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TRANSFORMATIVE STORYTELLING DESIGN: FROM INDISCIPLINARITY TO EMPATHY.

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ABSTRACT | The current era's social, environmental, and economic challenges necessitate a strategic, holistic approach to address their complexity (Cerruti, 2018). Simultaneously, there is a growing need to develop a de-structured and fluid mindset to counteract the trend of increasing specialization and compartmentalization within scientific, educational, and modern project environments. Addressing crises like climate change, social and cultural issues, economic downturns, and the digital divide requires strategic projects with real impact: although current emergencies are daily highlighted by a vast amount of news and scientific research (Buzzi, 1984), effectively sensitizing - and even before that, stimulating - public consciousness and opinion is particularly complex. This contribution aims to analyze the importance of strategic connections between seemingly distant disciplines to work on effective and unconventional communication design that goes beyond simple dissemination and is able to initiate a process of identification that triggers empathy mechanisms in the face of contemporary challenging issues, giving rise to a new field: Transformative & Immersive Storytelling Design (TISD). Following the theorization of this new field, it introduces an innovative approach that merges Design, Performing Arts, Digital, and Social sciences to overcome traditional discipline boundaries. Design's unifying role and Performing Arts' deconstructive capacity encourage a deeper understanding of reality, advocating for an "indisciplinary" approach for a successful communication (Nicolescu, 2014; Mitchell, 1995). To this end, two projects of a marked transdisciplinary nature, EMOTIONAL and INSIDE-ACT, are presented. The first is directly dedicated to TISD, and the second to the need to implement a training path for the profession of Immersive Storytelling Designer (ISD). In conclusion, the research approach leverages the diverse complexity of disciplines to foster a disruptive communication (TISD) and train a new professional figure (ISD), skilled in creating strategic, effective, and empathetic communication.

1. Introduction

We live in an era characterized by unprecedented complexity, intersections, and dynamics in constant change, which require the creation of cohesive strategic initiatives (Cerruti, 2018) that have the primary objective of effectively addressing the challenges of sustainability – encompassing environmental, social, cultural, economic, and digital dimensions. If we analyze the major crises of our time: the climate crisis, characterized by the increase in climate temperatures; the social and cultural crisis with issues related to identity and the increasingly regular episodes of violence (European Institute for Gender Equality, n.d); the economic crisis - transversal to all the previous ones - and finally the one produced by digitalization and the impact that this transition is having also in terms of digital divide. To bring about positive transformations, clearly communicating the issues and enhancing audience awareness is crucial. Thus, a proficient path may be discovered through the profound efficacy of emotional storytelling. Despite the consistent spotlight on current crises through various information channels and academic studies (Vaughan et al., 2022), the task of raising collective consciousness and significantly shaping public opinion remains fraught with challenges. Within this context, the role of immersive transformative storytelling assumes pivotal significance.

The introduction of the term "Storytelling" in the field of Communication Design emphasizes the fundamental importance of transforming information, visual messages, and scientific data into engaging stories that can leave a lasting impression (Ke, J. & Yoon, J. (2020). Storytelling, throughout history, has served as a conduit for the transmission of wisdom, values, traditions, and insights, often wielding persuasive influence. Aristotle, in his *Poetics*, astutely recognized the persuasive potency of narrative, positing that well-crafted stories possess the capacity to evoke emotions and engender receptivity to messages (Aristotle, 330 BC/1987). Stories can more or less subtly influence the understanding of the world, conveying ideologies and cultural values, thereby molding perspectives, influencing decisions, and compelling specific actions (Barthes, 1977) that resonate with the audience's experiences and beliefs (Fisher, 1984). Effective Communication Design can indeed transport the audience to another world, make them reflect or encourage action, communicating complex messages through a combination of meaningful elements capable of evoking emotions and creating deep connections with the end user in an effective and transformative manner, making storytelling a tool of impact for current and future scenarios.

From the perspective of innovative communication, design - and particularly Storytelling Design - assumes a pivotal role as a catalyst for change thanks to its ability to stimulate positive behaviors, ignite action, and foster participation. By encompassing both the transformative and narrative components, we could thus define the Transformative Storytelling Designer as a practitioner able to convey contemporary values and challenges, thereby fostering enduring positive behavioral changes. This approach stands out for its innovation, as the power of storytelling and dissemination has the capacity to influence by "awakening minds through the power of storytelling" (Kerrison, 2022), producing not only a strong emotional suggestion in the user but mainly contributing to actively engage them in more conscious and caring actions. In this scenario, design cannot take an isolated role; on the contrary, it is essential that it promotes, thanks to its fluid and critical nature (Bovo, 2022) and the ability to materialize (Faccin, 2017), a mixture of strongly interdisciplinary knowledge, for example:

- The ability of Communication Design to work closely with sociology helps to understand the social and cultural dynamics that influence the perception and interpretation of messages;
- The synergy of many disciplines - including those of main interest for the contribution are Design, Psychology, and Performing Art - with advanced digital technology (especially Extended Reality) allows to exploit of the latest innovations, ensuring cutting-edge and evolving needs of society, without losing the critical and ethical approach with which they must be used;
- The possibility for psychology to work on the impact of immersive digital tools by assessing their effectiveness and the related risks.

As stated by Papanek (1971), design has the task not only to create but also to understand, collaborate, and plays a significant part in shaping a society that is more inclusive and geared towards sustainability.

Design, due to its varied and complex nature, becomes a perfect candidate for mediating different areas of knowledge and conveying wisdom. Therefore, while on one hand, Communication Design facilitates the understanding and adoption of new ideas and innovations, on the other, it encourages imagining new possibilities and becomes a compass capable of navigating the complexity of the present and future.

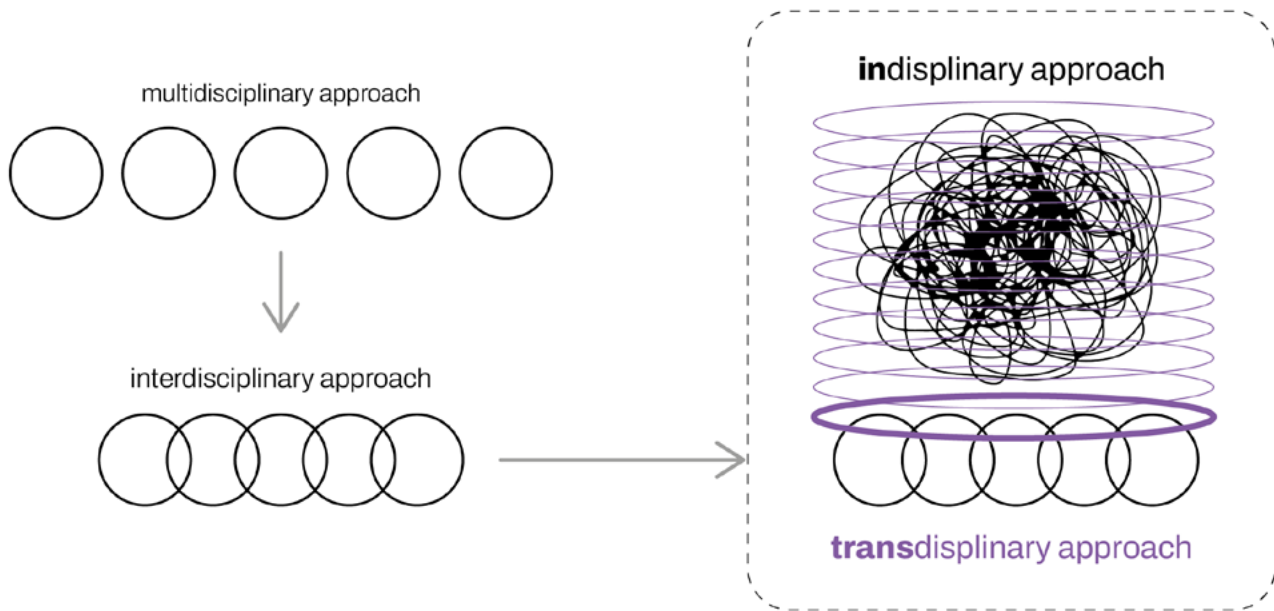


Figure 1. Indisciplinary approach.

2. Methodology

In this scenario focused on behaviors and awareness, transdisciplinarity emerges as a fundamental concept since emergency communication requires solutions that go beyond the conventional limits of disciplines, moving from the previously discussed interdisciplinarity which, although borrows methods and approaches from various fields, stays restricted to the confines of specific disciplinary boundaries.

As Nicolescu (2002) observed, transdisciplinarity should not be understood only as a methodology, but as a future perspective that recognizes the interdependence and connection between various fields of knowledge. Thanks to this systemic vision, it emerges how design must be placed within a fluid context in which to make its skills available. This context has been defined as DASD, as it hybridizes in an unconventional approach the disciplines of Design, Performing Arts, Social Sciences, and Digital. These four disciplines represent the 4 main pillars for the development of a Transformative & Immersive Storytelling Design (TISD). The collaboration between disciplines that seem so distant from each other can indeed give life to the design of immersive storytelling that is an excellent candidate for the development of transformative experiences, in which each of the involved disciplines can effectively impact based on their peculiarities:

- **Advanced digital technology (XR)** has been included in the research because, when well designed, it is capable of offering new possibilities for interaction, immersion for the design of transformative experiences that go beyond traditional boundaries. By immersing individuals in a reality different from the physical one, it is possible to allow transformative experiences that break the constraints of physical reality and open new possibilities for exploration and self-

discovery and of the other, allowing a greater sense of involvement and presence. These technologies transport individuals into virtual worlds, simulated and interactive environments that allow a greater sense of immersion. By immersing individuals in these digital realms, technology indeed enables transformative experiences that break the constraints of physical reality and open new possibilities for exploration and self-discovery.

- **Social sciences**, and particularly psychology and sociology, foster potential for behavioral transformation as they can analyze changes by studying, according to Grof (2000), the alterations of the normal stable structure of the mind and the "quantum change" (Miller & De Baca, 2001). Such transformation consists of a breaking point in which an individual would undergo a radical and irreversible change that can have both a primarily cognitive and emotional nature. Moreover, digital and new technologies are becoming increasingly pervasive to the point of becoming, in everyone's eyes, even invasive. For this reason, today it becomes essential to question especially the social repercussions that these tools have through the direct and active involvement of psychology and sociology, crucial actors capable of analyzing their impacts.
- **Design** plays a pivotal role in shaping the transformative experience, serving as an orchestrator that synthesizes insights from diverse fields to create and forge cohesive and impactful experiences. Designers apply their creative skills to translate psychological, sociological, and technological concepts into tangible, engaging, and, above all, impactful experiences. Design can at the same time unfold to interesting future scenarios thanks to its inherent ability to foresee and understand, for example, the strategic importance of new technologies, without limiting itself to technical aspects, but opening up to contamination and sharing with other disciplines for the development of high-value content.
- **Performing Art**, and particularly theater, is a fundamental discipline for the construction of such experiences. Although very distant from the use of advanced digital technologies (Dixon, 2006), it represents the possibility of exploring different roles, behaviors, and scenarios in a theatrical experience that by its nature is immersive. Performing Art allows the development of skills related to communication, empathy, and collaboration, aiding the process of identification, providing unconventional tools and skills. Through Performing Art, individuals can explore different roles, behaviors, and scenarios, putting themselves in the "shoes of others" (perspective-taking). Performing Art fits into this scenario by also strongly contributing to the development of a critical and interpretative attitude thanks to the solid cultural base inherent in the nature of the discipline. Furthermore, within the world of art, there is a fundamental aspect through which it is possible to increase empathy and implement immersive digital communication, making it even more effective through the concept of identification, typical of acting work. This sector, although usually distant from the use of new technologies, plays a crucial role in DASD thanks to such a significant approach to identification.

In the DASD framework, Performing Art - and specifically theater - assumes an exceptionally powerful "disruptive" role. This form of art, for its inherently deconstructive nature and free from schematic constraints, allows overcoming the traditionally disciplinary vision of contributions, thereby offering an "indisciplinary" approach that disrupts established norms and transcends traditional limits, questioning standard practices and beliefs. Consequently, it becomes clear that to create transformative communication, a deep alliance between different disciplinary fields is necessary. Through this "indisciplinary" approach, it is indeed possible to enrich the entire design process, taking into account different perspectives, hypotheses, and insights, overcoming the boundaries of sectors, and favoring a holistic vision that achieves as impactful results as possible. Although based on methods and tools from different disciplines, it is essential to detach from rigid models that do not reflect the fluidity of reality, capable of adapting and evolving in response to emerging and continuously evolving variables, facilitating processes of learning and active participation. Storytelling design, and particularly its ability to stimulate emotions and wonder, has the great ability to explore the transformative potential of experiences with a strong impact on society with particular reference to the stimulation of proactive behaviors of users

(Gaggioli, 2015) to the point of considering such transformative experiences when, in agreement with Kitson et al. (2019), they can reshape the individual vision and change their perspective and identity. Transformative storytelling design thus represents an important testimony of the role of transdisciplinarity and collaboration between very different disciplines, thanks to the possibility of drawing on the principles of psychology, sociology, theater, technology, and design. The integration of these disciplines recognizes a central role of design as a catalyst for design, able to foster connections, exploit the limits and opportunities of all the disciplines involved, and orchestrate experiences that evoke emotions, inspiring personal growth and stimulating reflection with the ultimate goal of strategically and functionally contributing to forming a society as attentive and empathetic as possible in the face of the critical issues that are affecting us. What is, however, fundamental to consider is that emotion can be evoked not only by the project itself but also and above all by the relational meaning of the experience linked to social implications (Desmet & Roeser, 2015) and personal associations trying to contribute to some positive behavioral trends, even reducing aggressive behaviors (Yang et al., 2016) and promoting, among others, ecological consumption (Wang et al., 2019).

3. Projects

Faced with this theoretical context, it was determined to begin a direct and substantial investigation, carrying out tangible projects at both the national and international levels, implementing both national and transnational projects of a marked transdisciplinary nature, such as the EMOTIONAL and INSIDE-ACT projects, where the first focuses on the Transformative & Immersive Storytelling Design itself (TISD), and the latter addresses the need to develop a training package for cultivating the profession of Immersive Storytelling Designer (ISD).

3.1 Emotional

The EMOTIONAL project, namely Experience Made in Italy: Immersive Storytelling Design for Contemporary Values and Sustainability, was born within the PNRR, the National Recovery and Resilience Plan, a crucial initiative for Italy for the relaunch and modernization of the country in response to the economic and social crisis triggered by the COVID-19 pandemic. The EMOTIONAL project aims to enhance "Made in Italy" through the use of immersive storytelling, emphasizing the quality, innovation, and sustainability of Italian products in order to valorize the cultural, creative, and manufacturing heritage of "Made in Italy" and promote sustainable consumption practices. The goal of the EMOTIONAL project is to explore the use of immersive technologies and storytelling to effectively communicate the tangible and intangible values of "Made in Italy" products and services, focusing particularly on sustainability and innovation. It involves designing immersive experiences that valorize the Italian cultural and manufacturing heritage, improving knowledge and action regarding sustainable and circular production practices, implementing sustainable design strategies, and responsible consumption behaviors. To achieve this goal, the project conducts a series of studies and research to better understand market dynamics and consumer expectations, collaborates with companies and institutions to test and implement the proposed solutions, and finally focuses on the development of immersive narrative content that exploits advanced technologies such as extended reality (XR). For this purpose, the project involves multidisciplinary public and private partners to combine diverse and complementary skills for the realization of the project's objectives. The partners involved are: University of Florence (project leader), Polytechnic University of Bari, University of Bologna, Polytechnic University of Milan, Polytechnic University of Torino, University of Brescia, University of Padova, Interior and Design District (DID), and companies from the Tuscan manufacturing sector. Therefore, the aim is to create immersive experiences that enhance Italian cultural and manufacturing heritage, improving understanding and action regarding sustainable and circular production practices, and promoting sustainable design strategies and responsible consumption behaviors. Specific objectives include strengthening the competitiveness of Italian businesses through the adoption of new technologies, promoting a cultural shift towards sustainability, and increasing global awareness and appreciation for the value of Made in Italy. To achieve this goal, the project focuses on a range of practical and methodological

activities, including the development of immersive and narrative content utilizing technologies such as Extended Reality (XR), analysis and research to better understand market dynamics and consumer expectations, as well as collaboration with companies and institutions to test and implement proposed solutions. The aim is to create an ecosystem of cooperation among research entities, businesses, and cultural organizations to foster innovation, technology transfer, and the enhancement of Italian cultural and productive heritage. The project design process of EMOTIONAL, currently underway, comprises the following 6 macro-phases:

- **Baseline project definition and data analysis:** this phase centers on analyzing the Made in Italy phenomenon, with particular emphasis on humanities analysis (historical, social, and cultural); sustainability analysis; analysis of digital media and new technologies; social perceptual analysis and evaluation; territorial analysis; identification and selection of the most successful companies within the production system to depict with a perspective aimed at disseminating the values of Made in Italy.
- **Designing the new "Generative Made in Italy Identity":** this phase encompasses the vision and design-driven strategy with the design of the most effective immersive storytelling model in terms of transformative design.
- **Research on design processes, technologies, and tools for immersive narration (XR),** focusing on identifying those most effective for the intended type of narration and storytelling, along with the subsequent implementation of immersive experiences.
- **Executive design of immersive digital simulator development.**
- **Validation of the Proof of Concept:** analysis and development of criteria for validating emotional parameters in relation to digital tools for immersive storytelling and social impact.
- **Identification and valorization of other relevant Italian industries** through focus groups, design-driven strategy guidelines, and toolkit development for capacity building, experiential testing of final immersive experiences, and the development of a corresponding toolkit.

Each of these phases represents a fundamental building block in the design process, working synergistically to achieve the objective of valorizing Made in Italy through immersive experiences. The project aims not only to disseminate and foster appreciation for the values of Italian excellence but also to stimulate positive and enduring change in the production and consumption sectors by specifically combining design, social sciences and advanced digital technology (XR). The goal is twofold: on one hand, to celebrate and share the cultural richness and distinctive quality of Italian products; on the other hand, to serve as a catalyst for the adoption of virtuous models reflecting the high standards of sustainability, innovation, and social responsibility that Made in Italy embodies. This holistic approach aims to influence the global production and cultural ecosystem, promoting a new awareness and appreciation for conscious consumption and qualitative excellence.

3.2 Inside-Act

The INSIDE-ACT project idea, on the other hand, emphasizes the importance of targeted training that has led to the design of a training package within the new field of transformative storytelling design. The design of the INSIDE-ACT training pathway was developed based on a framework of specific needs identified at three different levels related to the increasing demands from the labor market in relation to: i) the introduction of a new professional figure for advanced strategic-digital immersive communication; ii) the lack of integrated DASD (Digital, Arts, and Social Sciences) competencies; iii) the absence of a targeted training pathway to address current gaps and to train the required new professional figure. These needs were extrapolated from an analysis of quantitative data from European, national, and global labor market reports, scientific literature, and trends identified through formal and informal interviews conducted during the research process with leading entities in the immersive communication sector. The INSIDE-ACT training package aims to shape a new generation of professionals from different disciplinary fields and is the result of an in-depth analysis of recent digital market trends (OECD, 2023), the increase in the need for

digital communication skills, and the urgency to respond to current social, environmental, and economic challenges. INSIDE-ACT was written and conceived through a synergistic collaboration between various European partners (University of Florence (Italy), Elisava (Spain), Catholic University of Milan (Italy), Valahia University of Târgoviște (Romania), GOLD Production (Italy), GLUK (Lithuania), KOSMOS (Lithuania), ESPRONCEDA (Spain), FEST (Belgium), DID (Italy), AMBIT (Spain), CPI (Slovenia), ROGEPA (Romania), each of which brought interesting perspectives, through their own experiences and knowledge. This collaboration was fundamental to ensure that the training program could cover all the essential aspects of Transformative & Immersive Storytelling Design. The core of INSIDE-ACT is, in fact, the training of a new professional figure – the Immersive Storytelling Designer (ISD) - designed to meet the needs of a continuously evolving communication market, where the ability to tell stories in a new and engaging ways is increasingly demanded. The primary goal of INSIDE-ACT is to create the qualified profile of an Immersive Storytelling Designer (ISD), capable of integrating the knowledge of Design, Performing Arts, Social Sciences, and Digital (DASD) to realize immersive and strategic digital communications (XR), heighten the consciousness of recipients regarding contemporary European values and challenges. The INSIDE-ACT training program intends to combine theoretical teaching with experiential and practical learning, involving not only academic and training institutions but also cutting-edge companies in the field of Transformative & Immersive Storytelling Design. This enriches the learning experience, providing a real context for the development of tangible projects. This training model, in conjunction with all activities undertaken within INSIDE-ACT, provides insight into the transformative potential inherent in strategic immersive storytelling. Its objective extends beyond the dissemination of awareness regarding contemporary challenges and their ethical underpinnings; it also aims to cultivate virtuous behaviors within the community. At the core of this initiative lies the development of the professional profile of the Immersive Storytelling Designer (ISD), recognized as a catalyst for fostering sustainable, inclusive, and critically approaches who, positioned innovatively within the evolving landscape of the European labor market, symbolizes a dedication to facilitating positive societal change. The INSIDE-ACT training package is conceived as an intensive format consisting of 5 theoretical/experiential modules + 1 intensive practical laboratory module, aimed at creating concepts for immersive experiences that stimulate empathy, for a total duration of 3 weeks. The first two weeks are dedicated to completing the initial 5 modules, while the last, more intense week will focus on the final and practical laboratory module. Each training module will have a specific overarching theme: Digital Perception, Performing Design, Emotional Business, Extended Performing Art, and Immersive Storytelling Design. The objective is to connect various project areas, highlighting their common aspects and potentialities through the mutual recognition of strengths, to align and amalgamate them. The INSIDE-ACT project is structured as follows:

- **Digital Perception (Digital + Social Sciences):** this module focuses on the intersection between digital technology and social sciences, exploring how human perception is influenced and shaped by advanced digital technologies such as Extended Reality (XR). Topics covered may include user experience psychology and, notably, how digital interfaces influence behavior and social perception, highlighting their benefits, limitations, and opportunities.
- **Performing Design (Performative Art + Design):** In this module, students understand how to integrate principles of performative art into design. This may include designing interactive experiences, artistic installations, and environments that encourage active participation and performance. It is an approach that blends artistic and design creativity to create immersive and engaging experiences even without the use of advanced digital technologies.
- **Emotional Business (Social Sciences + Business):** the module emphasizes the need to evoke emotions through corporate communication that transcends traditional marketing, focusing instead on narrating the values and ethical initiatives adopted by companies. The goal is to use emotional strategies to promote understanding that goes beyond product details or technical aspects, aiming instead to express the principles and ideals pursued by the organization. This approach aims to actively involve employees in the communication process, emphasizing both

internal (employees) and external (customers and community) storytelling, presenting a corporate image that reflects values and ethical commitment.

- **Extended Performing Art (Performative Art + Digital):** this module explores the expansion of the boundaries of traditional performative art, incorporating innovative digital technologies to enrich it with new languages and artistic expressions, for example, through the use of Extended Reality (XR), which opens up new perspectives in performance creation, transcending conventional limits. Through this integration, performative art transforms, offering more immersive and multidimensional experiences that blend the real and the virtual to create radically new and compelling artistic forms.
- **Immersive Storytelling Design (Design + Digital):** in this module, the focus is on designing engaging stories through the use of advanced digital tools. This allows experimentation with interactive storytelling techniques, harnessing the power of digital media to innovate narrative modalities, intertwining storytelling and technology with the aim of generating immersive and captivating narrative experiences.

The final module of the course, namely the Workshop Immersive Experience Design for EU values, represents the phase in which participants of the training pathway engage in the design of immersive experiences with the aim of narrating stories capable of promoting and disseminating European values. In this case, students are called upon to experiment with the diverse knowledge acquired during the theoretical/experiential modules, synthesizing and applying the skills acquired in the previous theoretical/experiential modules in a practical context final module is therefore an operational training experience (learning by doing), characterized mainly by the direct interaction between trainers, companies (traditional, digital, and creative), and students. The aim is to stimulate interaction, even within the educational community, in a non-hierarchical manner, equating the roles of student and trainer: for this reason, each module includes a "design appointment" phase - during which small laboratories related to the reference module will be carried out - allocating a work session, thus increasing the percentage of hours dedicated to dialogue and exchange of experiences and knowledge.

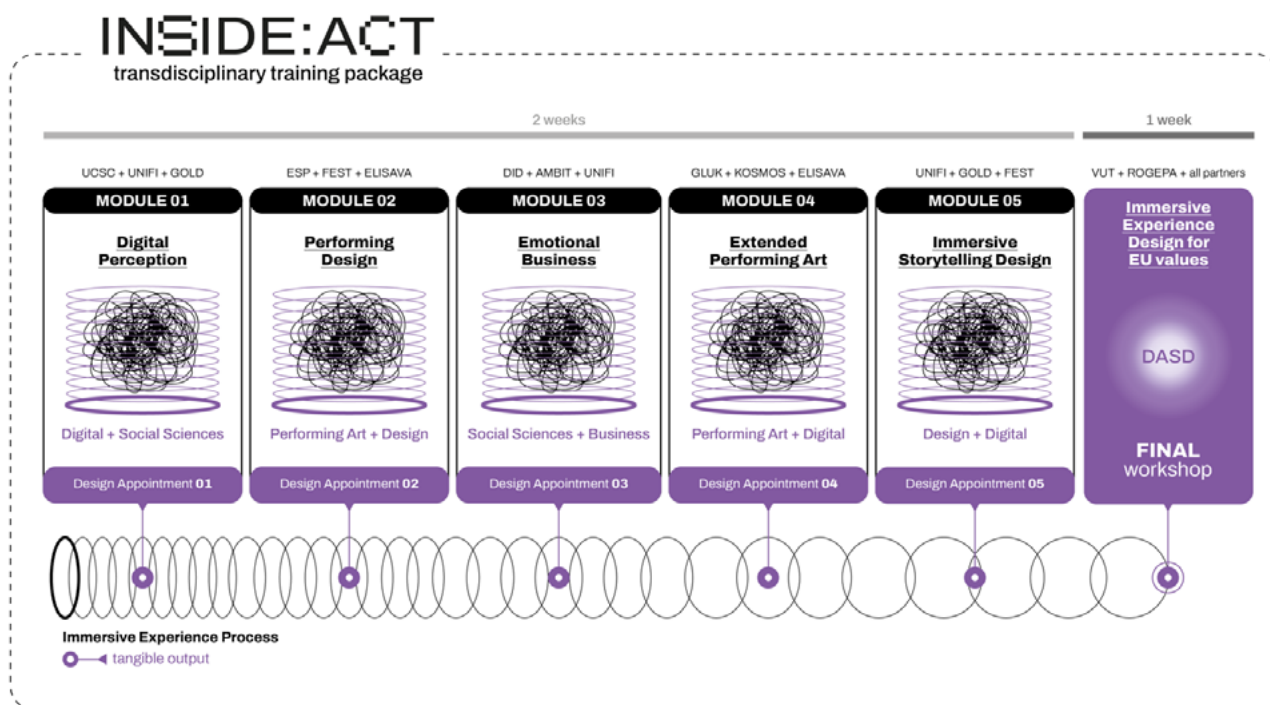


Figure 2. INSIDE-ACT training package structure.

4. Conclusion

In conclusion, Transformative & Immersive Storytelling Design emerges as an evolving field crucial for fostering awareness of present and future challenges. It seeks to elicit profound emotional responses from users, fostering introspection, personal development, and behavioral shifts in response to the complexities of contemporary and prospective issues. Through the interdisciplinary approach described earlier, which amalgamates methodologies from Performative Art, Social Sciences, and immersive technologies, transformative design offers a framework for fostering empathy and deeper connections with the presented complex framework, facilitating meaningful exchanges between individuals and their environments. In this context, the designer's role extends beyond merely creating functional objects or services to becoming a facilitator of transformative experiences capable of shaping the perception, attitude, and behavior of individuals. This requires a deep understanding of emotional dynamics and the ability to design with a clear intention to stimulate positive change. To fully realize the potential of transformative and emotional design, it is crucial to promote "indisciplinary" collaboration, leveraging the knowledge and skills of various fields to create solutions that are forward-thinking and ethically responsible. The "EMOTIONAL" project in the context of transformative design underscores the crucial importance of an approach that goes beyond functionality and aesthetics to touch the most intimate chords of human experience, promoting significant change through emotional connection.

Transdisciplinarity, then articulated in a subsequent "indisciplinary" approach, as above-mentioned, thus emerges here as a key element to inform and transform, adopting an ethical and responsible perspective, representing an invitation to explore new frontiers of design, where emotions are seen not as a secondary aspect but as the central core of the design experience and communication. This pioneering methodology, foundational to the INSIDE-ACT training project, underscores the significance of embracing disciplinary diversity to stimulate upskilling and reskilling, overcoming the limitations of professional backgrounds. The overarching objective is to cultivate Immersive Storytelling Designers (ISDs) capable of crafting strategic, effective, and empathetic communications, thereby contributing to the development of professionals equipped to face contemporary challenges through a transformative and immersive storytelling approach. In conclusion, the research and practical experimentation outlined depart from the intricate diversity of disciplines to blur their boundaries, endeavoring to cultivate a disruptive, effective, and empathetic storytelling design approach. The intersection of disciplines in Transformative & Immersive Storytelling Design, as exemplified in the paper, mirrors a paradigm shift towards more holistic approaches to problem-solving and innovation. In an era characterized by interconnected challenges, such as sustainability, social justice, and technological disruption, the ability to transcend disciplinary boundaries becomes increasingly crucial, especially in Communication Design but not only. This investigation serves, in fact, as a microcosm of this larger trend, showcasing how collaborative efforts across diverse fields can yield novel insights and solutions that resonate far beyond the confines of a single academic conference. Thus, while the immediate impact may not be readily apparent, the implications for interdisciplinary collaboration and holistic problem-solving are expected to be far-reaching.

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