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BRIDGING DESIGN AND EDUCATION: INNOVATING LIFELONG LEARNING IN THE PUBLIC SECTOR.

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ABSTRACT | In the information age we are living through, marked by increasing complexity and rapid changes in social and technological contexts, the ability to understand and face reality must always be challenged and nurtured. As humans, the need to dedicate time to lifelong learning of the self is more critical than ever, and there is a need to invest time and resources in improving the education offered by the public sector.

The aim of the research is aimed at assessing the potential role of designers - by nature multifaceted and transdisciplinary - in the ongoing changes in the learning society. Specifically, it aims to study the integration of design methodologies in educational programs dedicated to lifelong learning (LLL) and the development of soft skills aimed at stimulating logical-critical thinking and awareness of one's learning process. A secondary objective moves from problematizing the impact of Service Design and aspires to align design pedagogy with the needs of the public sector.

The preliminary analysis of the existing literature in education takes the European context into account and examines both the push for standard-setting in teaching and assessment from a collective perspective of aligning the skills needed to prepare for the labor world and the opportunities for profiling and adaptability brought by technological evolution. Moreover, from the primary study on the state of the art of designers in the public sector, an imbalance is highlighted between the expectations of service & systemic designer training and actual integration into the job market, even though especially in education-new job figures such as the instructional designer are becoming more popular.

The proposed methodology for initiating the research articulates operations in three phases, each of which envisions expected results. The first phase makes use of tools such as desk analysis and survey research to identify gaps and needs in LLL and soft skills growth programs; the second phase synthesizes in a diagram the intersections between the linguistic analysis of the training objectives of a corpus of design curriculum, the impressions of teachers and learners that emerged from focus group sessions, and the public sector needs found in the first phase; the third phase is concerned with the development through co-design and evaluation through user testing of design-to-public sector bidirectional instructional unit prototypes. By examining the intersection of design and education, this study seeks to elucidate the significance of the designer's role in shaping educational experiences. It also draws parallels with historical movements to contextualize contemporary efforts to innovate educational practices.

In conclusion, doctoral research aims to improve the expertise of design students to prepare them to encounter work in the public sector and aspires to foster interdisciplinary exchange between disciplines, too, first of all, individual and consequently relational and collective improvement in the complex society.



1. Introduction

The world we live in is becoming an increasingly complex and rapidly growing technological ecosystem that risks eluding human understanding (Han, 2022). Approach to reality is as changeable and uncertain as is the infosphere (Floridi, 2020a), and the challenges brought by the information (Fischer, 2000) invite us to never stop our learning process. In the learning society (Field, 2000) in which we are situated, it is necessary to “promote a knowledge capable of grasping global things” (Morin, 2001, p.7).

The need for continuous learning and skill development is more critical than ever. There is a need to “pursue our pedagogical effort” (Meadows, Meadows & Randers, 2022), going beyond the current educational system (Morin, 2015), to provide skills suitable for governing complexity (Gorzeń-Mitka, 2015). In this process, the impact training of educators is imperative due to the transition of the teacher into the role of capacity builder (Black, 2003).

Stating its nature as a complex phenomenon (Avilés, 2023), an urgent field of intervention is education. Traditional educational approaches often fall short in preparing individuals to navigate this complexity, particularly in the workforce of the public sector, where technologies advance rapidly (Farias-Gaytan, Aguaded & Ramirez-Montoya, 2023), while human skill development lags (OECD, 2023a). Especially in the area of services and information offered by the public sector, workers face “an accelerating rate of change in the knowledge and skills necessary to remain competitive” (Fischer, 2000), and it becomes crucial to train proactive figures capable of empowering, not just teaching.

With its hybrid nature as a third culture (Cross, 1982) agent, the approach of design can become an active actor in this changing process to educational approach and skills development.

This research project aims to explore the multifaceted role of designers in addressing these challenges in the public sector, focusing on two main areas: the integration of design methodologies in educational initiatives to foster lifelong learning (LLL) and soft skills development and the advancement of design pedagogy to better match with public sector needs.

2. Literature Review

2.1 Transformations in the Public Education Context

Since 2018, the European Union has set out guidance for educational operators (e.g., teachers and policymakers) to foster the development of lifelong learning pathways. Eight key competencies have been stated for the structural education of any learner, from primary school to adult and lifelong learning (European Commission, 2019).

The indicated competencies mainly focus on strengthening soft skills suitable for providing the basis “for developing one's knowledge and potential and for participating in society” (OECD, 2023b). The goal of any educator should be to stimulate a critical, resilient learning process (Bocciollesi, 2017), capable of dealing with any change with a systemic vision, given the extremely volatile nature of the labour market nowadays (European Commission, 2011).

Specifically, the three main soft skills identified by the Organization for Economic Co-operation and Development are Curiosity, Systematic Thinking, and Learning to Learn. The latter refers to awareness of one's degree of knowledge and self-organization of one's learning process (Freitas, 2021). Consequently, the directionality of pedagogy is overturned: the learner becomes a trainer of himself, and the teacher “must never degenerate into automatism” (Lucisano & Salerni, 2022, p.27), considering himself a learner to evolve.

In this scenario, assessment models are also being standardized: Bloom's Taxonomy (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956) is a benchmark metric in the assessment of learning objectives described in a formative curriculum. Demonstrating the importance of the Learning Learn soft skills, in one of its latest revisions, Bloom's Taxonomy was updated with the addition of the criteria Metacognitive Knowledge, which states as follows:

“Metacognitive Knowledge is importance of students being made aware of their metacognitive activity, and then using this knowledge to appropriately adapt how they think and operate.”
(Krathwohl, 2002, p.124)

While on the one hand, there is a tendency towards the standardization of competencies and assessment models, on the other hand, technological trends are pushing towards the customization of digital training environments (INDIRE, 2023), as well as the emergence of adaptive ecosystems capable of enhancing the individuality of each learner.

2.2 Wicked problem in Design Curricula for the Public Sector

In front of a scenario that is complex, technological, and heavily saturated in innovation, design has always shown itself to adapt “to embrace the theoretical and methodological premises that have enabled innovations” (Riccini, 2013, p.41).

Although designers have begun to be involved in policy-making strategies, there is still a gap between service & systemic design graduates' preparation and actual integration into the job market (Morelli, 2021). Service design can be seen as the framework that has undeniably led to a democratization of design mindset in contexts other than design, but which is nevertheless experiencing a wicked pedagogy problem (Schell, N.D.) for the following reasons:

- risk of reducing the action of design and planning to a form of 'toolism,' i.e., the use of tools not adapted to the needs of the learner or the context (Auricchio & Göransdotter, 2021);
- risk of homologating design methods (Auricchio et al., 2021), disregarding the cultural and ontological differences that could instead enrich the debate and development of methods and thinking in design in general;
- design thinking is often applied in quick sessions but is hardly ever chosen as a long-term training practice (Schell, N.D.)

Furthermore, according to reports from the Service Design Network (Mager, 2016), no discipline specifically trains designers to interact with the public sector.

Yet, given the social and public benefit mission aimed at training the workforce that will need to integrate with the economic sectors of the future, design universities should be one of the key stakeholders in the public sector.

Given these challenges, we need to understand whether universities that offer courses of study in the domain of design, either systemic or service design, are ready to prepare their learners for the encounter with work in the public sector. To validate this, it is necessary to assess both the effectiveness of design methods (Cash, Daalhuizen, Hekkert, 2023) and the learning objectives oriented towards both hard skills and soft skills provided by universities of design (Soares, Carvalho & Dias, 2020). In this search for a pedagogy of design, a possible method of exploration should start from an accurate study of the foundational principles expressed by the founders of the Italian design education (Pansera, 2015). According to Aldo Calò, a school of design should

“arouse in the students a technological problem that puts them in a position to organize technical-scientific data according to concepts of form and content”
(AA.VV., 1972, p.45)

Recalling the demands of European standards concerning teaching strategies to reduce functional illiteracy (United Nations Development Programme, N.D.) and to improve logical skills required by STEM programs.

Only recently, in both the private and public sectors, there has been a growing demand for instructional designers (Fondazione Scuola Beni Attività Culturali, 2024), professionals skilled both in structuring formative content and taking into account their technological implementation.

Understanding whether this trend will be able to take hold in the long term will be important, assessing whether the designer can coordinate and design a learning process. It is essential to understand whether the design has the right credibility to enter into Lifelong learning-oriented programs and the development of soft skills learning paths.

Taking into account the considerations expressed so far, the questions of this doctoral research are the following:

1. Which are the competencies suitable to support the transformation in education by the public sector?
2. Is the designer able to coordinate and design a learning process?
3. How could a designer be trained to support education programs in the public sector?

3. Methodology and Expected Results

To attempt to answer the research questions, the doctoral research is planned following this three phases methodology:

1. Understanding and revealing opportunities
 - Desk analysis and case studies analysis to define a taxonomy of programs of lifelong learning currently carried out in the public sector to foster the development of soft skills in Europe.
 - Choice of three fields of intervention (e.g., policy-making, culture, tourism, justice, health) as research samples, according to which sectors are most in need of soft skills.
 - Survey research to at least one hundred operators from each sampled area in the public sector to detect needs and gaps in current programs.
 - Qualitative interviews with a sample of at least five HEI teachers from each European region to detect opportunities and challenges.
2. Comparing and mixing
 - Language analysis of a corpus composed of a collection of learning outcomes extracted from HEIs study programs in service and systemic design to map the competencies with which design students in Europe are being trained.
 - Diagrammatic model to match goals and needs of competencies revealed by the analysis of the sectors and the competencies revealed in design curricula.
3. Modeling, exchanging, and integrating
 - Pilot of an instructional unit created ad hoc for public sector audiences through co-design techniques with design educators, stakeholders from the public sector, and specialists identified in the previous stages.
 - Pilot of an instructional unit created ad hoc to enhance the curricula of design HEIs and aimed at preparing for work in the public sector through co-design techniques with design educators, stakeholders from public sector, and specialists identified in the previous stages.
 - Prototype development of hybrid environments made by a set of physical and digital products useful for pilot testing.
 - User test to evaluate the prototype and define improvements and scenarios of the model.

At the end of the research path, the expectations are to have investigated how the figure of the designer can be promoted within the public sector and conventional educational environments and to assess the state of the art of design pedagogy in Europe.

4. Conclusion

To conclude, following the steps of this doctoral research could be a stimulating trigger to question the impact of design, even if the inadequacy of design to deal with such a complex context as the public sector, which is different from the private sector with which it is accustomed to deal, might emerge. The scenario envisioned highlights how the role of the designer in the public sector, as a designer of experiences, services, interfaces, physical or digital products, and as an intermediary with data, assumes ethical and political significance. The designer can contribute to creating relational spaces of education and participation in which the user is seen both as a “collective subject” (Deni, 2021, p.63) and as the custodian of his or her own “individual human project” (Floridi, 2020b, p.24). The conjunction between design and pedagogy is in the common nature of applied science: just as the educational decision calls into question a multiplicity of knowledge and sciences with their autonomous statutes (Lucisano et al., 2022), the study and practice of design has resorted to the adoption of different sources and subjects (Pansera, 2015). Nevertheless, it could be pointed out that this is not the first time that these two disciplines have been tried to be juxtaposed. In the 1970s, the radical design and educational movement Global Tools proposed experimental and innovative teaching methods driven by the idea that “life is a permanent and global education” (Borgonuovo & Franceschini, 2018, p.4). Designers should constantly go in search of comparison with other disciplines and present themselves with pride, listening disposition, and respect in disciplinary contexts where so far they are not recognized.

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