Next, each team will have to draft a learning journal, encompassing both cognitive and metacognitive dimensions for the chosen curriculum content.

Session 3: In this session, students will receive a good model of a learning journal for the specific curriculum content. This model may be presented in written format or through a video in which a student (actor) develops a chapter of their learning journal on the chosen topic. This good example of a learning journal will be presented and discussed in class, establishing connections and comparisons with the learning journal draft created in the previous session.

Example of learning journal model

Learning Diary: Exploring the World of Engineering (Thermodynamics)
Date: January 23, 2024

Metacognitive Reflection
Today marked a pivotal point in my journey through engineering studies. As I delved into the complexities of thermodynamics, a subject both daunting and intriguing, I found myself grappling with the metacognitive aspects of learning. The initial confusion and frustration transformed into a conscious effort to understand my learning process.

Recognizing the need for a deeper understanding, I engaged in self-assessment. Breaking down the problem-solving steps, I identified areas of strength and weakness. It became clear that my conceptual foundation needed strengthening. Taking a step back, I revisited earlier lessons, connecting the dots between fundamental principles and the intricate web of thermodynamic laws.

A moment of revelation occurred during a group study session. Collaborative learning, a metacognitive strategy I hadn't fully embraced before, became a catalyst for clarity. Explaining concepts to my peers reinforced my own understanding and revealed gaps that needed attention. This collaborative approach not only enhanced my comprehension but also provided a fresh perspective on problem-solving strategies.

Curricular Content Acquisition

The core of today's learning journey revolved around thermodynamics, a subject that initially felt like an intellectual mountain to climb. The lectures, supplemented by rigorous problem-solving sessions, delved into the intricacies of heat transfer, work, and energy conservation. As I navigated through the curricular content, I realized the importance of contextualizing theoretical knowledge within practical applications.

The laboratory session was particularly illuminating. Applying theoretical concepts to real-world experiments bridged the gap between abstract ideas and tangible results. Witnessing the transformation of theory into action heightened my appreciation for the relevance of thermodynamics in engineering applications.

Closing Thoughts

As I conclude this entry, I am struck by the interconnected nature of metacognition and content acquisition. The metacognitive strategies employed today not only facilitated a deeper understanding of thermodynamics but also illuminated the ongoing process of learning itself. The journey through engineering education is undoubtedly challenging, but today's reflections reinforce the idea that metacognitive awareness, collaborative learning, and practical application are indispensable companions on this academic expedition.

Note to Self

Embrace the challenges, celebrate the victories, and continue navigating the intricate landscape of engineering with curiosity and resilience.

Evaluation

Students will be asked to create a learning journal for some of the topics covered in the course. This journal can serve as a supplementary assessment activity, combined with other tasks. The more instructional units subjected to this process, the higher the likelihood that students will develop metacognitive self-regulation strategies. The journal will be evaluated by determining whether students have internalized the prompts addressed in the intervention sessions and if these are reflected in the content and structure of their respective journals.

Digital tools for creating learning diaries

Forums, discussion boards or journals on learning management systems. Learning management systems, such as Moodle, are equipped with several tools. Instructors can assign students individual journals to write (see "Journals" on Blackboard) with a template (for the student) and a scoring grid (for the instructor) included. This allows instructors to monitor each student's progress. Alternatively, for larger classes and/or for a more collaborative learning environment, instructors may create forums (see "Forum" on Moodle) in which students are asked to post on a weekly basis highlights of what they have learned, activating peer discussion or peer review of each other's posts.

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Part V.
Conclusions

The story of C. could be considered concluded. Writing and she will always remain connected; sometimes within the confines of formality, and at other times, intertwined with the activities of everyday life. Our role as narrators of her life has come to an end, but just as we are about to turn off the lights and send the audience home, we realize that there's a character eager to take the stage. His name is P. and he claims to be a retired University Professor. When we inquire about why he has chosen to enter the story at this point, he tells us that he was one of the promoters of C.'s relationship with writing and would like to share his perspective. We can do nothing but give him the floor. P. clears his throat and begins his speech.

I met C. in her first year of college. To be honest, she did not strike me as one of those standout students. As a matter of fact, she attended my classes with little enthusiasm, much like many others. Back then, I was starting to realize that my students didn't quite embrace the lecture format. I would go to class and explain the contents of the textbook they had to read. Sometimes, I would ask a question to see if they understood the concepts, but most of the time, I was met with a general silence. Moreover, my students faced significant difficulty when I asked them to do a group exercise or when they had to prepare for the final exam on their own. I noticed a lack of awareness about how to plan their studies, and

they seemed anxious and sometimes lacking confidence in achieving good results. This situation began to concern me, so I decided to enroll in a course on new pedagogies.

In this course, they emphasized the importance of teaching life skills and not just content related to our area of expertise. They focused on addressing all aspects of our students' development—personal, social, civic, and factors related to managing their own learning. Additionally, they highlighted the potential of writing to foster deep and meaningful thinking and knowledge acquisition. Honestly, it was a bit challenging for me to understand how to integrate this new perspective into my classes, and I realized how my students feel when I propose an activity they are not accustomed to. It's much more comfortable to stick to your recipe, even if you know there are new ingredients that can improve it, right? However, thanks to the final project in this course, I was able to see this new perspective materialize in a teaching and learning activity. In this project, I asked them to create an activity called 'Devil's Advocate,' aiming to enhance their self-regulation, flexibility, and ability to manage negative emotions when faced with a demanding task. In this activity, writing played a fundamental role, as my training course had suggested.

I was convinced that it would be an interesting experience for my students, and they would be highly motivated to tackle it. The reality was completely different. This is when I truly got to know C. After finishing the class and explaining the activity, she approached me and said she preferred to take the exam. Her face reflected a myriad of doubts about how to approach the task and, above all, about its meaning. I told her the activity was mandatory but decided to sit down with her and explain why it was important for her development. It's curious because the same reluctance she felt at that moment, I felt when I was enrolled in the course. That's when I realized that the role of a learner or a teacher depends on the context and that it's crucial to empathize with those you intend to teach if you want to have a real educational influence.

C. and I talked at length about the activity, and during this conversation, I realized that writing held great significance for her. When I explained to her how through this tool she could acquire other skills, I felt

that she reconciled with it. It was as if she had reunited with a loved one she hadn't seen in a long time. In the end, C. completed the activity and achieved great results.

When the year ended, I lost sight of C., but a part of me knew that this activity could have been a turning point in her academic and professional journey. Today, I've heard that she is dedicated to teaching, that writing is present in her teaching practices, and that she aims to contribute to spreading the role of this tool in the university context. Even with digital tools! These new generations...

I only intervened in the story to convey a message: the role of an educator, regardless of the educational level they work in, is to contribute to forming competent citizens who can address the challenges of society and the socio-historical moment they live in. That's why there are skills we must promote from all fields of knowledge. And in this commitment to contributing to the development of transversal and fundamental skills, we cannot forget the role that cultural artifacts like writing play. As ORWELL said, 'If people cannot write well, they cannot think well, and if they cannot think well, others will do their thinking for them.' This was the message I conveyed to C., and now C. passes it on to her students. And you? Would you join the ORWELL community?

12. Writing to learn

An Essay on The Higher Education Teachers' Perspective

1. The ultimate lifelong learning experience: writing introductory textbooks

Writing an introductory textbook, regardless of the subject field, is a profoundly transformative experience for an author. Writing a textbook, especially if aimed at introductory level courses, requires the systematic deployment of several of the LIFECOMP skills that have been described at length in this book. We will put emphasis on collaborative writing, under the assumption that even single-authored books - in order to be successful - need input from third parties, be them students or peers.

It is here assumed that who is undertaking the task of writing is an Instructor, teaching at the University level, as C. or P. that we presented earlier. Their perception of themselves as instructors must be very positive, because they have successfully applied in the classroom consolidated "instructional recipes" . Likewise, their perceptions as authors must be positive, because they have gone through the extensive writing activities that are implicit in the Academic career. While this initial perception might be quite obvious for a seasoned instructor and author, they will soon find out that both points are actually shaky grounds to build upon: the process of textbook writing goes beyond merely identifying gaps in knowledge; it is a journey of in-

tellectual exploration that challenges one's preconceived notions and expands the boundaries of understanding. This journey necessitates a willingness to confront and address areas of weakness, a hallmark of a growth mindset. The author's willingness to step outside their comfort zone, to engage with diverse perspectives, and to embrace new ideas fosters a deeper appreciation for the dynamic nature of knowledge and the continuous process of learning.

Finding themselves at the beginning of a new book or chosing the parts of a new edition that need the most extensive rewriting, exposes authors to their own fallibility, acknowledging that even the most well-established knowledge can be enriched and refined. Especially when starting from a well-consolidated teaching material, or when preparing a new edition of a book, a constructive dissatisfaction feeling can be the fuel for the pursuit of a really valuable educational product. When teaching a class, one obtains immediate feedback on the teaching approaches, in terms of communication levels and of content (cpr. chapter 11). Therefore the teaching material evolves rapidly. On the contrary, a textbook inherently resist to evolution. This implies that knowledge must not be merely reported but also synthesized, integrated, and presented more effectively than what would be done in a class: knowledge must be turned into a form that is both accessible and engaging for the intended target audience of the book.

This brings up another significant exercise for the willing-to-be textbook author, that is flexibility and adaptability. Not only, as noted above, the author must be willing to challenge their own assumptions, consider alternative perspectives, and adapt their approach as the subject evolves and new knowledge or new teaching trends emerge. Textbook writing is not a linear path but rather a continuous cycle of adaptation and refinement. As new research emerges and understanding deepens - but also when the preparation of later chapters of the book calls for prerequsite concepts that were given minor weight in the first drafts of the initial chapters - authors must be willing to revisit their work, identify areas for improvement, and adapt their

explanations and examples accordingly. This willingness to embrace change and incorporate new insights is essential for maintaining the accuracy and relevance of the textbook.

The need for adaptability extends beyond simply updating the content; flexibility must also encompass a deep understanding of the target audience, and the ability to tailor the communication style and teaching approach accordingly. The usual target audience of academic communication (monographs, peer-reviewed papers, etc.) are by definition the peers of the author. The audience share with the authors the same level of expertise, and have a well-rooted interest in the topic. On the contrary, introductory textbooks cater to a more diverse and impressionable audience, often comprising individuals younger than 20 years old who are still navigating their academic and personal paths.

Authors of introductory textbooks must recognize that their readers may have varying levels of prior knowledge, ranging from complete novices to those with some exposure to the subject matter. They must also be mindful of the diverse learning styles and motivations that exist among this audience, catering to visual learners, auditory learners, and kinesthetic learners alike. Often, expert textbook authors use the expression "think like a 20 years-old", which quite well represent this exercise of empathy and communication (vide infra).

In addition, introductory textbooks often need to address a complex interplay of misconceptions and misunderstandings that may have been acquired during the reader's educational journey. In order for the book to be effective, misconceptions and misunderstandings must be addressed carefully, as they represent an obstacle to learning. Therefore, authors must choose literary and educational devices that can dispel erroneous beliefs and foster a deeper understanding of the subject matter, very often beyond the simple need of providing clear and concise explanations.

The process of writing a textbook not only challenges skills in the personal and in the learning-to-learn area, but also cultivates the social area skills of empathy, communication, and collaboration.

Empathy is essential for authors to understand the perspective of their target audience. By empathizing with their readers' needs, motivations, and learning styles, authors can tailor the writing approach, and effectively bridge the gap between their own expertise and the novice understanding of their readers, ensuring that the textbook can actually serve as a valuable learning tool.

Communication is paramount for authors to convey complex concepts in a clear, concise, and engaging manner. This involves using appropriate language, simplifying the most complex ideas and concepts without compromising on the accuracy of the account that is provided, and employing effective storytelling techniques. As briefly mentioned above, authors must also adapt their communication style to suit the diverse needs of their audience, which implies giving proper consideration to factors such as cultural background, learning styles, and prior knowledge.

Collaboration is also an integral part of textbook writing, particularly when creating multi-authored textbooks. In such cases, authors must collaborate effectively to ensure that the textbook is cohesive and accurate, as well as stylistically aligned among the authors, while remaining as aligned as possible with the needs of the target audience. This collaboration involves open communication, respectful feedback, and a willingness to compromise.

To illustrate how empathy, communication, and collaboration skills are developed through textbook writing, let's consider two scenarios

Scenario 1: Single Author Testing their book with Students

In this scenario, an author tests their developing textbook with their students, seeking feedback and refining their approach based on their observations. This process requires empathy, allowing the author to understand their students' perspectives, learning styles, and potential misunderstandings. The author's feedback from students also improves their communication skills, enabling them to tailor their explanations and examples to better resonate with their audien-

ce. Furthermore, the collaborative nature of this feedback loop fosters a sense of shared responsibility, encouraging the author to be open to suggestions and incorporate feedback from others.

Scenario 2: Multi-Authored Textbook

In this scenario, a team of authors collaborates to create a textbook, each bringing their expertise and perspective to the table. This requires effective communication, enabling authors to share ideas, discuss potential challenges, and reach consensus on the content and presentation of the textbook. The collaborative process also cultivates empathy among authors, as they seek to understand and appreciate the contributions of their colleagues.

In summary, textbook writing cultivates a mindset of flexibility and adaptability, essential qualities for navigating the ever-changing landscape of knowledge and learning. While creating such educational products, all the LIFECOMP skills are effectively nurtured, as they are essential for effective textbook writing and can be further developed through active engagement with the target audience and collaborative work among authors. By embracing change and constantly refining their approach, authors set an example for their readers and demonstrate the power of lifelong learning in a dynamic world.

13. Writing and education

An Essay on Instructional, Educational and Training Strategies in Higher Education

1. The pedagogical meaning of writing

Among the communication revolutions that have marked human history, various authors emphasise how writing has generated a radical change: together with the conquest of the upright position, it has characterised not only the way subjects relate to each other, but also their way of thinking. As Walter Ong points out, writing has transformed the human mind more than any invention: it has in fact created a 'decontextualised' language, i.e. a type of discourse, which - unlike oral discourse - cannot be immediately discussed with its author (Ong 1986). It is not a mere appendix to oral speech, because it transports speech from orality to a new sensory dimension - that of sight - and thanks to this feature transforms the way human speech and thoughts develop. Thanks to writing (and reading), the ability to think, feel, know and understand other human beings has changed (Wolf 2009). However, it is necessary to specify how the term 'writing', in the singular, is now rather complex to use: there are in fact countless types of writing that characterise the life of a human being, from notes on a sheet of paper, to a confidential letter, all the way to a scientific article (Anichini 2010).

Although tracts have been found on stone dating back some 80,000 years, it is from 3500 B.C. onwards, first in Mesopotamia,

then in Egypt, China and pre-Columbian America, that writing began its dissemination with the function of listing, counting and measuring possessions, but also accounting for transactions performed and predicting the future. Writing and consequently reading are the result of a series of cognitive and linguistic steps, which also generated enormous cultural changes, forcing the human brain to perform new operations (Wolf 2009).

It is only centuries after its introduction that writing becomes a tool for transmitting knowledge: in Ancient Greece, thanks to the Greek alphabet, it takes on an increasingly central role in the lives of human beings and contributes to the transmission and construction of culture along new paths. A written document, therefore, is more than just a memory aid, as it offers an opening into new worlds of the human mind.

As Wolf notes, writing arises thanks to three epiphanies: the first is that of a new form of symbolic representation, namely the discovery that simple lines could represent a concrete element of the natural world as well as an abstract entity. A second epiphany concerns the intuition that a system of symbols can serve to communicate across time and space, succeeding in giving permanence to the statements and thoughts of a human being, a society or a culture. The third 'epiphany' identified by Wolf concerns the realisation that the sounds of each word can be concretely represented through symbols (Wolf 2009). It is precisely the combination of these new potentials that offers human beings new possibilities to relate to reality, to store information and to develop thought: this opens up the way for a transformation of their educational, instructional and training process.

Interestingly, Plato, in the *Phaedrus*, uses the myth of Theuth to warn his contemporaries of the dangers of writing technology. In fact, through the words of Socrates, who addresses Phaedrus, the myth of the deity Theuth who, along with numbers, calculus, geometry and astrology, is said to have invented writing is narrated: he addresses the Egyptian king Thamus, emphasising the importance of teaching

these arts to the Egyptian people. In particular, writing, according to Theuth, has the ability to make people wiser, as it would improve memory; the Egyptian king, however, denies the usefulness of such an invention because, instead of guaranteeing wisdom, it would offer a form of 'appearance of wisdom' and, instead of creating memory, it would be a tool for 'recalling to memory'. According to Plato, it is only through orality that memory can be formed and expanded: indeed, Socrates tells Phaedrus that, once a speech is written down, it 'rolls everywhere', ends up in the hands of those who are experts on the subject, but also in those who do not care, since the text 'does not know to whom it is convenient to speak and to whom it is not'. A written text would therefore be 'inert', because the written word, unlike the oral word, cannot defend itself.

It is interesting how, despite this clear stance, Plato himself - along with other philosophers - characterised Western culture precisely through his written texts. Beyond Theuth's and Thamus' motives, the central role that writing has had and continues to have - even in the digital age - in promoting the transmission and creation of culture in various societies is undeniable. As Ong notes, written discourse does not originate from the unconscious, it is not something 'natural' but 'artificial' and is a process guided by consciously invented norms: 'like and more than any artificial creation, it is invaluable because it is essential to the fullest development of inner human potentials' (Ong 1986, p. 124). Writing is a technology that improves human life because, for instance, it raises the subject's level of awareness, enriches the human psyche and intensifies the inner life.

Writing is horizontally present in all school levels: from nursery and pre-school - where, even without the ability to read and write, there are numerous written texts, read by educators and teachers - to university education, where, alongside lectures, it is precisely 'texts' that form the basis for the acquisition of knowledge. If, on the one hand, the written text is constantly present in contemporary academic education, on the other hand writing is seldomly used in a way that puts the learner in the role of active protagonist of the process.

The Erasmus+ ORWELL project Writing Well, Thinking Better[1] moved its steps from a survey - first through the analysis of the syllabuses of the University of Florence's courses, then through interviews with lecturers - on the uses of writing in university didactics. From this analysis it emerged how, in the face of the presence of so many texts to be read and the presence of written final examinations, in reality the experiences that assign a central role to writing during didactics are often rare and episodic. As highlighted by the good practices that emerged during the project and by the potential activities discussed in the previous chapters, writing, understood as a process, actually presents its own enormous instructive, educational and training potential at the disposal of human beings, which needs to be better exploited, also through the sharing of methodologies and good practices. Writing can, therefore, represent a transversal tool to promote the acquisition of the 'life skills' that are today fundamental to becoming an active, participating and responsible citizen.

As already noted in chapter two, writing can be defined as a 'cultural artefact' that enables the expansion of the human mind: such expansion allows one to leave a trace of the present in the future (as the ancients had intuited, using it to account for), but it also allows one to expand the possibilities of dialogue with the other and to proceed to profound processes of introspection. What King Thamus, through Plato's words, did not realise is how, in reality, writing did not appear as a substitute for the oral word, but gradually complements it in an active dialogue. This reflection can also be applied to subsequent communication revolutions: similarly, printing did not eliminate handwriting, digital did not erase the analogue. As Bolter and Grusin (2000) note, a new technology re-mediates its predecessors, enriching them, challenging them but also establishing a relationship with them. The real challenge, then, is to think about the ways in which the technology of writing complements orality, even in today's digital age, and then to question what educational, instructio-

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[1] https://orwellproject.eu/.

nal and training purposes can be pursued through this dialogue. In the pedagogical sphere, the challenge is thus to think of writing not only as an asymmetrical task in which those who know transmit knowledge 'vertically' to those who do not yet possess the information, but as a technique that promotes forms of active education, that stimulates peer collaboration and confrontation, that spreads knowledge horizontally as well, and that fosters (in spite of Thamus' view) new forms of memorisation, promoting self-knowledge and self-care.

2. Writing between education and training

The didactic activities described in this book, connected with the personal, social and learning-to-learn key competences, aim precisely at recognising writing as having a central and indispensable role in the education, upbringing and training of subjects. The distinction between these three terms is necessary and helps to understand three specific dimensions to which writing can aspire: firstly, acting on the instructional level means leading the subject to acquire knowledge and skills linked to specific areas of knowledge and to certain abilities; it therefore refers strictly to the educational level, with respect to which - as we have seen - writing does not only serve to generate texts to be read, but is fundamental because it promotes among learners a more active interaction with textuality, fostering personal re-elaboration (through diagrams, notes, maps, highlighting, summaries) and the construction of critical thinking (to lead them to assume their own point of view starting from what they have read).

However, writing can also fulfil a valuable educational function: by 'education', here we refer to the immersion of the subject within a culture and the transmission of a set of habits, knowledge and know-how. Writing is already, in itself, an element that each generation inherits from the previous one, albeit transforming it (and ever more rapidly, in the digital era); writing means coming into contact with a culture, using the language that that same culture has helped to tran-

smit, allowing the subject to enter into a context and thus internalise its norms, habits, worldviews.

Writing then also acts on the formation (understood as *Bildung*) of subjects, because it concerns the personal dimension and leads to a free and critical re-elaboration of the forms of culture in which the subject is immersed (Cambi 2001): it becomes an instrument of reflexivity, both when it produces narratives of one's own experience (of the self, of one's own experiences, of one's relations with others), and when it leads to the creation of stories, and when it projects the human being into utopian dimensions. Writing allows retrospective analysis, offering the possibility of eliminating any inconsistencies from the written text, carefully choosing and selecting words, nourishing thought with new discriminating capacities (Goody 1979). Writing, given its ability to separate the subject from the object of knowledge, succeeds in allowing an introspection that can become even more articulate and that can open the psyche not only to the external and subjective world, but also to the inner self.

When we consider the higher education context, for example, if authentically lived, the dissertation is first and foremost a formative writing experience, in which the student should change into the role of "scholar" (Eco, 1979), assuming a research dimension that produces not only an enrichment of knowledge on an instructive level, but also a transformation of self, a more autonomous and more critical way of proceeding with respect to the reality that surrounds him. The dissertation should confront the student with a multiplicity of perspectives that need to be synthesised and leads to the realisation of a text that, under the supervision of the supervisor, is specifically authored and is - or should be - a sign of maturity and autonomy that testifies to the transformation that has taken place thanks to the encounter with knowledge.

The dissertation should represent a point of arrival, in which to converge the instructive, educational and training dimensions of writing experienced during school and university training, but it is in fact as early as primary school that the habit of producing texts

should be considered as a vector for the construction of citizenship, as well as a tool for inclusion. To this end, in order to understand what role writing can play in university didactics, it may be useful to start from the example of two authors who offer interesting insights into the use of writing for educational and training purposes: Célestin Freinet and Lorenzo Milani.

Célestin Freinet ranks among the most important authors of pedagogical activism: he assigns writing a fundamental role precisely because it makes the pupil the protagonist in the learning process. Alongside the 'walking lesson', in "*Le mie tecniche" [en. tr.* My Techniques], Freinet introduces the 'free text', assigning pupils the task of writing - freely, in fact - to recount their own experiences and emotions. Starting from the awareness that the school risks to "divorce from life" (Freinet 1967), he emphasised the need to start from the observation of the things that surround the human being, starting from natural sensitivity: back inside the classroom, writing functions as a reflective tool, capable of generating new points of view on reality and of approaching textuality in an active way. Direct experiences, made outside school contexts, are the main stimulus for these writing exercises, aimed at being written down and then read to the class. In the free text, the pupil writes - in fact - freely, when he feels like writing and according to the theme that inspires him: rather than imposing a subject or foreseeing a plan, an experience is encouraged in which the pupil becomes the real protagonist.

This freedom, in reality, risks remaining only potential if one does not inspire in the pupil the desire and the need to express himself, making him sensitive to the motivations behind education and the possibilities that writing offers to contribute to the life of the community (Freinet 1967). The free text, embedded in the Freinet techniques, is thus an experience that motivated the exercise of reading and, at the same time, was intended to become the stimulus for undertaking other educational activities. Not surprisingly, closely linked to the free text are also the experiences of school typography, in which pupils were called upon to physically print texts, making themselves

the protagonists of communication and critically reflecting on this process.

Another 20th century author who reflects from a pedagogical perspective on the role of writing is Don Lorenzo Milani: he, as early as the *Esperienze Pastorali* [en. tr., Pastoral Experiences] - which recount his commitment in San Donato di Calenzano, in close contact with the working class and peasants - assigns writing a fundamental task, noting how the main objective to reduce social inequalities must be precisely literacy and how this must pass not only from the ability to read classical texts, but also from the ability to read and interpret contemporary languages, making subjects (all, regardless of their social class) capable at the same time of writing with mastery. These ideas are then revived in his Barbiana School: also thanks to his meeting with Mario Lodi and the Educational Cooperation Movement, don Milani, in addition to assigning - just like Freinet - a fundamental role to writing, decides with his pupils to undertake the ambitious path of writing a text such as *Lettera ad una Professoressa* [en. tr., Letter to a teacher]. In fact, the book begins with an emblematic statement: 'at first sight it seems to be written by one boy. Instead, the authors are eight boys from the Barbiana school' (Scuola di Barbiana 1976, p. 5). The writing technique is based on 'little mounds', i.e. each pupil takes notes on small sheets of paper and then shares them with the others by placing them on the table: each chapter is then put together in 'little mounds', which become chapters and paragraphs, through an analysis of the texts created that also uses glue, scissors and coloured pencils, removing repetitions, difficult words, excessively long sentences, etc. With respect to writing in the school environment, Don Milani notes how the art of writing forces one to question oneself on the tasks of completing and simplifying, of thinking about the reader's reactions, wondering if he or she will have the skills to understand; of avoiding repetitions and cacophonies, wondering if a concept is true, if it is right in its hierarchical value. These are reflections that act as the centre of gravity for the entire Letter, in the awareness that if "it is only language that makes equals" (Ibid.,

p. 96), it is fundamental to put each subject in a position to express him/herself and to understand the expression of others, also through writing. Making the school a writing gymnasium is therefore a fundamental task of citizenship, democracy and freedom.

3. Writing (also) digitally in education

In mentioning the writing revolution, it was emphasised how it represented a turning point in human history. Another significant turning point was the invention of printing and thus the introduction of movable type promoted by Gutenberg in the mid-15th century: Elisabeth Einsenstein (1985) speaks of an 'inadvertent revolution' in this regard, explaining how the invention of movable type produced profound transformations in society and human culture. It promoted a greater dissemination of textuality, intertwining with the history of schooling and the dissemination of knowledge, and even enabled the birth of the 'feeling of childhood' (Postman 1984): it thus favoured a vertical model of knowledge dissemination, in which those who held the information passed it on through volumes to only a minority of citizens. It was only the spread of schools and literacy that made writing a vector of democratisation.

Just as semiology has favoured the extension of the meaning of 'text' beyond the presence of words on a surface, understanding as 'text' every portion of the sensible world to which we turn our attention (Barthes 1971), the definition of 'writing' has likewise expanded to include the creation of digital 'texts'. It is since the digital revolution that the possibilities of the circulation of writing have begun to expand: the digital has promoted the unprecedented possibility of access to the creation of content that can have a planetary diffusion. This has often been understood as a form of democratisation, but in reality an increase in possibilities does not necessarily translate into an increase in freedom, nor to a greater spread of rights and democracy.

In contemporary society, we often fear that the advent of screens has taken away space from reading and textuality. In reality, digital today has produced a bulimia of textuality, including writing itself. Writing increasingly passes through screens and produces ephemeral content, which hardly leaves a real trace within culture as it did with printed texts. In fact, a paradox is triggered precisely in relation to the 'persistence' of textuality in the digital age: given their ephemeral nature and their being constantly superimposed by other posts and other content, contemporary digital texts tend increasingly to resemble orality (flowing and vanishing in the flow of information), on the other hand, as they enter the channels of the Net, they leave more and more potentially indelible traces in relation to our actions, our preferences, our attitudes. Traces of which the subject is often in danger of not being fully aware.

These novelties, from a pedagogical perspective, offer important insights to be grasped, which should be interpreted neither in an 'apocalyptic' nor in an 'integrated' key (Eco 1964): the digital offers unprecedented possibilities for interaction, which require profound awareness in order to be grasped. It is the way it is used, together with the design and definition of objectives, that transforms potential into real opportunity. One example among the possibilities that digital offers for writing can make explicit how it is human intervention in technology that makes the difference:

- Multimedia: digital technology enables the combination of several languages in a single form of textuality. On the one hand, this can lead to the weakening of the written word in favour of an iconic language and an increasingly significant presence of sound; writing, however, does not lose its role, if we think even in recent Reels of the use of words to highlight salient concepts or even to subtitle videos. The digital text requires a specific form of writing, represented by scripts or at any rate by screenplays, which play a fundamental function;
- Interactivity: digital technology opens up the possibility for the reader to take an increasingly active role in engaging with textua-

lity. Social networks today are an example of the possibilities that digital offers for active interaction. Taking social network posts as an example, the words of the author of the content often end up being less read than the comments, which arouse curiosity among users precisely because they leave space for debate and interaction. Thinking of forms of writing that are more explicitly aimed at the dissemination of knowledge, the case of Wikipedia is emblematic. Wikipedia is an encyclopaedia that was born and nurtured precisely by user interaction and that leaves its texts constantly open. This interactivity favours the horizontal dissemination of knowledge and is a resource to the extent that users are trained to interact appropriately and act according to principles of communication ethics and responsibility.

- Sharing: digital technology makes it increasingly easy to make content available to others. Whether it is an image or a written text, a description of an experience or a scientific discovery, disseminating texts has become an increasingly simple operation. Here too, alongside the worrying implications (the dissemination of content devoid of authorship and reliability) there can be positive and democratising consequences, insofar as information can circulate more and more widely and knowledge can also be disseminated horizontally.

- Collaboration: although collaborative writing techniques became widespread well before the digital revolution, digital technology today offers (as widely experienced in various professional fields, including academia) the possibility for multiple users to work (synchronously or asynchronously) on the writing of the same text. This implies a non-trivial organisational capacity and can foster collaborative forms of knowledge construction. Anyone who has experimented with writing a collaborative text digitally without first agreeing on a division of roles or without first effectively understanding the functionalities (e.g. suggestion modes or the use of comments), will have noticed how, in itself, collaboration can be hindered by digital: it is precisely the planning and organisa-

tion between those collaborating that makes the difference (Ede & Lunsford 2001).

- Immediacy: digital technology has freed writing from the constraints of typographic time. Obviously, writing with a pen is also marked by immediacy, but thanks to digital technology this immediacy can also be combined with other characteristics, in particular it can favour sharing, interaction, multimedia. This immediacy is not necessarily an asset: still referring to social networks (but also to online newspapers), one can see how sometimes the need to be (and to feel) always on leads some users to provide hasty answers or some newspapers to launch unverified news, exposing themselves to criticism, making statements without due care or even spreading false information. In the educational sphere, this immediacy can become a resource if the teacher is able to make use of tools that are capable of returning (e.g. tag cloud tools) the students' answers and if one is able to foster a participatory dialogue with the students, in which writing becomes a tool capable of giving voice to all, even those who have no opportunity to speak.

These characteristics highlight how digital technology can become a resource in education if it becomes a tool that complements and does not replace traditional experiences. And if each of its uses is part of a shrewd pedagogical planning. Digital, as a communicative language, requires adequate literacy and, therefore, working on digital writing can also correspond to a *Media Education* task (Buckigham 2020).

Educating in writing is therefore a fundamental task, with respect to which university teaching should not feel alienated, denouncing - as often happens - the shortcomings of school education. On the contrary, the university should be a context in which writing skills can be honed, both to have a more active relationship in the acquisition of knowledge and to arm oneself with useful tools to become active, responsible and participating citizens.

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14. An essay on writing to nurture the nine LIFECOMP and to form the contemporary subject

The LIFECOMP framework of personal, social and learning-to-learn competences represents a very significant European text for contemporary pedagogical research, in a twofold direction: centripetal and centrifugal. In fact, it can be interpreted as a synthesis and point of connection of many perspectives that have marked the research of the educational sciences (and in particular of pedagogy) in the 20th century; at the same time it offers, in a utopian key, the directions towards which education, instruction and training of the human being should tend. Indeed, this document can foster at a European and world level the creation and circulation of a shared language with respect to the goals to be promoted throughout life, from early childhood to old age. Moreover, this framework offers clear methodological indications with respect to didactic and educational strategies: by identifying and defining the key competences for life, in fact, it suggests that schools and other educational agencies strive to promote both the personal and social dimensions, in order to build 'well-made heads' (Morin 2001). For each of the nine competences, writing can assume a transversal fundamental role, precisely because of its capacity to promote the transformation of human beings, accompanying their biological, social, cultural and ethical growth.

1. Personal Area

With respect to the personal area, the central writing strategy is undoubtedly autobiography, which promotes listening and self-care and which can form the basis for deep introspections that enrich the way each person shapes his or her existence.

Self-regulation. One of the key objectives of any educational, instructional, and training intervention is to make sure that the individual is able to internalize norms from outside in a free and personal way, assuming responsible behavior. Referring to the awareness and management of one's own emotions, thoughts and behaviors, this competence is closely related to the category of caring and in particular self-care, which is a prerequisite for taking care of others and the world. Caring is considered as a pedagogical a-priori (Boffo 2006) and in particular self-care is a fundamental strategy for each subject, who is called to know himself (to "think himself," as defined by Luigina Mortari) in order then to be able to "have of himself." Writing fulfills a fundamental pedagogical function in the direction of self-regulation: when used as a tool for self-narrative (as a "technology of the self," using Foucault's words), it allows one to return to the lived experience, to reread it during textual explicitation, and to interpret it as a sign for finding new meanings to one's existence. Writing can thus be a form of listening to the self, leading to greater awareness of one's moods and experiences.

In the context of undergraduate teaching, autobiographical strategies prove valuable, precisely for the purpose of self-regulation, inviting the student to connect didactic themes to his or her own experiences and, in promoting this connection, fostering a form of introspection that can be a valuable formative resource. At the same time, writing can be an interesting exercise in self-regulation in cases where defined spaces or a character limit are handed over to the student: thus forcing the selection of main themes, placing them in hierarchy with each other and forcing the expression of concepts in a concise and effective manner.

Flexibility. Flexibility is a key competence because, in an era of profound and rapid transformations, it represents the ability to manage transactions and uncertainty, as well as to deal with the challenges of contemporaneity. The definitions of postmodernity in recent decades marked by the loss of the Center and the "end of grand narratives" (Lyotard 1979) claim precisely an ability of the subject to reorient itself in the face of the constant transformations taking place. This flexibility is closely related to vulnerability-particularly the "ontological" vulnerability of which Butler spoke so effectively-and to the fragility typical of the human being: these are dimensions of which the subject must necessarily become aware in order then to construct himself as a citizen in relation to the other (Nussbaum 1999). In the awareness that, as Morin notes, "uncertainty is at the heart of science" and is "inseparable from living" (Morin 2014, pp. 28.-31), it is necessary to learn how to navigate in an "ocean of uncertainties through archipelagos of certainty" (Ibid., p. 35): it is therefore essential to teach principles of strategy that allow one to deal with the unexpected and the uncertain and to modify their development. The theme of "flexibility" was effectively described by Italo Calvino, who in his *Lezioni Americane* [en. tr., American Lessons] defined the concept of "lightness" in positive terms, describing it precisely as an ability to cope "flexibly," dynamically, ironically and critically with reality. Since flexibility is evidenced, according to when defined by the LIFECOMP framework, by readiness to revise opinions and courses of action, writing can serve a valuable function: unlike oral speech, the written text leaves a trace that can be interpreted, discussed, evaluated. It opens the space for deconstructive work (Mariani 2008), which can stimulate precisely flexibility because of its ability to unmask the implicit and to recognize the prejudices that underlie the way we look at the world, paying attention even with respect to what lies on the margins; the written text can thus encourage the search for new ideas and strategies, enabling the subject to make more conscious, more critical and more creative choices. In university education, writing can be a valuable tool for cultivating flexibility: the

autobiographical strategies already mentioned with respect to self-regulation can enable constant reorientation with respect to one's goals. For example, students can be invited to experiment with various forms of scientific writing (from dialogue to treatise, from aphorisms to essay), understanding how form can interact with content as certain types become more effective with respect to specific scientific goals. Also for the purpose of promoting greater flexibility, activities that lead to the development of scripts are also useful, as much for the creation of analog texts as for the creation of digital texts: writing a script means precisely working on a (written, precisely) outline that constitutes a starting element to then interact with the experience in a dynamic way.

Wellness. In recent years, the category of well-being, extending from the health, psychological and economic boundaries in which it had initially spread, has increasingly become a central theme in educational circles as well: the very definition given in LIFECOMP - as the pursuit of satisfaction in life from the care of physical, mental and social health-highlights the relationships with self-care already mentioned for self-regulation. Just as the development of a society cannot be measured only through Gross Domestic Product (Sen 2000), similarly, "well-being" should free itself from economic parameters and descend on a human dimension. A dimension with respect to which physical well-being is properly related to mental well-being. Speaking of well-being invites the search for an inner balance that involves the bodily dimension as much as the emotional and relational ones. "Wellbeing" in pedagogy resembles that "living" which Edgar Morin distinguished from "surviving" and which needs to foster a knowledge of knowledge (Morin 2014): living, in fact, means "being able to develop one's qualities and aptitudes" (Ibid., p. 20).

With respect to this personal competence of well-being, writing can also fulfil a vital task because of its potential for reflexivity and introspection. In university teaching, cultivating students' "wellbeing" can be an important goal, increasing motivation and, thus, promoting learning. The aforementioned autobiographical writing,

if well conducted, can lead the subject to question what promotes one's physical and mental well-being: if the goal of self-regulation is more related to an ability to devote oneself to study, the dimension of well-being can come through autobiographical exercises that lead one to question oneself with respect to one's educational, personal and professional goals and to understand what actions are useful for one's "well-being." As Cambi notes, in autobiography "the subject reads itself as a process, hinges on the construction, oriented on the project and distilling a direction of meaning (Cambi 2006, p. 62). It is a retrospective that rereads the paths and tasks of the self, sketching its constituent events and offering an opportunity to set a direction of travel. A university course - in the humanities, more explicitly, but also in the sciences - should precisely seek to act on these introspective dimensions as well, tying lived experience to the encounter with the discipline, fostering an immersion in it and helping the subject understand how that knowledge enriches his or her being in the world.

2. Social Area

Writing is first and foremost a strategy for creating a relationship with the other: for this reason, it is fundamental for social skills. Even in cases where one writes for oneself (notes, diaries, lists), one writes in the direction of an 'other' who is the 'I' that will read the text in the future: using the technique of writing accurately means precisely experimenting with forms of relating with the other that are based on listening and that can nourish dialogue, making the subject an active citizen.

Empathy. The concept of empathy has marked much pedagogical research in the 20th century: it is defined in LIFECOMP as an understanding of another person's emotions, experiences and values that leads to an ability to provide appropriate responses. In the common sense, the concept of 'empathy' is linked to knowing

how to put oneself in the other person's shoes, but in reality various studies - from Edith Stein to Laura Boella - emphasise that it is not only a matter of experiencing the other person's point of view, but also of knowing how to understand and welcome, protecting and respecting him/her. Empathy is not only about 'putting oneself in the shoes of...' but also about being close to the other's feeling and enriching oneself with the other's world. Empathy is a fundamental concept in pedagogy, because it enables one to feel the emotional experience of others and to learn from this experience: it is from "feeling the other" that positive and negative experiences can take shape and it is always from this that these experiences are linked to moral and ethical dimensions.

We usually think of reading as a valuable strategy for promoting empathy: it allows us, especially when faced with a narrative text, to empathise with the other person and thus experience new points of view. Like reading, writing can also foster empathy to the extent that it encourages it. On a didactic level, fostering a narrative perspective and stimulating the 'grammar of fantasy' through writing is a valuable strategy that can immerse the subject in unprecedented situations, inducing him or her to experience the encounter with being other than him or herself. With respect to the task of making the subject an active citizen, writing can promote the development of empathy through didactic activities that invite the author of the text to think about the reader's reactions and their possible different interpretations. Writing exercises that allow for the hypothesis of different types of audience (a university lecturer, a fellow student, a secondary school student, a child, etc.) can also allow the pupil to move on empathic dimensions and thus develop his or her own sense of citizenship.

Communication. Communication competence refers to the use of relevant communication strategies, codes and tools specific to the context. The relationship between communication and education has been the focus of pedagogical research in recent decades: from the point of view of authors such as Danilo Dolci, Mariagrazia Con-

tini, Rita Fadda, Franco Cambi and many others. Communicating is the "law of life", as Dolci himself notes: it regulates communication and the ability to be in communication (thus managing it, understanding it, enhancing it and renewing it) are key tools of the subject's formation. Identifying communication as a key competence emphasises how, in an age of an overabundance of communicative messages and ample opportunities for 'unlearning', it is absolutely necessary to master in a reflective, free and critical manner the ways of entering into relations with others. In this regard, one speaks of a "formative communication", which has the task of giving life "to a freer and more formed subject, who for this very reason is democratically more characterised, because he finds himself (since he lives them) those principles that can and must regulate the life of all" (Cambi 2006, p. 48).

Practising writing in higher education teaching should mean precisely experimenting with various forms of writing and questioning the mechanisms of interpretative cooperation, well described by Umberto Eco, that come into play between the Empirical Reader and the Empirical Author, in respective dialogue with the Model Reader and the Model Author (Eco 1979b). Providing moments during lessons in which writing performs a generative function is also possible today through the use of e-learning platforms and the various supports that enable the synchronous expansion of the teaching experience, including through digital. Inviting students, for instance, to formulate definitions, to write words, to share points of view can represent an expansion of traditional didactic texts (the more transmissive ones, such as teacher's words or volumes) to create a broader, more open and more dialogical form of textuality. These practices, at the same time, can foster a task of "metacommunication" (Watzlawick, Beavin, Jackson 1971), implemented through a lateral step to critically re-read one's own being in a communication situation.

Collaboration. The collaborative dimension is central to education. It is precisely in the balance between the personal and social dimensions that education should take place, as John Dewey emphasised

in his "My Pedagogic Creed". Collaboration is at the heart of the thinking of Freinet (aforementioned) and of many other authors who have marked the 20th century, culminating in the cooperative learning model that defines the strategies through which to make group work truly effective. Among LIFECOMP, cooperation is understood as engaging in group activities and working in teams to recognise and respect others. Collaboration, at school and in other educational, instructional and training situations, means exercising a gymnasium to contribute to the 'common good'. Collaboration can, for example, lead to an awareness that others may have a different cultural background from my own and can lead to reflection on how the collective dimension can enrich the personal one. Truly collaborative situations can be fostered if trust in the other is developed, if a fair, inclusive and respectful division of labour takes place, and if there is an appropriate assumption of responsibility on the part of all participants.

In the previous section, reference has already been made to a 'collaborative' text that, written by students, has become a landmark in world pedagogy, such as "Letter to a teacher". Fostering collaborative writing situations in higher education teaching can be an even more accessible experience today, thanks to the presence of digital tools that favour, at least potentially, the opportunity to write together with others. However, it is important not to think that digital is in itself a facilitator of collaboration: digital provides a basis that then requires cooperative work, in which the participants coordinate themselves appropriately, dividing up tasks, giving each other deadlines and making their skills available. Interesting experiences of collaborative writing in university didactics can be the creation of shared reports, but also the collective writing of notes that, supervised by the lecturer, can become a valuable parallel text to familiarise oneself even better with the knowledge conveyed during lectures. This experience can become all the more effective the more the collaboration is nourished by the dialogue between the participants, so that there is mutual help in understanding and so that a multiplicity of interpretations also come into play.

3. Learning-to-learn Area

The third competence area of LIFECOMP refers to a theme that has been central for decades in the psychological and pedagogical fields. The real challenge, as Edgar Morin had already emphasised, taking up Montaigne's famous expression, is to avoid producing 'well-filled' heads by arriving at the construction of 'well-made heads'. This is why it is essential that schools and other educational agencies avoid relying on exclusively transmissive models, working on the co-construction of knowledge and metacognitive dimensions. Here, too, the potential of writing is enormous.

Growth mindset. Among the 9 competences indicated in LIFE-COMP, that of 'growth mindset' is less recurrent in the lexicon of the pedagogical area in recent decades. The European document defines this competence as an ability to believe in one's own and others' learning potential and to continuously progress along this path. It comes from awareness of and trust in one's own and others' abilities related to learning by striving for achievement through hard work and dedication. Having a 'growth-oriented' mindset means understanding how learning is a lifelong process and reflecting on the feedback received. An explicit connection with the pedagogical area can be linked to the relationship the subject has with error: as Edgar Morin suggests, error itself has a fundamental generative function for the growth of each subject (Morin 2014). The error becomes 'nefarious' in cases where it is ignored or denied, unlike the error that is recognised, analysed and overcome, which can become positive. Error is not a parasite external to the cognitive faculty, but originates in knowledge itself: it is inseparable from human knowledge because, as Morin again notes, "all knowledge is a translation, beginning with that of the senses, especially visual perception". The generative function of error has also been well explored by Gianni Rodari (1971), who with a strong pedagogical sensitivity invites us to nourish the grammar of the imagination by using precisely error, which has a function that is as much heuristic as creative. Insofar as every error underlies the

possibility of a story, it would be desirable in university didactics to use error in an instructive, educational and formative key. Thinking about the use of writing, for example, the lecturer could invite students to formulate questions in writing - in such a way as to allow for more careful reading - relating to lectures or examination texts, and invite students to formulate, again in writing, intentionally wrong answers. These mistakes, without initiating narrative feelings (as Rodari would have imagined), can become tools for growth-oriented thinking, fostering greater awareness and confidence in one's own way of relating to knowledge.

Critical thinking. Critical thinking is defined in LIFECOMP as the ability to evaluate information and arguments to arrive at reasoned conclusions and to develop innovative solutions. For these purposes, writing has a fundamental function because, when combined with reading, it can lead to the construction of knowledge, to de-construct in order to re-construct. If Plato's reflection that notes how a dialogue with an interlocutor is more difficult to develop in written form is shareable, and if it is a common experience for many people to invite someone to speak to each other in order to clarify themselves, at the same time, the history of knowledge has shown how writing can become a valuable tool precisely because it leaves one open to various interpretations and can thus become a promoter of critical thinking. It is no coincidence that writing played a fundamental role in the period of Modernity, a period in which individuality and rationality became increasingly important. An effective use of writing in the university environment can be a valuable channel for developing critical thinking: it has already been mentioned in the previous section how the thesis, with its need for bibliographic references, represents a writing exercise in which the student tries to summarise the points of view of various authors around a topic and then come to personal, reflective and, hopefully, critical conclusions. Also during teaching, each teacher should try, from the knowledge transmitted, to encourage the acquisition of a critical look at reality by all students. Writing exercises aimed at building critical thinking

could be set up by asking students, during lessons, to formulate definitions in the classroom: especially in the humanities disciplines, this can stimulate the propensity to formulate definitions personally and critically, it can lead to comparing, analysing and evaluating opposing points of view. Inviting people to rewrite in their own words concepts expressed by others is an exercise that, if conducted well, leads to comparing, analysing, evaluating and synthesising information, questioning the reliability of sources and stimulating them to take their own point of view. At the same time, interesting writing exercises could be promoted on the basis of questions addressed to artificial intelligence, starting from the generated texts and interacting with them in search of limits and enhancing opportunities. Writing, in this perspective, responds precisely to one of the objectives declined among the descriptors of 'critical thinking' in LIFECOMP, i.e. developing creative ideas, synthesising and combining concepts and information from different sources.

Managing learning. Learning management is always part of the task of learning to learn. The reflections of Edgar Morin, for whom learning means separating and connecting, analysing and synthesising, to arrive at considering objects no longer as things closed in on themselves, but as systems communicating with each other and their environment, are enlightening on this subject as well. It also means overcoming linear 'cause-effect' randomness to learn about mutual randomness and the centrality of uncertainty. And it means, thirdly, grasping the challenges of complexity. Authentic learning requires forms of self-examination and effective learning management. These can be achieved through proper planning, careful organisation, constant monitoring and critical review of one's own learning process. Learning can thus be freed from specific content, leading to the construction of inter- and trans-disciplinary relationships. Resorting to writing in this direction could prove useful if students are invited to see themselves as subjects constantly engaged in precisely this process of monitoring their own growth and training. The teacher can thus encourage the study of texts during the course of a course and make

writing a strategy for verifying - and self-evaluating, in a formative way - in itinere how the learning process is progressing. Writing to manage one's own learning can therefore pass both through individual study (through the paratextual signals that the student can realise while actively interacting with a text) and through moments of sharing: starting, for example, from more complex passages of the volumes, it is possible to try to understand and interpret together the most relevant aspects of an author, trying to write key-words or representative summary sentences. The creation of concept maps is also a form of writing: this task is often associated with students with Specific Learning Disorders, but it is actually a practice that can improve the learning abilities of all pupils, promoting critical thinking and encouraging the ability to make connections, thus managing one's own learning organically.

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