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The BSBI School of Business and Innovation and its academic community are proud to launch its third scientific journal, as part of our growing ambition to establish BSBI as not only a respected institution but also one that contributes to research. The Scientific Journal of Creative and Digital Arts publishes original research papers and review articles. In this framework, researchers, academics but also students from any country, are invited to publish pure or applied creative & digital arts or design relations research of international interest. By definition the Journal has a global orientation, it is structured and organised upon international standards, contributing in the most fruitful way to the progress of Creative, Innovative and Digital Arts. The Scientific Journal of Creative and Digital Arts will add to the progress of scientific and artistic knowledge and will open a new chapter in the history of the BSBI Berlin School of Business and Innovation. The Journal aims to meet the highest expectations of its international readership, serve as an inspiration and invite intensive discourse. It will include publications from the fields of arts, film, motion design, visual effects, UI & UX design, interaction design, illustration, virtual and mixed reality, metaverse, NFT, mental health, creative leadership and many more. I strongly urge you to visit our Journal's official webpage and contribute to our efforts.

Prof. Dr. Kyriakos Kouveliotis
Editor-in-Chief
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3. UI, UX and Interaction Design
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The school fosters an inclusive, innovative and supportive learning environment that combines blended learning with traditional teaching methods, enabling students to gain both academic knowledge and practical, real-world experience.

BSBI has received several prestigious awards recognising its commitment to innovation and excellence in education. These include the Best Innovation Strategy Award at the AMBA/BGA Excellence Awards 2025 for BOTSBI, its AI-powered robot, as well as the Highly Commended: Best Lifelong Learning Initiative Award 2026. The school also received the Bronze Award for Blended and Presence Learning at the QS Reimagine Education Awards 2024.

In the latest QS Stars University Ratings, BSBI achieved 5 Stars in Employability and 5 Stars in Online Learning, along with an overall 4-Star "Very Good" rating, reflecting its dedication to student success and industry-relevant education.

Transforming Creativity: The Role of AI Technologies in Higher Education's Creative Industries

Dr. Okan Tansu[1]

Abstract:

Higher education's creative industries are undergoing transformation through artificial intelligence (AI), which brings innovative artistic tools and educational changes, and challenges established creative concepts. This article investigates how AI affects creative fields, including design, music, and digital media and performance arts, by demonstrating its ability to personalize learning and facilitate collaborative work and artistic innovation. AI technologies both improve creative workflows and enable students to experiment more, while creating significant challenges about authorship rights and copyright protection, originality, data privacy, and equitable access. The analysis demonstrates that AI needs curriculum reform, faculty development, and ethical frameworks to serve as a creative catalyst instead of replacing human artistic work. Higher education institutions need to develop integrative approaches that unite technological education with ethical contemplation and inclusive policies to handle both creative possibilities and risks. The proposed approaches will safeguard human creativity's emotional, cultural, and social aspects while teaching students to thrive in an AI-controlled creative economy.

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Artificial intelligence (AI) establishes a fundamental transformation of creative industries in higher education through its development of new artistic tools and methods, educational approaches, and scholarly practices. The technological revolution seems to be beyond tool adoption because it fundamentally changes how people think about creativity, along with its educational output and creative achievement. AI technologies find their way into creative workflows across conventional and digital design, music composition, multimedia storytelling, and even performance arts, thus enabling innovative artistic expressions beyond traditional artistic barriers. AI's penetration into creative education creates new learning opportunities through personalized approaches and enables collaborative teamwork and innovation. The fast adoption of AI into educational systems produces complex questions regarding creativity's fundamental nature, which is about conventional copyright and originality concepts, originality definitions, and creative work methods.

Educators and students, together with institutions, must evaluate essential principles about teaching and learning because AI has entered creative disciplines. AI accelerates creative processes through automation and analysis, but it threatens to eliminate the emotional elements and cultural understandings which is the pillarhuman artistic expression. The ethical and legal, as well as social implications of AI in creative education remain deep because they include data privacy concerns and intellectual property rights questions, along with equity of access issues and potential standardization of artistic expression. The present situation requires thorough strategies that unite AI literacy with critical thinking, ethical examination, and collaborative approaches across multiple disciplines.

Obviously, AI technologies have diverse effects on creative industries within higher education. This paper investigates how AI transforms educational approaches and curriculum development and student participation and addresses the operational and ethical issues that emerge during this transition.

The rapid pace of artificial intelligence (AI) transformation is reshaping the Creative Industries in numerous ways, and studies in this field, particularly in higher education, are at the forefront of this change. Creative disciplines like design, music, digital media, and even performances are more and more shaped by different AI tools. These tools are not only supportive in education, but they also shape the way the students think and learn. The rapid rise of AI requires a very intensive assessment in change, especially focusing on the ethical and practical challenges it creates. The implementation of AI technologies in creative education brings opportunities to personalize learning patterns while promoting interdisciplinary work and innovative artistic creation. On the other hand, it creates important issues regarding authorship, copyright issues, and original work preservation, along with high and firm standards.

AI usage in Creative industries studies cannot be prevented; however, its potential benefits, alongside strategies to eliminate negative effects, must be examined from various perspectives. It is obvious that the situation needs different approaches to reform areas such as the curriculum transformation, faculty professional development, student engagement, as well as ethical mindfulness and equitable learning methods to address the evolving creative environment of an AI-driven era.

The analytical power of artificial intelligence, together with its ability to perform complex tasks, also transforms creative learning practices. Traditional creative work required students to invest large amounts of time, effort, and resources for editing processes and pattern exploration, as well as multiple rounds of the design process. The improvement of AI technology in a very short period of time has enhanced workflow efficiency gradually through automated assistance systems for different requested skills that allow students and educators to dedicate time to advanced creative activities and experimental approaches (Luckin et al., 2016).

Another advantage provided by AI tools is that they can enable the delivery of customized educational experiences through learner profile analysis. Through AI-powered platforms, students can receive educational pathways that match their individual performance levels and learning preferences. The personalized learning approach creates stronger student involvement by recognizing individual

abilities and disabilities to enable more independent creative domain exploration (Batista, Mesquita, & Carnaz, 2024).

AI algorithms also have other contributions to creative works, like opening up new horizons for students by offering new color palettes or composition layout suggestions based on their past work, enabling them to explore creative spaces beyond traditional artistic practices. Through AI chatbots, students in creative writing can receive personalized prompts that help them break through writer's block while creating fresh original content (Wang et al., 2023). Through this dynamic approach, students can move from accepting information to jointly creating content with the system. However, all these new possibilities also create questions for many. Are these tools killing creativity? Will they decrease the skills and levels of the artists of the future?

Interdisciplinary Collaboration and Hybrid Creativity

AI functions as a facilitator for interdisciplinary work, which stands as a vital characteristic of modern creative industries. By means of AI tools, students who study in interdisciplinary fields, putting together computer science, design, music, and even philosophy, can integrate their technical capabilities with artistic perspectives to develop new creative products that meet current workplace requirements (Aithal & Maiya, 2023). The facilitated convergence of disciplines enables students to develop versatile capabilities because future professional environments demand multidisciplinary expertise.

Recently, one can observe that new artistic projects show the blending of traditional artistic methods with AI technologies in their development. Just as an example, students can create visual patterns through machine learning algorithms, which guide their production of physical sculptures, and combine AI-generated sounds with live performance elements. Within this context, nobody can deny the fact that the synergy between students and AI technology enables both expanded creative potential and a deeper examination of technology's artistic influence.

The integration of AI into creative works also brings other mandatory changes in different areas. Curriculum is one of them. Higher education institutions need to modify their creative curricula to achieve the most out of AI's capabilities. AI literacy stands as an essential core competency that should exist alongside the essential artistic skills in educational programs. Curriculum development should basically focus on technical training and expand to include critical evaluation of AI's general effects. Additionally, education programs must teach students to evaluate AI's creative effects on copyright, authorship, and cultural production through theoretical concepts (Anantrasirichai & Bull, 2022).

The process of ethical evaluation is equally important for educational purposes. Students need to study the problems that emerge from data privacy violations, together with the biased nature of AI systems and the social impacts of automated creative labor. The integration of ethical instruction into AI educational programs trains students to become ethical professionals who comprehend technology's social impact (Ruiz-Rojas et al., 2024).

Regarding the creative industries, educational courses should analyze how generative algorithms impact artistic originality, together with the artist's position in the creative process. Students can develop their abilities to question the validity of original content and copyright ownership only by having a good understanding of AI tools, their limitations, and ethical barriers. This can only be done by a multidimensional AI education at every level of the education system.

School curricula also need to develop methods that properly handle the relationship between AI automated processes and human creative work. The technical accomplishments of AI fail to capture human artistry because they cannot replicate emotional depth, cultural context, and intuitive understanding that characterize human creativity. However, considering the fast improvement of AI technologies, this issue seems to be solved in the near future. The ideal is expressed by some academics, even though it does not seem completely realistic. For them, the educational approach should teach students that AI tools support human creativity instead of replacing it by showing them AI functions as an assistant in their creative work (Al-Zahrani & Alasmari, 2024).

The implementation of AI in creative education also faces risks and numerous difficulties that affect ethics, pedagogy, and society. The main concern exists about AI creating uniformity in creative expressions. The learning mechanism of AI systems depends on datasets and patterns, which creates a risk of producing dominant styles and restricting artistic diversity (Lee, 2022). A restricted diversity of creative voices, together with reduced cultural nuances, may result from such practices.

The excessive use of AI tools threatens to diminish important human abilities like critical thinking, together with emotional involvement and manual skill development. The educational establishment needs to actively protect these essential capabilities to guarantee technology functions as a creative enhancement. The integration of AI into creative industries education has the potential to deepen the existing inequalities between students. The availability of advanced AI tools primarily depends on school budgets and individual technological proficiency, thus excluding many students with disadvantages (Vecchiarini & Somia, 2023). The current educational system needs intentional intervention to prevent AI from intensifying existing inequalities between students.

Educational institutions need to establish equitable AI access programs through tool availability for all students and digital skill training programs for underrepresented groups while incorporating digital competency into basic curricula. AI policy, together with practice, needs to prioritize equity as a fundamental principle.

The implementation of AI also creates ethical obstacles due to data handling practices, privacy concerns, and intellectual property and copyright issues. AI models that use copyrighted artworks to learn potentially violate creators' rights, which generates legal and ethical issues (Shkalenko & Fadeeva, 2022). The current intellectual property laws are facing challenges because AI-assisted work authorship remains unclear.

Educational institutions need to engage with these debates to create updated policies and curricula for the evolving AI landscape. Students need to learn about copyright law, together with data ethics and responsible AI practices, to build their professional readiness.

AI's influence also extends to assessment methodologies. Creative disciplines traditionally use expert evaluation methods to assess originality along with emotional strength and conceptual depth. AI system output quantification creates a danger of converting complex evaluation criteria into basic measurement systems (Amankwah-Amoah et al., 2024). A fundamental challenge in pedagogical practice exists in creating assessment frameworks that combine AI analysis methods while preserving complex evaluation aspects. Creative evaluation needs educators to maintain a proper combination of quantitative assessment tools with personal interpretation methods to protect assessment authenticity.

The assessment abilities lead us to a new topic, the development of the faculty members regarding the IA. The ability of faculty members to understand AI technologies remains essential for the successful implementation of these tools. Educational staff need both technical proficiency for AI tool management along with critical frameworks that help them understand the educational and ethical implications of these tools (Hutson et al., 2022). Educational institutions need to establish continuous training programs that develop reflective teaching abilities while fostering ethical competence.

The roles of educators require fundamental support from their institutions for changes in their functions. Although AI systems perform basic operations through automation, the human educator maintains their critical role in teaching creativity and guiding students through ethical questions and providing mentorship. The educational institution should motivate faculty members to use AI as a collaborative teaching tool instead of perceiving it as a threat to their work.

The integration of AI technology needs educational programs that unite various academic fields. Creative fields

integration with computer science, along with ethics and design, enables students to build essential skills together with analytical viewpoints (Trevisan et al., 2023). Educational curricula teach students to develop combination skills that match the requirements of modern creative industries.

Ideally, the curriculum should start with machine learning foundation classes together with ethical AI education and creative practice training before students work on projects that integrate these domains. This method prepares graduates to be adaptable, equipping them with the competencies essential for success within the AI-powered creative economy.

But this process to be successful needs Student engagement, which can benefit significantly from the implementation of AI technology. The adaptive learning systems enable students to get individualized feedback, which helps them to improve their skills properly (Batista, Mesquita, & Carnaz, 2024). Generative AI tools also allow students to test new ideas fast while solving their creative issues and developing their imagination (Wang et al., 2023).

Through this technology, students can work with AI systems and peers from different fields to create innovative work that mirrors the collaborative settings found in AI-based learning environments.

AI tools must be accessible to all students to prevent the expansion of educational disparities (Vecchiarini & Somia, 2023). DIGICRIMINATION Institutions need to invest in infrastructure as well as provide training and build inclusive cultures to make sure all students can benefit from AI-enhanced education. Equity strategies can include loaner devices, subsidized software access, and workshops focused on digital skills for underserved populations. Core educational programs should teach students digital skills to build fundamental competencies for everyone.

AI's ability to grow stronger requires people to keep their human creative nature safe. Creativity contains emotional intelligence as well as cultural context and personal expression, which machines are unable to replicate (Lee, 2022).

Educational programs should merge AI implementation with the development of human qualities that make humans special. Educational institutions need to maintain a continuous exchange between educators and students and industry professionals to develop new teaching methods that unite artistic intuition with technological proficiency.

Conclusion

Higher education in creative disciplines faces both major advantages and major obstacles because of the adoption of artificial intelligence technology. AI technologies bring transformative advantages through their capability to personalize education while supporting interdisciplinary teamwork and speeding up creative work, while expanding artistic potential. Students gain deeper creative engagement through adaptive feedback systems, generative tools, and AI-assisted collaboration, which leads them to successful careers in the modern creative economy that depends on AI. The integration creates major challenges, which include threats to human creativity alongside issues of unequal technological access, ethical data handling, and modifications to authorship and originality concepts.

Within the new ecosystem where AI plays a key role, Higher education institutions must lead AI system development through intentional guidance because these systems will penetrate deeper into creative activities. Multilateral teaching methods that combine technological progress with ethical principles and humanistic values will protect the unique elements of human creativity, including emotional depth, cultural context, and personal expression. Maintaining this balance becomes crucial because it enables both authentic artistic voice development and the creation of a creative environment that promotes equity, social responsibility, and inclusivity.

The resolution of legal and ethical challenges regarding AI-generated creative works requires proactive solutions. Educational institutions need to teach students about intellectual property rights, data ethics, and the social implications of AI so they can manage the changing creative environment successfully. Faculty development alongside interdisciplinary curriculum innovation serves as an essential factor because it enables educators to properly incorporate AI into their teaching practices while guiding students through AI's complex benefits and obstacles.

Higher education must adapt its approach to AI by treating it as both a creative tool and an academic subject of analysis for creative education to thrive in the AI era. Universities that combine AI education with ethical considerations and promote team-based learning and equal access will create students who possess both artistic abilities and innovative mindsets and digital ethics awareness. Higher education institutions should adopt this integrative method to develop artists who will use AI for creative expansion while maintaining human artistic elements. Higher education institutions need to establish an environment that unites human and technological advancement to create an inclusive and ethically grounded creative future for the evolving creative industries.

Higher education has new creative opportunities with AI; on the other hand, these opportunities come with big challenges. Students will succeed in the AI-based creative economy through educational institutions that implement AI literacy education, promote interdisciplinary learning, and resolve ethical issues while helping faculty members grow in their expertise.

Human creativity must be preserved in the context of technological progress by means of thoughtful thinking and flexible strategies. Higher education needs to support innovative approaches that enhance artistic expression without harming authenticity and emotional depth or social responsibility. The next generation of creative professionals can benefit from AI through well-designed approaches that build a positive environment.

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Ways of Seeing: A Philosophical Enquiry into the *Gaze*

Maria Pesli

Abstract:

This article explores the multifaceted nature of the *gaze* as a philosophical concept, tracing its inquiries from a historical and epistemological framework to a phenomenological understanding of embodied perception. By first acknowledging the *visual turn* in modern culture, the paper establishes the contemporary dominance of the image as a context for this inquiry. It then reflects over Michel Foucault's interpretation of Diego Velázquez's *Las Meninas*, the Spanish painter's most famous artwork, arguing that the painting's complex interplay of gazes serves as a tool for an archaeological inquiry into the rules of a specific historical *episteme*. Finally, the article turns to Maurice Merleau-Ponty's philosophy of perception, which shifts the focus from the *gaze* as a historical artifact to an active, embodied, and paradoxical act that fundamentally connects our bodies with the world, generating multiple layers of meaning.

Key Words:

Gaze; Foucault; Merleau-Ponty; Phenomenology; Embodied Experience; Perception; Visual Culture, Painting; Las Meninas

Introduction

While reflection on the visual is ancient, it became a central field of inquiry in the 20th century as images and visual communication began to dominate the arts, sciences, and social life. The visual turn brought a cultural shift that fundamentally altered our relationship with reality. This article will explore the philosophical significance of the gaze, arguing that it is not a monolithic concept but a complex, dynamic force shaping our understanding of the world, by tracing its inquiry through two seminal philosophical perspectives: First, Foucault's analysis of the gaze as a tool for a specific historical episteme and a harbinger of the modern age through its self-reflexivity and the destabilization of the viewer's position. Second, and more extensively, on Merleau-Ponty's exploration of the gaze as an embodied experience, this article will explore the dialectical relationship between the gaze and the real, and the visible and the invisible. It develops in three parts:

The visual turn: Reflecting on the rise of modern visual culture and the power of images, touching upon the historical causes behind it (positivism, modernity).

The gaze as episteme - Las Meninas: Analyzing the classic work of Velázquez's art through Foucault's lens, using the painting to represent a major historical shift in how we understand knowledge and the gaze.

The gaze as embodied experience: Reflecting on Merleau-Ponty's ideas, the focus is shifted from a historical perspective to a more experiential, phenomenological approach[1].

[1] The term phenomenology is found in philosophy since the 18th century in texts by Lambert, Herder, Kant, Fichte, Hegel and later in Brentano, Husserl 's teacher. Initially, Husserl will use it as equivalent to 'descriptive psychology'. Appears later in his work Logical Investigations as a logic for approaching mathematical logical concepts. Due to a harsh criticism of Frege for confusing logic with psychology, he turned to the study of a method and a philosophy that is not influenced by empirical data. In his work Ideen (ideas), he introduces the term phenomenology as a philosophy that deals with the examination of the facts of experience, that is, representations, judgments, emotions, starting a new tradition of philosophy in the 20th century, of which he is considered the founder. Several philosophers, however, who were influenced and followed the principles of phenomenology, separated their thinking from that of Husserl and developed their own version of phenomenology . Philosophers of the 20th century who dealt with phenomenology were Heidegger, Merleau - Ponty, Sartre, Gadamer, Levinas, Derrida, Dreyfus more recently and several others. Moran, D. (2007) Introduction to Phenomenology. London: Routledge , pp. 6-15, Pelegrinis (2005, pp. 615-616 and 1321-1323), Theodoridis (2000, pp. 259-261), Athens and Benier , Z. M. (2001) History of Modern and Contemporary Philosophy. Translated by Papagiorgis, K. Athens: Kastaniotis, pp. 619-640

1. The visual turn: a contextual framework

Vilsem Flusser (2008) described the visual turn of the 20th century as one universe of technical images [2], which from photography and film to television [digital images and immersive environments], has replaced writing as the primary way of transmitting information and initiating a cultural revolution[3]. In the same spirit, Susan Sontag (1977) examined the visualization of everyday life, arguing that photography fundamentally altered our relationship with reality; the photographic lenses did not simply help our vision to examine objects that were previously impossible to distinguish, but changed the very meaning of it: it "cultivated the idea of seeing for the value of seeing alone."[4]. She pointed to a revealing quote from Émile Zola from the early years of photography, in 1901, after 15 years of his amateur involvement with photography: "You cannot claim to have really seen something if you have not previously photographed it." [5]. Similarly, Régis Debray's (1997) work on

[2] Flusser describes the ' universe of technical images' through the arts of photography, film and video , television screens and computers, distinguishing the differences between traditional images and technical images, considering that the latter arise from a more abstract level of consciousness, not of imagination like the former but of image synthesis. Their difference is historical, because imagination appears pre-alphabetical and image synthesis post-alphabetical and structural, because analog images concern things "out there" while digital images concern things within an algorithm. If in traditional images the four-dimensional world was compressed into the two-dimensional surfaces of traditional images, in technical images the dimensions are zeroed since they consist of point elements, that is, they are the result of densifications of computation. Thus, traditional images "are products of viewing objects" while the latter are products of computation, more like "concepts" Flusser , V. (2008) Towards the Universe of Technical Images, (ed) Kavvathas, D. Translated by Iliopoulos, G. Athens: Smilis

[3] Flusser calls this revolution technical and not ideological, explaining that all revolutions from the Stone Age onwards have been technical and in the process evolved into social ones with their corresponding values. Ibid. pp 86-87

[4] Sontag, S. (1977) On Photography. London: Penguin Books, p. 93

[5] Ibid. p. 87

mesology[6] signifies that the visible dominates, reigns supreme, in contrast to the previous dominance of "great invisibles" like God, History, or Logic. He thus characterizes the modern "videosphere" as a successor to the "graphosphere," the era of typography[7]. In his introduction to Visual Culture, Nicholas Mirzoeff (1999), explained that human experience became more visualized than ever, with our lives saturated by mediated images: "In the vortex of images, seeing means much more than knowing. It is not just part of everyday life, it is everyday life itself."[8].

How did the visual gain such power? There have been extensive discussions and an ongoing discourse over this topic in the arts and humanities for years[9]. A key concept is the pictorial turn, as coined by W. J. T. Mitchell (1994) [10], as opposed to the linguistic turn and iconophobia[11]. Mitchell argues that analyzing visual representations, signs, media, and everyday practices is essential, a prerequisite for understanding social performances and culture[12]. Flusser later expanded this further in the field of social inclusion vs exclusion. He argued that someone cannot truly refuse to turn on a television, to read a newspaper, not to want to capture a moment photographically, not to let their gaze be carried away by images. For the simple reason "the energy he would have to expend to resist the penetrating pressure of technical images would expel him from the social fabric" and the loneliness of the exclusion of "those few who escape from them" would be greater than that caused by the technical images[13].

However, this visual shift has a significant prehistory, often linked to the birth of modernism and positivism. As John Berger (1982) observes, Comte, at the end of the 19th century, will complete Cours de Philosophie Positive[14], a book that introduces the theory of positivism, the development and evolution of which goes hand in hand with the development of photographic and cinematic art (Robins, 1996). Comte himself embraced the camera as a tool for gaining knowledge, seeing it as a means to observe and process phenomena that human vision could not. He will write about that himself:

> *"Nothing should remain unknown to man except perhaps the knowledge of the origin of the stars! Since cameras have even recorded the formation of stars! And photographers now provide us on a monthly basis with so many facts that the Encyclopedists of the 18th century could not have dreamed of in their entire work"*[15] *(Robins, 1996: 153).*

Comte's phrase demonstrates how positivism embraced photography. As Robins explains, photography became a privileged tool for understanding the world's true nature. By capturing phenomena beyond human sight, it provided new, processable knowledge that allowed for greater control over nature and society. Thus, photography and its lenses became tools for exercising control and power [16].

In the same spirit, Mitchell [17] notes that the photographic process, like the scientific one, promises to transcend subjectivity and secure truth by following and serving the norms of the culture that gave rise to it: the industrialization of the world with the dominance of industrial capitalism. The era to which Mitchell refers belongs to modernity [18], which prefigured and laid the foundations of the postmodern era or late modernity, in the technological cultural regime [19] of which the concept of visual culture emerges. Visual Culture, though, as Margaret Dikovitskaya (2005)[20] informs us, considers images as fundamental for the (re)presentation of the (social) meaning in the world. According to Ioanna Tsivakou (2003, 2006), social meaning "is the cause and effect of social relations and social structures" and functions like culture does as a "set of symbols and meanings" [21] capable of "guiding individual interpretive systems on this basis" [22].

[6] The term mesology is the Greek translation of the French m é diologie, which Debray himself has explained as concerning "mediations and the technical environment, the specific interactions between technology and culture" Debray , R. (1997) The Science of Communication. Ideas of General Mesology. Translated by Ougourloglou, K. Athens: Nea Synorra -Livanis, p. 11

[7] Ibid. p. 519

[8] Mirzoeff, N. (1999) An Introduction to Visual Culture. London: Routledge

[9] Look at Vision and Visuality, Selected Essays edited by Hal Foster (1999), The New Press, New York, Preface, pp. ix-xi. Similar books that either critically examine visual culture or attempt to understand the conditions under which it emerged and what it signifies for social practices are the Picture Theory by Mitchel , W. J. T. (1994), Chicago: The University of Chicago Press, An Introduction to Visual Culture by Mirzoeff, N. (1999) Dikovitskaya, M. Visual Culture , The Study of the Visual After the Cultural Turn , The MIT Press , Massachusetts, by Flusser, V. (2008) Towards the Universe of Technical Images. Athens: Smilis and previously with a negative, one would say, critique of the dominance of the image and the spectacle, by Debord , G. (2000) The Society of the Spectacle. Athens: International Library.

[10] Mitchell in his book Picture Theory separates the English terms picture and image by saying that the picture corresponds more to the material substance of the image and its specific association with a space (frame, material) as a carrier that supports the image , which refers to the visual recording of a thing, to the imposed visual representation that belongs to a virtual space and contains everything virtual, that is, potentially recorded visually. Mitchel, WJT (1994) Picture Theory. Chicago: The University of Chicago Press, p. 4

[11] He refers to Rotry "To remove the visual and especially the metaphor of reflection from our speech", to the late Wittgenstein "The image captured us and we could not escape it because it had settled in our language and our language repeated itself towards us relentlessly" but also to Guy Debord on the society of the spectacle. Ibid. pp. 12-13

[12] With a dense description of the ideas and theorists who prepared and contributed to the 'pictorial turn', Mitchell mentions, among else, the semiotics of Chrales Peirce, Nelson Goodman's languages of art , Derrida 's grammatology which shifts the ' phonocentric model of language' towards the visual aspects of writing, the Frankfurt School with their critique of mass media and mass culture, and the interest of phenomenology in visual perception and the visible. Mitchell (1994) pp. 11-13

[13] Flusser (2008) p. 74

[14] This information is provided by Kevin Robins in his book Into the Image, noting that it comes from the book by John Berger and Jean More (1982) Another Way of Telling, London: Writers and Readers London (pp 99) Robins , K. (1996), Into the Image. London: Routlege p. 153

[15] Ibid . p. 153

[16] Ibid.

[17] Ibid . 154

[18] A clarification on the use of the terms modernity , modernism and modern in this article. The term modernity refers to the historical period associated with the industrial revolution. The term modernism refers to the art movements of the 20th century and the aesthetic, cultural and intellectual trends and practices. The term modern is identical to contemporary.

[19] Late n externality Postmodernity is considered the era that succeeds modernity. without being limited in time when it begins (a general idea is that the 60s are when the challenges of modernism begin and move on to challenges of modernity. The term was established by Lyotard and in broad terms characterizes a critical analysis and rejection of often values of modernity, such as grand narratives (large ideological, political, cultural, religious systems of thought on which social and political institutions and norms of behavior were founded and formed). However, there is no agreement of the various theoretical approaches to postmodernity and the postmodern. For an image of the dialogue that developed around postmodernity and the postmodern See chap. 5 in Hall, (2002) Held , McGrew pp . 325-399 For translations of the terms look at Cutcliffe, St Mitcham , C. Perspectives on Science, Technology, Society (ed.) Agrafiotis, D. Translated by Sierra, E. Athens: Greek Letters, pp. 19-20 Hall, St. Held, D. McGrew (2003), pp. 325-397

[20] Dikovitskaya 's book is particularly informative about what is happening at this time in the field of visual culture, while also functioning as a critical literature review. It also includes 17 interviews with academics while examining four curricula of four universities on the subject of visual culture. Dikovitskaya , M. (2005) Visual Culture:The Study of the Visual After the Cultural Turn. The MIT Press, Massachusetts

[21] Tsivakou , I. (2006) Offering and Reciprocation in Social Relations. Athens: Nefeli pp. 127-129

[22] Tsivakou , I. (2003) The Flexible Limits of Social Systems. Athens: Nefeli p. 53

2. The gaze as episteme: Foucault on Las Meninas

> *"The painter looks, with his face slightly turned and his head tilted to his shoulder. He is fixed on some invisible point, which we, the spectators, can easily determine, since this point is ourselves: our body, our face, our eyes... (We are looking at a picture in which the painter is, in turn, looking out at us)... However, this thin line of mutual visibility encompasses a whole complex network of uncertainties, exchanges, and evasions... No gaze remains fixed, or rather, on the neutral trajectory of the gaze that vertically penetrates the canvas, subject and object, spectator and model reverse their roles ad infinitum" (Foucault, 2008: 28-29)* [23]

While modern visual culture, shaped by photography and positivism, has made the power of the image explicit, a pivotal work of art from the Classical Age had already addressed the same profound questions about seeing, knowing, and the nature of representation. Diego Velázquez's enigmatic painting, Las Meninas, is one of the most discussed works in the history of art[24] (Figure 1) captures a complex interplay of gazes, positioning the viewer at the center of a philosophical puzzle about reality and its depiction. The painting commissioned for King Philip IV of Spain depicts a room, perhaps the palace, where King Philip IV and his wife, Mariana, pose as the model. However, their little 5-year-old daughter, Infanta Margaret Theresa, surrounded by her entourage, becomes the central figure of the gaze. The painter is placed on the left side, and the royal couple, whose reflection can be seen in a mirror placed in the background of the depicted space.

French philosopher Michel Foucault, in his book The Order of Things, through a monumental analysis of Las Meninas visual syntax, takes us on a small adventure of thought, raising questions about the ownership and importance of the gaze, the interdependent relationships between creator, work, and viewer, and the connection

[23] Foucault, M. (2008) The Order of Things: An Archaeology of the Human Sciences (Les Mots et les Choses: Une archéologie des sciences humaines). Athens: Gnosis, pp. 28-29 Foucault dedicates the first chapter of his book Words and Things to the analysis of Velázquez 's painting.

[24] Foucault uses the painting as a means to explore and define "episteme" of the Classical age, where episteme refers to an underlying system of thought that organizes knowledge during a particular historical period. Ibid . pp. 27-44 but also in Millner Kahr, Madlyn . Velazquez and Las The Art Bulletin , Vol . 57, No. 2, June 1975, p . 225-246 for a characteristic and detailed analysis of the painting with reference to older sources and scholars who dealt with the work such as Antonio Palomino in Book III of the Museum Pictorico , 1724 edition . Retrieved from http://www.jstor.org/pss/3049372

between representation and reality, observer and observed, perception and knowledge: What is the dominant subject of the painting? What is the space it represents and defines? Who are the depicted figures looking at, and what are the relationships and roles between them? How is the role of the viewer shaped in the reception and interpretation of the work, given that their position coincides with that of the supposed models? [25]

The paradox of the painting, according to Foucault, is that it perfectly represents a scene while simultaneously rendering the central subjects of that representation, the King and Queen, invisible. He notes that the viewer is placed in the position of them, the king and queen, who are the subjects being painted, but are only visible as a reflection in the mirror at the back of the room, while the painter, Velázquez, is looking at something outside the canvas. This makes the viewer both the subject and object of the painter's gaze, destabilizing the traditional relationship between the viewer and the object being viewed. Foucault calls this the empty space at the heart of the painting, the absence of the very thing it seeks to represent - the absence of the subject (the viewer, the painter, the king and queen) in the very act of representation[26].

Foucault's analysis is not an art-historical one; he is not concerned with the painting's subject matter, the artist's biography, or its historical context in the way an art historian or art theorist would be. He is an archaeologist of knowledge, and for him, the painting is a visual artifact that *embodies the episteme* of the Classical age. With episteme, he defines the underlying system of thought, or the order of things, that organizes knowledge and discourse during a specific historical period. However, he argues that there have been two major discontinuities[27] In Western thought: the transition from the Renaissance to the Classical Age (mid-17th century) and the transition from the Classical to the Modern Age (early 19th century)[28]. Ultimately, one would argue that Foucault uses *Las Meninas* as a metaphor of the shift in Western thought and an exploration of the Classical *episteme*, which is characterized by the dominance of representation and classification: knowledge is organized through tables, taxonomies, and a direct relationship between words and things to perfectly represent the world. And although the reasons that the painting embodies the Classical episteme's focus on pure representation and the transparency of knowledge, at the same time, there is an epistemological shift in a different order, pointing to the birth of the modern age, as many scholars will assume in the 20th century[29]. Thus, *Las Meninas* through the complex interplay of gazes, the painting depicts, represents, representation itself, a painting about painting.

[25] Foucault, M. (2008) The Order of Things: An Archaeology of the Human Sciences (Les Mots et les Choses: Une archéologie des sciences humaines), Translated by Papagiorgis, K. Athens: Gnosis pp. 28-32

[26] Ibid.

[27] Foucault's argument for "discontinuities" in Western thought is a radical departure from traditional historical methods. Instead of seeing the past as a continuous narrative of accumulation and evolution, smooth and linear, he argues that there are radical breaks or "ruptures" where the very foundation of knowledge and what can be thought or said undergoes a complete transformation. For example, the concept of "Man" it didn't exist in the Renaissance or the Classical Age in the same way as it is in the Moderna Era; it is a recent notion a rather historical construct, a temporary product of a specific epistemic configuration. Ibid.

[28] Ibid. In various chapters

[29] Vuksanović, V. (2024) 'Foucault's Analysis and Interdisciplinary Perspective on Velázquez's Painting Las Meninas In: AM Journal, 35 pp. 13–26.

3. The *gaze as embodied experience:* Merleau-Ponty's phenomenology

Building on Foucault's analysis of the *gaze* in *Las Meninas* as a reflection of Western epistemology and a precursor to modernity, this section shifts from the historical discourse of visual representation to the lived experience of perception itself. It is a transition from the cultural and philosophical framing of the visible to a deeper exploration of how the human body, the consciousness, and the world are fundamentally intertwined through the act of seeing. Merleau-Ponty's phenomenology of visual perception and the direct experience of consciousness in interaction with the world sets the visible world not as a separate object but as intimately connected to how we see it and experience it as embodied beings.

> *"Vision is not a certain way of thinking, nor is self-presence: it is the means that allows me to be absent from myself, to be present, from the means, in the disintegration of Being, at the end of which alone I close myself in on myself." (Merleau-Ponty, 1991: 107)*

Merleau - Ponty, coming from the tradition of phenomenology, early on turned the attention of his philosophical thought to the problem of *perception*, to the data of the direct experience of consciousness, and the new meanings that this brings to the relationship of man with the world [30]. *Consciousness* and the external world are inextricably linked. The nature of *consciousness* is perceptual and consequently physical, since every function of consciousness is realized in perception, which functions as a meeting place of the *embodied subject* with the world [31]. The body is not a simple organ, but rather the realization of the spirit, since through the body, external space is constantly experienced, feeding the consciousness with stimuli for action, thus contributing to the continuous birth of the subject. Conversely, the stimuli that consciousness receives, it returns, through the *embodied subject*, to the environment, marking it with meaning.

From the first book he wrote on the phenomenology of perception in 1945[32], Merleau-Ponty established an axis of reflection around the energy of perception and the necessity of the philosophical foundation of the visible[33]. His sudden death in 1961 left his work incomplete and many gaps in the understanding of his developing ideas.

[30] Merleau-Ponty, M. (1991) p. 107

[31] Pelegrinis (2005) p. 1004

[32] The writing of the book of the same name, which is considered his masterpiece, Phenomenology of Perception (1945) marked Merleau-Ponty 's turn towards the concept of visual perception and the visible, as well as the need to investigate the perceptual process in relation to the mind and the body. It was preceded by the Preface to the Phenomenology of Perception, which is considered by many to be an autonomous work. Moran (2007); The Cambridge Companion to Merleau-Ponty (ed) Carman, T. and Hansen, M. Cambridge: Cambridge University Press

[33] His work on art and perception can be found in several key texts. He first explored these themes in "The Cézanne's Doubt", an essay on Cézanne's painting and vision. He continued this inquiry in The Eye and the Spirit (1960), and broadened his focus to include arts, cinema, and the senses in Sense and Non-Sense (1964). Finally, in his posthumously published, unfinished notes, The Visible and the Invisible, he introduced new terms like chiasm and flesh to discuss the relationship between the visible, the subject, and the body. Banakou -Karagouni , with references to M. Saison , states that the philosopher, especially with his last essay, The Eye and the Spirit, aimed at a "correction" of his first two books and a transition from the Phenomenology of perception to an ontology founded on visibility. Banakou -Karagouni N.-X. (2002) Dimensions of the Visible – The Philosophy of Art in the Work of M. Merleau – Ponty Athens pp. 315-316

From his dense and important work, we will see only some fundamental concepts that relate to the visual: perception, consciousness and being, vision, visible and invisible, gaze and embodiment through the art of painting. His influences, especially in the philosophy of art, are still very strong today.

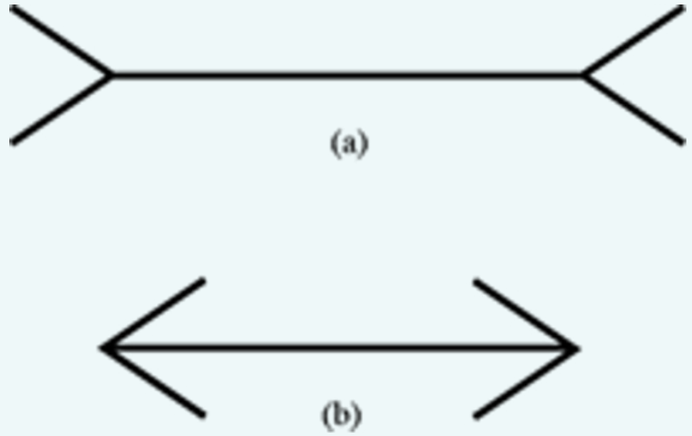
A. Visual perception and the body-world connection

> *"Perception is not a science of the world; it is not even an action, a deliberate assumption of a position; it is the depth upon which all actions are manifested and is taken as a condition for them. The world is not an object of which I possess the final composition; it is the natural setting and field for all my thoughts and my explicit perceptions" (Merleau – Ponty, 1979)*

For Merleau - Ponty, *perception* is not a derivative of our mind, but the field of pairing of the body with the world. To perceive things, we must experience them[34]. He argues that our relationship with the world is not primarily an intellectual or rational one, but an embodied one. We understand the world through our bodies, and our bodies are not mere instruments but our way of being in the world. Influenced by Gestalt theory, which states that the simplest form of visual sensibility we can perceive is a figure on a background[35]He will introduce the idea of *perceiving* a thing always in relation to something else. There cannot be a perceived phenomenon otherwise. A homogeneous surface without its connection to something else is not an *object of perception*. Nor is any other element detached and isolated from the environment. When we see images of optical illusions, such as that of Müller-Lyer (Fig.2), we cannot really ask ourselves whether the lines are equal or unequal.

34 Banakou -Karagounis N.-C. (2002) p. 78

35 His influences are evident in his three books: Phenomenology of Perception , Sense and Non - Sense, The Visible and the Invisble. He makes extensive references to Gestalt psychology but also interprets the concept of Gestalt through the phenomenology of perception, as transcendence, opening as immanent space'.



This question would apply to the objective world, not to the perceived. As Lyotard suggets, we must understand that for a perceiving subject, a line in an optical illusion is indeed unequal, and the illusion exists only within a third reference system, such as that of the designer[36]. Since the *"environment of behavior"* (Umwelt)[37], according to Koffka, "constitutes the real universe, because it has truly been experienced as real". In the words of Merleau - Ponty: "The world is what we perceive"[38]. However, we are not the bearers of meaning in the world. Meaning is not a pre-existing concept but is realized at the moment of the perceptual process, in the union of the body with the world. Any distortions in an object's appearance due to viewing conditions do not affect our perception of its entirety, and the same applies to the meaning it manifests[39].

[36] Lyotard (1985) p . 46

[37] Lyotard quotes him Ibid . at 47

[38] Merleau - Ponty (1945) p. xvi

[39] Merleau - Ponty (1964) p. x

This discussion relates to consciousness and being, potentially forming the following axioms:

I. During the perceptual process, we grasp the entirety of an object from the outset, even if we do not have a complete image of it.

II. What we perceive of an object is not the only valid perception of it, nor is it the final one. We are offered different perspectives each time, and thus the perceptual process remains incomplete.

III. I *perceive* is not identical with the cogito. Our access to the object provides us with *"its corporeal reality"*.

IV. Cogito is founded on *percipio* because *perception* fuels thought.

Merleau - Ponty acknowledges that this view of *perception* may appear paradoxical, since it reinforces the fact that the perception of reality is subjective and at the same time claims the certainty that only through it we can perceive what is truly real [40]. Perhaps this is why he later characterized *perception as a paradoxical act*, while noting that "natural perception is not science, it does not posit the things to which it refers, it does not remove them in order to observe them, it lives with them, it is the 'opinion' or the 'primitive faith' that connects us to the world as to our homeland" Merleau - Ponty (1964).

Consequently, the perception we acquire of the world through consciousness can never be complete, as things remain "open sets" that are only revealed to us partially and from a specific perspective[41]. Merleau-Ponty's interest focuses precisely on these ambiguous connections. By investigating the perceptual process, he reexamines the dialectical relations that develop between the perceived and the perceived, the sensed and the sentient, the spirit and the body, and the subject and the object.

B. The chiasm in painting

Merleau-Ponty's interest in perception led him to study painting as a way of understanding the world. From his earliest writings on art, it is clear he sought to connect his philosophical reflections on perception with painting, which he defined as the "art of the *Visible*." There, he will define the *Visible* as the field of practice of art and painting as the art of the Visible, while he will highlight the body as a carrier of meaning. He will say of painting that it "glorifies no other enigma than the enigma of visibility"[42] by giving "visible existence to what a common, profane vision believes to be invisible" [43]. He believed the gaze in a painting is what captures the primary, pre-categorical, "natural" image of the world. He reminds us that "the meaning of what the artist is about to say is not found anywhere, neither in things, which do not yet constitute meaning, nor in him, in his unexpressed life".

Meaning is not pre-existent but emerges in the moment of creation. He refers to Koffka to emphasize that the stability of forms and sizes in perception is due to an "existential function" that exists before logical thought and the activity of consciousness. This "pre-categorical" level of existence takes place within the boundaries of the body. He asks, "How could [the eye] ever take anything into account?" to then answer that the body can do this through its capacity as the *phenomenal body*, which serves as the vehicle of perception and knowledge until conscious thought is formed.

Later, he introduces the concept of chiasm as a characteristic of the flesh. The chiasm or the *intertwining (le chiasme)* is a term he borrows from biology to describe the crossing-over of nerve fibres. In his philosophy, it refers to the deep, reversible connection between the seer and the seen, the body that touches and the body that is touched as both felt and feeling. Merleau-Ponty will exclude the latent dualistic principle of the phenomenal body and consciousness, arguing that they are like two dimensions of the subject that take place simultaneously, an element of our dual nature as well as of the world[44]. This apparent contradiction highlights the role of the body as a vehicle for unifying the subject with the world, which, in the case of the painter and the act of painting, resonates with the phrase "externalization of the internalized exteriority." [45] and with "the inside of the outside and the outside of the inside" [46]. That is, the painter captures the interior of a view of the world through its external form, to internalize it and, by visualizing it, externalizes it again.

In the act of painting, the embodied gaze sees itself and is seen at the same time. The painter's body manifests an action, through the whole body, or part of it, such as his hand, which will be able to paint himself possibly. And then enjoys the result of his action through the mutual exchanges and the successive *reversibilities or chiasmata*. The viewer is not a passive observer but is intertwined with the painting. The gazes cross over and reverse, creating a dynamic relationship where the subject (the viewer) becomes the object (the subject of the painting) and vice-versa.

In *Las Meninas*, Foucault points to an empty space at the heart of the representation, the *absence of the subject* in the act of being represented. Merleau-Ponty would interpret this *empty space* not as a lack, but as the invisible that makes the visible possible. The visible figures in the painting—the painter, the Infanta, the mirror—are given their meaning by the invisible presence of the viewer, the king and queen, who are simultaneously present and absent. The viewer of *Las Meninas* understands the painting not as a set of logical propositions, but through the lived experience of their body. The viewer's own body and position are the invisible foundation for the visible scene. Their gaze is not a detached, disembodied act, but a part of their bodily presence that is drawn into the painting's space. The uncertainties, exchanges, and evasions of the *gaze* are not failures of perception, but the very essence of embodied perception in action. The paradox reoccurs: our subjective perception is tied to our own body and perspective - and yet, it's the only way we have to connect with what is truly real and objective in the world.

The painting, in this sense, is not just a picture, but an aesthetic experience that engages the viewer's entire being, manifesting a deeper, invisible connection. The painter and the viewer are part of the same *flesh* of the world, a concept Merleau-Ponty uses to describe the primordial, pre-conscious unity of the perceiver and the perceived. The *invisible* is not something supernatural or a separate realm of ideas, but the depth, the absence, and the potentiality that gives the visible its meaning. The associations and couplings that take place in the manifestation of the circularity between interior - exterior, subject - object, spirit-body, viewer – viewed, painter – spectator, break the coherence of Cartesian dualism and replace its polarizing, disruptive structure with a new ontology of interconnections of experience.

[40] Same as above .

[41] This view is supported, by Arnheim , a theorist of Gestalt Psychology: due to retinal physiology, the eye can only distinguish one point, a specific area, to focus. It cannot simultaneously focus on other points in the visual world. Arnheim, R. (2007), pp. 48-49

[42] Merleau-Ponty , M. (1991) p. 72

[43] Ibid. p. 73

[44] With the term chiasma, Merleau-Ponty defines the reversibilities , the changes and regressions of the actions that take place in the acting body: visible - visible , sensible - felt, internal - external, subject - object. The term chiasma comes from the Greek letter, the shape of which functions symbolically to indicate intersections. Ora Merleau - Ponty (1968) pp. 130-155, Baldwin (2001) pp. 247-248 Banakou - Karagouni states that in chiasm, as in "rhetoric, the connected terms are four: the body as seen and touched , the body as visible and tangible, the world as containing the body, the world as appearing and penetrating it through the senses" (2002: 225)

[45] Banakou -Karagounis N.-C. (2002) p. 266

[46] Merleau-Ponty, M. (1991) p. 70

Conclusions

This philosophical inquiry into the gaze has demonstrated that its power extends beyond the simple act of seeing, revealing it as a central concept in the modern understanding of reality. The *visual turn* demonstrated how the dominance of images in contemporary life is deeply rooted in historical shifts toward positivism and the rise of a visual culture where seeing became a form of knowing.

Foucault's analysis of Las Meninas served as a contextual bridge, offering not a traditional art-historical critique but an archaeological inquiry into the rules of a specific historical episteme. By dissecting the painting's complex interplay of gazes, Foucault reveals how the gaze functions as a tool for classification and representation, a means of social and intellectual control, while simultaneously exposing the paradox of representation itself—the empty space at the heart of the work.

Merleau-Ponty's phenomenological approach offered a distinct yet complementary lens, shifting from Foucault's historical framework to an embodied one. His theory of visual perception - visual thinking and the chiasm shows that the gaze is a foundational, creative, paradoxical act that actively shapes our consciousness. Through the body, the perceived and the perceiving are inextricably linked in a primal union, forging a new ontology where the visible and the invisible are intertwined, giving rise to meaning and existence.

Together, these two distinct perspectives reveal the full complexity of the gaze and the potential formations - perceptions it can acquire, not as a rigid concept but as a dynamic force. Foucault shows us how it functions as a means of social and intellectual control, while Merleau-Ponty illustrates its foundational role in our very being. It is in the interplay between these historical and lived dimensions that the gaze emerges not only as a way of understanding the world, but as an inseparable part of our existence within it.

Nonetheless, the insights of Foucault and Merleau-Ponty extend beyond the confines of historical analysis and painting. As we move further into an era of AI-generated images, virtual realities, and immersive environments, the questions raised by their work become more urgent. How does the gaze function when it is not directed at a canvas, but at a simulated world? What happens to the chiasm when the body is immersed in an environment that is not a part of the flesh of the world, but a construct of code? The philosophical paradoxes of (visual)perception, representation, and beingness that they explored are now being reconfigured by technology, challenging us to reconsider what it means to see, to know, and to be in a world where an algorithm endlessly intertwines the visible and the invisible.

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The Key Role of the Metaverse in Literature Education

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Abstract:

With the growing role of the Metaverse in all areas of human life, literature has not remained unaffected and is making use of it as a powerful tool for instruction. This article examines the integration of immersive technologies—virtual reality (VR), augmented reality (AR), and mixed reality (MR), into Literature teaching, arguing that the Metaverse's function is more essential than a new technology. Rather, by placing students within narrative worlds, it enables deeper engagement with literary texts. The discussion benefits from constructivism, embodied cognition, multimodal learning, and Louise Rosenblatt's transactional theory of reading, while also engaging Martha Nussbaum's view of literature as moral imagination. Case studies such as the Virtual Globe Theatre, Dante's Inferno in VR, and Litcraft show how immersive environments can strengthen spatial awareness, empathy, and interpretive skills. Potential challenges—including issues of access, cognitive load, oversimplification, and ethical concerns—are critically evaluated. Finally, recommendations highlight the significance of accessibility, blended pedagogy, lecturer strength, and scalability. When employed judiciously, the Metaverse can influence literary pedagogy in a way by expanding the ways learners read, interpret, and inhabit texts, offering a new outlook for literature education in the digital age.

Key Words:

Metaverse – Literature – Digital Technologies - VR, AR, and MR – LitCraft - Virtual Globe Theatre

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1. Introduction

It cannot be ignored that education, like other aspects of life, has been influenced by digital technologies. As Selwyn claims, not only Learning management systems, online assessments, and e-books have become widespread, but also AI tutors and adaptive learning platforms are increasingly influencing instruction across disciplines (Selwyn, 2021). The speed of influence of Metaverse on Literature, like other branches of Humanities, was not as fast as it was over other branches of sciences and technologies. i.e., literary pedagogy has largely remained within traditional text-centered frameworks (Jackson, 2020). This disconnect becomes more pronounced as students spend more time outside the classroom in digital environments. Today's learners are "digital natives" (Prensky, 2001) since social media, virtual worlds, and gamified platforms are inseparable part of their lives. It is a valuable reason to consider that this generation is less motivated by the traditional approaches to teaching literature since they may seem boring and difficult to be understood.

The emergence of the Metaverse, a persistent, shared, and interactive network of 3D environments, can offer a response to this gap. First introduced in Neal Stephenson's novel Snow Crash (1992), the Metaverse has gradually become an umbrella term for interconnected virtual spaces accessed through avatars. Educational researchers have increasingly examined its value in strengthening active, experiential, and embodied learning (Lee, Pradhan & Dalgarno, 2021; Radianti et al., 2020). For literature education, the implications are especially striking: what if students could, while reading Oliver Twist, walk the fog-shrouded streets of Victorian London or move through the allegorical circles of Dante's Inferno?

This article argues that the Metaverse is not merely a technological trend but a powerful pedagogical tool that can improve literature education. When the students feel themselves in the plot of the literary pieces, they will touch all aspects of them by themselves and reach to the best level of understanding, empathy, and critical engagement. To build this argument, the paper first reviews theoretical foundations relevant to immersive pedagogy and then examines practical applications through case studies.

2. Theoretical Background and Literature Review

By the Metaverse, various technologies can find manifestation in the digital world. This ecosystem encompasses VR, AR, and MR and is often facilitated through platforms such as Mozilla Hubs, ENGAGE, and FrameVR. Unlike earlier forms of online learning, the Metaverse supports embodied "presence" and live collaboration, making it suitable for disciplines that rely on context, affect, and imagination (Di Natale et al., 2024). Constructivism, formulated by Piaget (1973) and extended by Vygotsky (1978), holds that knowledge is constructed through active interaction with the environment and with others. In Vygotsky's definition of the 'zone of proximal development,' the importance of social collaboration, which is something immersive environments naturally provide. In literature classes, the Metaverse enables students to co-explore narrative spaces, role-play characters, and collectively interpret symbolic elements—activities aligned with social-constructivist learning. But, according to the arguments of the Embodied cognition theory, there is more than mere thinking that is a strictly cognitive process, though it also has its basis in bodily experience (Wilson, 2002). Exploring the windswept moors of Wuthering Heights, or walking through the underworld of Homer is an experience that involves more senses and motor movements and might increase insight and memory. The multimodal learning models (Fadel and Lemke, 2008) also reveal that learning is more efficient when it is presented in divergent visual, sound and touch than when presented solely in the form of a text.

Louise Rosenblatt's transactional theory of reading (1994) emphasizes that meaning arises in the reciprocal action between reader and text. The Metaverse builds on this 'transacting' by placing the readers in simulated environments in which they can complement textual interpretation via spatial, emotional, and collaborative experience. To illustrate, when one reads Macbeth in an attempt to recreate the Globe Theatre virtually, a literary and performative exchange occurs at the same time. In her view, literature is the tool of developing empathy and moral awareness (Martha Nussbaum 1997). Through temporarily existing in fictional worlds, the readers engage in moral imagination and challenge other views than those they hold. This process may be enhanced by immersion: having to assume the role of a pilgrim of Dante and meet allegorical characters of sin, the students may become more engaged with theological and ethical issues, and make abstract concepts more concrete. Even though the studies of teaching literature in the Metaverse are under development, a number of projects show its potential. The Virtual Globe Theatre allows students to be immersed in Shakespearean drama by its historical representations in 3D space. Inferno VR allows Dante to go through allegorical landscapes and talk about symbolism and theology. Litcraft, constructed by using Minecraft, involves learners in the process of collaborative building of narrative spaces, such as in Lord of the Flies (Bushell et al., 2022). It has been indicated that these environments make people feel more motivated, bring them closer together, and enhance their interpretive capabilities (Radianti et al., 2020; Ferdousi et al., 2023).

Irrespective of such capabilities, immersive technologies are not risk-averse. Marie-Laure Ryan (2015) cautions about overusing visual representation that may decrease interpretive ambiguity in literature and reduce texts to one dimensional tales. There is also educational equity: VR devices and high-speed internet access are not evenly distributed and can widen the gap (AlAli and Wardat, 2024). These considerations lead to careful pedagogically informed integration.

3. Applications in Literary Education

Literature has never been independent of the imagination that a reader is able to build the world of the text. The Metaverse enhances this ability and brings the experience of narrative spaces to collaborative and concrete. An example is to investigate Dickens in VR, his Coketown, industrial noises, smoke, and massive buildings, which heighten his criticism of the Industrial Revolution process. According to research, such multisensory scaffolds are capable of decreasing the cognitive load and increasing interpretive activity (Ferdousi et al., 2023). The Globe, in a project called the Virtual Globe, was created through the assistance of Shakespeare scholars and replicated the Globe in digital format. Students are able to view Hamlet or Macbeth in different vantage points and even act as actors themselves, comparing how the audiences reacted. It has been demonstrated that these experiences enhance the knowledge of spatial dynamics and performance conventions, particularly among the students who are not used to theatre (Di Natale et al., 2024).

The Inferno VR by Dante allows the learners to experience the nine levels of Hell. By means of narration and passages of the text, students are introduced to allegorical figures and theological implications. This exploration is empathetic and morally inclined and much in line with the results in presence-based learning (Slater and Wilbur, 1997). Litcraft is a platform created using Minecraft in which students can create literary worlds together, like the island of Lord of the Flies. Through the creation of space and role-playing, learners consider spatial symbolism, power relationships, and social collapse (Bushell et al., 2022). The project, though not a complete VR, is an example of how gamification can overlap with interpretive analysis. Other upcoming projects are VR versions of The Canterbury Tales which recreates medieval pilgrimage routes and Pride and Prejudice VR which recreates the social spaces of the Regency era. These instances demonstrate how immersive techniques can expand repertoires of taught works and bring about a connection to cultural history.

4. Pedagogical Benefits and Opportunities

The students change from passive to active and challenge-loving ones through immersive platforms. This aligns with Kolb's experiential learning cycle, which emphasizes concrete experience, reflection, and application (Kolb, 1984). For example, wandering through a haunted palace in VR Gothic modules can turn abstract concepts—such as atmosphere and suspense—into palpable experience (Freina & Ott, 2015). By seating learners within narrative worlds, the Metaverse deepens understanding and empathy. Exploring the London of Oliver Twist renders social deprivation tangible and reinforces Dickens's critique. Such immersion coheres with Nussbaum's (1997) conception of literature as training for moral imagination.

Empirical findings indicate that VR-based learning increases motivation, attention, and knowledge retention (Radianti et al., 2020). Game-like elements, such as quests, avatars, and unlockable experiences, engage students accustomed to interactive media and transform reading into an exploratory journey. Multimodal design improves accessibility for diverse learners; including those with dyslexia or ADHD, because visual, auditory, and kinesthetic inputs provide multiple pathways into the text (Fadel & Lemke, 2008). In this way, immersive environments support inclusive pedagogy. Immersive platforms enable synchronous collaboration in shared spaces and align with Vygotsky's (1978) social constructivism. Students can discuss character motivations while co-exploring or create collective narrative extensions, turning the literature classroom into an interactive 'interpretive community.'

5. Challenges and Limitations

Immersive technologies mostly need many facilities, such as expensive VR headsets and stable internet, which are not equally available to all institutions. Without inclusive strategies, the Metaverse may exacerbate inequities (AlAli & Wardat, 2024). Lag, bugs, and VR sickness can disrupt learning (Behr et al., 2020). Additionally, the complexity of simultaneously managing avatars, sensory inputs, and narrative interpretation may lead to excessive cognitive load (Vaughn, 2021). One of the major concerns regarding applying literature into visual forms is the risk of flattening metaphorical ambiguity. VR adaptations may privilege image over polysemy and reduce opportunities for multiple readings (Ryan, 2015).

Many instructors trained in traditional frameworks may not feel comfortable or secure with immersive pedagogy. A lack of training and institutional support hinders adoption (Al Musawi et al., 2025). To have a successful integration, technopedagogical competence and professional development are needed. As VR platforms may collect biometric data; obviously, another issue in relation to immersive technologies is the concern about privacy (Kaimara et al., 2022). Highly emotional simulations can also cause discomfort for some learners, making protective measures necessary.

6. Recommendations and Future Outlook

Having clear learning objectives will be a thoughtful idea for the designation of immersive activities to stimulate critical interpretation rather than passive consumption. For instance, exploring West Egg in The Great Gatsby should lead to an analysis of social inequality rather than mere aesthetic appreciation (Zunić et al., 2025). To support the educational goals, different platforms such as Mozilla Hubs and FrameVR should be prioritized. Partnerships between schools and digital humanities should be accessible to all students. Also, the students' budget must be considered. Partnerships between schools and digital humanities labs can increase scalability (Fitz et al., 2023). On the

other hand, when fully trained lecturers take the teaching responsibility, it assists in the professional development of integrating immersive tools. Co-design with teachers ensures educational relevance and improves adoption (Stavroulia, Baka & Lanitis, 2025). The combination of the traditional teaching methodology with immersive environments is absolutely required to create the desirable educational environment. Blended models that combine close reading, class discussion, and reflective writing alongside immersive exploration yield the strongest outcomes (Lavoie et al., 2024).

However, there are still many concerns, such as unequal access, technical barriers, the risk of oversimplification, and ethical concerns. Lecturer training and thoughtful design are therefore necessary to ensure that immersive tools complement, rather than replace, textual analysis. Through the deployment of these technologies, literature education will change from a purely text-bound activity into an embodied, participatory, and interdisciplinary exploration. Students will not only read about other worlds but, for a time, live in them—thereby expanding both their interpretive skills and imaginative horizons.

7. Conclusion

Integrating the Metaverse into literature education represents a bold rethinking of instructional practice. By placing students within narrative worlds, immersive platforms open new dimensions of understanding, empathy, and engagement. Grounded in constructivism, embodied cognition, multimodal learning, and moral imagination, this approach can enrich literary study while fostering creativity and collaboration.

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From West to East – Cultural Identity in Design and Typography

Nicole Pfeiffer

Abstract:
This article addresses the teaching and transmission of design, highlighting how deeply entrenched Western design thinking remains both in practice and academia. It calls for a critical examination of these dominant Western structures: Are they truly universal and the ultimate standard? Why are other cultural design traditions often forgotten or only perceived as marginal? This dominance is particularly evident in writing and typography. The article critiques the overwhelming influence of Western design, especially in an international context. At an international university like BSBI, there is a unique opportunity to reflect on this dominance, promote cultural diversity in design education, and contribute to the decolonization of Western design perspectives.

Introduction

After studying at two German and one Swiss university, and working for many years as a graphic designer and illustrator in the business sector, I now teach at the international BSBI Faculty of Creative Industries in Hamburg, specializing in Graphic Design. Our students come from all over the world, and I have travelled a lot – especially to discover art and design in other countries, to be inspired by local artists, their history, and cultures.

The task of a lecturer is also to draw up other teaching documents. Despite the rich diversity of cultures and design histories, the curriculum at most European and Western universities and universities of applied sciences remains largely the same, with only a few exceptions. Certain Western or Eurocentric design principles, such as the "Bauhaus", are often presented as universally valid and quickly accepted as standard.

It was only in my role as a lecturer at this international university, within a multicultural environment, that I truly became aware of the multifaceted nature of design and its rich history.

Design and aesthetics are closely linked, but what is perceived as "good design" or "beautiful" is by no means universal. Rather, it is the result of individual perceptions and cultural contexts. The central question is: To what extent does our cultural identity influence design decisions – from colour selection to typography? Why do we still cling so much to the Western concept of design in design teaching and practice?

Do all people feel beauty in the same way? Biology and culture in interaction

Why we experience the perception of beauty is a topic that touches us all: in a split second, we judge whether someone is attractive or whether a landscape appeals to us. Yet, understanding why we perceive something as beautiful is a complex question without a simple answer. An interdisciplinary lecture series at Friedrich Schiller University Jena explores this very subject by bringing together insights from neurobiology, mineralogy, and art. (Bernhard, 2014)

Dirk von Petersdorf, a Germanist and poet, who conceived the lecture series "Beauty", emphasizes that we use the term "beauty" every day, but only a few can explain exactly why they perceive something as beautiful. Beauty encompasses a wide field – from nature and art to people, technical objects, and mathematical formulas. This raises the fundamental question: Are there common basic structures that determine what we perceive as beautiful?

In a series of lectures, neurobiologist Christoph Redies explains that beauty is not an either/or but is anchored both in the objects and in our perception. Our biological perception of vision, the result of evolution, influences which stimuli we prefer to perceive. Natural images often have fractal self-similar structures that our brain processes particularly efficiently. Artists create works that reflect these characteristics, which is why we experience aesthetically pleasing images as such. Beauty shows up as a balance of medium complexity and high self-similarity, which also stimulates the reward system. (Designwizard, 2019)

Art historian Karl Schawelka emphasizes that the relationship between art and beauty is complex. The idea that art must be beautiful is, in his view, a relatively modern and particularly Western concept, which emerged during Classicism in the 18th century. In many cultures and periods, art has always been much more than just beautiful—it includes the cruel, the sublime, and the terrifying, which we encounter in museums, films, or artworks.

Schawelka highlights the distinction between original and copy: In the realm of art, originals are highly valued, while copies are seen as less significant.

However, when it comes to beauty, the difference is less important—a beautiful copy remains beautiful. According to current neuroscience, beauty is not simply subjective but is biologically programmed and tends to be reasonable and functional. Nevertheless, these biological programs do not always fit with modern life: What was once evolutionarily useful, such as a preference for sugar or certain beauty ideals, is not always beneficial or healthy today. Ultimately, beauty is a flexible but not entirely variable concept, constantly being reinterpreted. (Bernhard, 2014)

Mineralogist Birgit Kreher-Hartmann also shows that aesthetic perfection means vulnerability: perfectly formed crystals are often more sensitive and easier to destroy than irregular shapes. So, beauty can also express fragility.

In conclusion, Christoph Redies emphasizes that understanding the biological basis of beauty does not diminish its emotional effect, comparable to love. Beauty remains a fundamental human experience that cannot be fully explained or eliminated. (Bernhard, 2014)

Aesthetic Sensibility in Design Theory

"Design can be art, design can be aesthetics. Design is so simple, that's why it's so complicated." – Paul Rand, Graphic Designer

(Designwizard, 2019)

In a globalised world, we encounter design everywhere – on packaging, advertising materials, digital interfaces, and in public spaces. However, the visual appearance is often based on a Eurocentric design paradigm. This is characterized by the "International Typographic Style", (Wikipedia, [International Typographic Style]), also known as the "Swiss Style", which emerged between 1930 and 1950 and is oriented towards movements such as Russian "Constructivism", "De Stijl", and, above all, the "Bauhaus". The Bauhaus, founded in 1919, produced a functionalist, clear design language with geometric shapes and sans serif fonts – such as Herbert Bayer's Universal. From the 1950s onwards, the "Swiss style" established itself with grid layout, objectivity, and the font "Helvetica" (1957 by Max Miedinger). This design language still influences many design areas today – from print media to UX/UI. Although such standards still shape practice, contemporary design trends increasingly demand more cultural diversity and emotional depth.

In many design courses and practices, this canon dominates, while alternative cultural forms of design are often faded out or exoticized. (Khandwala, 2019) This dominant Western view contributes to the marginalization of other cultures – a form of "design colonialism." From my own experience and in the exchange with students from a wide variety of backgrounds at an international university, I have noticed how little this cultural diversity is visible in teaching. To think and communicate design globally, we need to consider cultural, historical, and political contexts. Writing is never neutral; It is always also the bearer of identity and history.

> *"When Western conventions are centred in design, this means that anything else is seen as 'different.'" Simba Ncube, a design student and researcher at Central Saint Martins in London, shares his experience of being labelled as a 'Black Designer'.*
>
> *(Khandwala, 2019)*

Western Design Colonialism

Colonialism means very different things to people and evokes very different feelings. For example, an indigenous person from North America feels addressed differently than someone from the Netherlands. Basically, colonialism refers to the conquest, control, and exploitation of foreign countries and territories by a colonial power, which usually uses the people, raw materials, and economies of the colonized regions for its own advantage.

However, colonialism is not limited to territorial rule; ways of thinking, ideas of design, aesthetics, and notions of beauty have also been profoundly influenced, and many have been suppressed. Germany, which was not a classical colonial power, also has a history of aesthetic control, for example, through the devaluation of so-called degenerate art under the Nazi dictatorship. Questions of power, control, and beauty are still present in design today. The history of design is closely intertwined with the history of colonialism. With the industrial revolution in the middle of the 19th century, a practice of design also emerged in Germany that influenced the reality of work on site, the use, and perception of the products. (TRANSFORMAZINE, 2023)

Anoushka Khandwala, author, artist, and lecturer at Central Saint Martins, who challenges colonial ways of seeing at the Royal College of Art in London, explains in her article "What Does It Mean to Decolonize Design?" on the "Eye on Design" editorial platform, collaborated with AIGA:

> *"Decolonization is a term you hear more and more at design events – often mistakenly equated with 'diversity'. Diversity expands those who participate in the design process, while decolonization questions and changes ways of thinking." - Anoushka Khandwala*
>
> *(Khandwala, 2019)*

She emphasizes that Western design history and aesthetics are historically shaped by colonial power, which often devalues contributions from non-Western cultures as nothing more than "craft." Western standards, such as the linear perspective, are also not universal truths, but culturally determined. True decolonization, therefore, requires expanding and diversifying design understandings. In short, decolonization means rethinking design – beyond Western hegemony and towards an inclusive, diverse, and equitable practice.

In order to better understand these complex relationships, author Anoushka Khandwala spoke to four designers from different cultural backgrounds as part of her research, who shed light on different facets of decolonization in design: Neebinnaukzhik Southall (indigenous designer from Santa Fe, New Mexico), Ramon Tejada (Dominican Republic/Providence, Rhode Island), Miguel Navarro Sanint (Bogotá, Colombia) and Amy Suo Wu (Rotterdam, Netherlands).

To the question "What does decolonization mean to you in the context of design?", Southall, who works as an indigenous designer, answered very clearly: It is about finally giving indigenous voices and perspectives more space – for her, design is only a small part of a much larger process that is about cultural self-determination.

Tejada sees the whole thing as quite complex. He comes from the Dominican Republic, a country with a complex colonial history. For him, decolonizing sometimes means consciously taking space for oneself – but also making room for others. He thinks that one should not only teach the usual Western design history but rather include different traditions and points of view. So, it's not just about design itself, but about discovering new perspectives together and broadening your perspective.

Wu looks above all at design education in Holland and criticizes the fact that there is still far too often work according to the scheme "Western is better" or "rational beats emotional". She thinks it's time to mend these old rifts – and to revalue craftsmanship, which was often considered second-class. For her, "repairing" is a strong image: dissolving boundaries, overcoming differences, and making diversity visible.

Sanint from Colombia notices that in many rural regions, it is extremely difficult to say what is still original and what is already colonial. Often, almost all design products from the West or China come to them. Colonialism is also reflected today in the fact that other standards and products dominate everything. (Khandwala, 2020)

In the context of design, decolonization means fundamentally questioning common routines and familiar ways of thinking. Design researcher Danah Abdulla (Khandwala, 2019) emphasizes that today's design usually does not contribute to breaking up existing social structures or changing the status quo. She points out that capitalism in particular acts as an instrument of colonial power, which makes complete decolonization in the Western context seem almost impossible. The aim of decolonial approaches is therefore to imagine a design that goes far beyond the existing and thinks of new alternatives.

In concrete terms, decolonial work begins in a very practical way with daily design practice: designers should consistently reflect on who they are designing for – and think about how their designs are perceived by people of different origins and identities. A central part of decolonization is to leave one's own perspectives and to develop sensitivity for how other social groups or cultures experience and understand design.

Instead of seeing design merely as a tool for universal solutions, designers should actively break with the familiar, develop empathy for other perspectives, and thus contribute to more diversity and social change.

The Eurocentric or Western-influenced Design Style in Typography

In countries such as India, China, Russia, and the Arab states, there are independent and rich traditions of writing and design. However, on the international

stage, Western typography and design principles – particularly the Latin alphabet – are often regarded as a professional and aesthetic benchmark. As a result, regional lettering systems often become less visible in global branding, corporate design, or multinational advertising and are sometimes reduced to decorative trivialities. This trend is particularly documented in India by the work of typographer Raghunath Krishna Joshi, who advocated for the digital and design recognition of Indian scripts. (Letterform Archive, 2023)

However, there are more positive examples: large companies, institutions, and cities are increasingly incorporating local scripts into their design strategies. For example, the State Bank of India's branding uses Devanagari and Latin fonts equally, and international airports like Dubai have multilingual signage that respects all fonts equally. (Dubai Airports, n.d.)

Design initiatives such as Google's "Noto Fonts Project"(Google, n.d.) illustrate how contemporary, cross-platform font design can support the equal visibility of non-Latin fonts in global communication systems. The "Google Noto Fonts Project" is an extensive open-source font initiative that aims to cover every written language in the world in the same design aesthetic, both living and dead. It includes over 800 languages and 100 scripts – from common alphabets such as Latin, Cyrillic, and Hebrew to historical scripts such as Egyptian hieroglyphics and Cherokee. (ItsNiceThat, 2016)

The project is exemplary and should become the standard, as many countries are multilingual and use both Latin and local writing systems – such as English and Devanagari in India. Nevertheless, a Western-influenced typography style often dominates visual communication, which shows structural inequality and carries colonial power relations into the design as well. (McKinsey Germany, 2023)

An essential example of the commitment against the dominance of Western typography is the Indian typographer Raghunath Krishna Joshi. While names such as Max Miedinger, the creator of Helvetica, are widely known, Joshi, who reinterpreted Indian typography, remains largely in the background. (Letterform Archive, 2023) Through his lifelong involvement with Indian writing systems – including the development of important Unicode fonts for Microsoft Windows – he has made a decisive contribution to making Indian writing cultures digitally visible and usable. (Letterform Archive, 2023)

The question arises as to why typographic systems outside of the Latin alphabet are often seen as less "professional" and how typographic diversity can be promoted to make cultural diversity more visible in global design. International universities have great potential to raise awareness and promote innovative design approaches through intercultural teaching. (McKinsey Germany, 2023)

How can the Visibility of Regional Written Cultures Enrich Cultural Dialogue?

The origin and culture are reflected in the visual design of the typeface in many ways. Fonts and writing systems are cultural forms of expression whose forms, structures, and reading directions are closely linked to the historical, social, and aesthetic traditions of their respective cultures. For example, the reading direction (from left to right, right to left, or from top to bottom) determines the design and layout of typographic works. Latin alphabets differ significantly from non-Latin writing systems such as Chinese, Arabic, or Indian scripts.

Writing is more than just communication; it is a bearer of cultural memory and an important symbol of belonging. Thus, Chinese writing, like Arabic, has not only a functional, but also a poetic and calligraphic dimension, elevating writing to an art form and deeply rooted in cultural tradition.

The cultural scientist Jan Assmann emphasizes that writing forms the foundation of cultural memory. It enables communities to preserve knowledge, norms, and values and pass them on over generations. Thus, the visual design of writing systems conveys not only language but also cultural identity and belonging. (Assmann, 2018)

"Cultural memory opens up spaces of memory that are many thousands of years old, and it is writing that plays a decisive role in this." -Jan Assmann (Assmann, 2018)

In his article "Typotopias! for Civil Society", the experienced designer and specialist author Klaus-Peter Staudinger shows how type design and typography can make a significant contribution to the development of a diverse and inclusive visual identity within civil society. Staudinger emphasises that a pluralistic civil society must be made typographically visible in all its diversity to promote culture and social dialogue.

He sees writing as a powerful medium that creates publicity and transports cultural heritage. Modern technologies and intercultural design approaches, in particular, offer opportunities to represent diversity aesthetically and support social transformations. At the same time, Staudinger warns against the uncritical use of historical symbols and calls for responsible reflection on typographic design. To promote these goals, he proposes the establishment of "Typographers For Future" – an initiative that combines design competence with social engagement, thus making the design of relevant topics more accessible and strengthening the dialogue between creatives and citizens.

What does contemporary design teaching look like?

"Typography is the craft of endowing human language with a durable visual form, and thus with an independent existence." – Robert Bringhurst, Canadian Type designer and Poet (Bringhurst, 1992)

Contemporary and culturally diverse design teaching can make a significant contribution to overcoming design colonialism and promoting a plural design culture

By integrating diverse regional writing systems and typographic cultures, different cultural identities are given a visible voice. This not only strengthens the self-image of the respective communities but also opens a cultural dialogue that breaks down prejudices and promotes mutual understanding. When students and designers encounter multilingual typography and different forms of visual expression, they encounter not only aesthetic diversity but also alternative ways of thinking and communicating. This openness is fundamental to establishing respect and empathy in dealing with cultural differences.

Additionally, intercultural projects and the deliberate combination of Western typography with Arabic, Indian, or East Asian typography foster innovation. Such hybrid forms show that creative productivity often arises from the exchange of different aesthetic and conceptual traditions. At the same time, the critical reflection of dominant Western design standards makes it possible to question their supposed universality and to shed more light on the underlying power relations in global design.

The social dimensions of typography are also an important aspect: When people find their writing systems in public and digital spaces, they experience belonging and recognition – a strong sign of inclusion, especially for marginalized groups. Cultural diversity in design thus creates everyday spaces for exchange, dialogue, and joint learning across the boundaries of language and culture.

Overall, such decolonial design teaching not only promotes the perception of diverse design traditions but also makes cultural identities visible and transforms design practice into a platform for respect, justice and shared innovation.

Examples from Architecture, Product Design, Typography, and Fashion

Examples from architecture, product design, typography, and fashion show how cultural identity is shaped in a lively and innovative way today.

A particularly impressive example is provided by the Burkinabe architect Francis Kéré. He uses sustainably available, local materials such as clay and bamboo, thus combining traditional craftsmanship with contemporary architecture. This creates buildings that are both ecologically sensible and reflect cultural heritage. Kéré's work demonstrates how architecture can serve as a medium of cultural expression while also providing sustainable solutions. He relies on sustainable, locally sourced materials such as clay and bamboo, thus fusing tradition with innovation. (Wikipedia, n.d. [Diébédo Francis Kéré])

Lebanese Dutch designer Tarek Atrissi masterfully blends Arabic and Latin scripts in his work, which has had a decisive influence on graphic design in the Middle East and has earned him internationally renowned awards. (Tarek Atrissi Design Studio, n.d.)

The "GT Devanagari typeface", developed by Shiva Nallaperumal and Hitesh Malaviya, is a successful example of postcolonial typography. It combines traditional features of the Devanagari font with the modern hybrid style of the GT America font family. Special emphasis was placed on respecting the historical and cultural significance of the Devanagari typeface, while at the same time creating a typeface that meets the requirements of modern applications in advertising, brand communication, and digital media. The result is a versatile, legible, and aesthetically balanced typeface that makes cultural identity visible in a contemporary way and bridges the gap between tradition and innovation. (Team THC, 2024)

Another example is provided by the American designer Herb Lubalin, who mixed local font traditions and global design trends with his playful typography, thus creating an exciting combination of regional and international styles. (Grapheine, 2022)

Product design reflects cultural specificity and sustainability by responding to local needs and connecting design philosophies. The Indian "Mitticool refrigerator" is an example of innovation tailored to rural needs: it is affordable, locally repairable, and environmentally sustainable, serving as a practical alternative to expensive, imported products.

The Japanese brand "Muji" embodies a minimalist design philosophy that combines Japanese Zen principles with Western Bauhaus simplicity, creating universally appealing yet culturally rooted products

In the same way, cultural identity is impressively evident in fashion today, where traditional textiles and patterns are combined with Western tailoring. Young designers from Nigeria, South Korea, and Lebanon make their cultural heritage visible and tangible in an innovative way. The Nigerian fashion label "Orange Culture" goes beyond pure clothing and stands for a social movement that appeals to a new, creative generation – characterized by emotional openness, curiosity about culture, and individuality. (Orange Culture, n.d.)

The Japanese designer "Issey Miyake" also masterfully combines traditional techniques such as pleats and kimono constructions with futuristic materials and Western silhouettes. This is how unique, cross-cultural fashion statements are created. (Wikipedia, 2025 [Issey Miyake])

Strengthening cultural diversity in design education and practice

International universities offer a unique opportunity to bring together students from different cultural backgrounds and enable them to bring their backgrounds, creative traditions, and different perspectives to the field of design. To leverage this potential, design education should actively promote intercultural projects that deal with different writing systems and design styles. Incorporating intercultural handwriting development into curricula and encouraging students to explore hybrid forms of writing can help to make cultural identities visible through design.

In addition, it is crucial to critically question Western design colonialism and the dominance of global design standards. Designers and educators, therefore, have a responsibility to break through these hegemonies and actively promote cultural diversity. Non-Western design traditions must not be dismissed as "other" or inferior craftsmanship or misunderstood as the mere inclusion of inferior design.

Design reflects history, values, and identity. To make design truly global and representative of our diverse world, we need to consciously strengthen cultural diversity and make marginalized voices heard. Only through ongoing critical reflection can true equality in design perspectives be realized.

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Students' Views on New Learning Methods in Creative Industries: A Case Study

Hesam Mosharraf, Ph.D.[1]

Abstract:

This paper examines creative students' perceptions of traditional and innovative teaching approaches in higher education. With rapid digital advancements such as artificial intelligence (AI) and immersive virtual tools, the boundaries of creative pedagogy are being redefined. A quantitative survey of 31 students from Graphic Design, Animation, Visual Communication, and UX programs at the Faculty of Creative Industries of a private school in Germany, combined with a review of relevant literature, explores the perceived value of hands-on, digital, and AI-assisted learning methods. Findings indicate a strong preference for traditional, in-person learning in creative fields, alongside cautious optimism regarding digital and AI tools as supplementary resources. The study contributes to ongoing debates on hybrid learning models in creative education and offers recommendations for educators and institutions.

Key Words:

Creativity, Education, Pedagogy, AI, Learning

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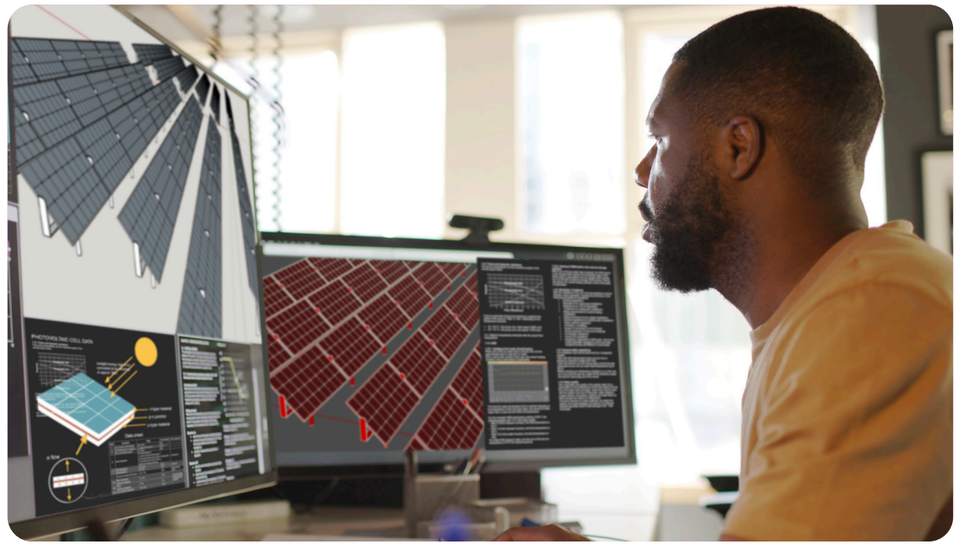

Introduction

The field of education is undergoing rapid transformation driven by advances in digital technologies, AI, and immersive virtual environments. These innovations challenge traditional pedagogical practices, particularly within creative disciplines that have historically emphasised hands-on material engagement and collaborative critique. Despite the widespread adoption of digital and AI tools, there is a lack of understanding about how students in creative industries perceive these changes and how they impact their learning experiences.

This study addresses the critical problem of understanding student perspectives on the evolving balance between traditional and innovative learning methods in creative education. Specifically, it seeks to answer: How do students value hands-on, face-to-face learning versus digital and AI-enhanced approaches? Are emerging technologies perceived as effective substitutes or supplements to conventional studio-based pedagogy?

The objectives are to explore the perceived importance of physical materials, studio environments, and in-person critique; assess attitudes toward digital replication of creative experiences, the metaverse, and AI feedback.

Background

Traditional learning in creative fields has always emphasized hands-on experience. Materials have been a crucial part of education in studios and design schools; the texture, color, and physicality of materials contribute to understanding and can even influence the design process itself. Famous design schools have long incorporated diverse media such as paint, clay, and textiles into their curricula.

Gradually, with the advent of computers, education shifted toward digital tools, reducing the emphasis on hands-on assignments. Today, AI and virtual environments, including the metaverse, have further transformed learning, sometimes eliminating the need for physical space or peer interaction. However, it is essential to consider what students think about these changes and whether they see them as beneficial.

In creative education, learning is not solely based on lectures. Interaction among students, exposure to each other's work, and engagement with various forms of art and creativity are essential for developing new ideas—either consciously or subconsciously. These aspects of collaborative learning remain vital, even as technology transforms the educational landscape.

The rapid evolution of digital technologies, particularly artificial intelligence (AI) and immersive tools such as chatbots, is reshaping educational paradigms and prompting a re-evaluation of traditional pedagogical approaches to support more personalised and interactive learning experiences (Baltà-Salvador et al., 2025). Within higher education, this shift is particularly evident in efforts to integrate AI and metaverse-based technologies into curricula to enhance student engagement, creativity, and collaboration, thereby modernising educational environments (Almeman et al., 2025; Ruiz-Rojas, Salvador-Ullauri and Acosta-Vargas, 2024).

Emergence of the Metaverse in Education

The concept of the metaverse originated in Neal Stephenson's 1992 novel Snow Crash, where characters adopted avatars to interact in a three-dimensional (3D) virtual environment beyond physical reality. The term combines "meta", meaning transcendence, and "universe", referring to the world or cosmos (Kye et al., 2021). In contemporary usage, the metaverse denotes an interconnected, immersive, and interactive virtual realm blending digital and physical experiences, facilitating

social interaction, learning, and economic activities across multiple sectors (Pyae et al., 2023).

In education, metaverse applications have gained traction as a means of delivering interactive, collaborative, and experiential learning environments that move beyond conventional two-dimensional teaching methods, particularly during and after the COVID-19 pandemic (Almeman et al., 2025). These environments are perceived by students as improving social interaction and collaborative learning, thereby strengthening the social sustainability of higher education institutions (Alkhwaldi, 2024; Villamil and King, 2024).

AI and Immersive Technologies in Educational Practices

At the forefront of this transformation is the integration of AI-driven systems with metaverse platforms to personalise learning experiences. Such systems adapt to individual learning styles and paces while fostering critical thinking and collaborative competencies (Almeman et al., 2025; Ruiz-Rojas, Salvador-Ullauri and Acosta-Vargas, 2024).

The integration of AI and the metaverse into educational frameworks also alters the dynamics of social interactions, shifting from conventional face-to-face exchanges to hybrid or fully virtual collaborative spaces (Almeman et al., 2025). The emotional dimension plays a crucial role: Chang (2025) highlights that students' academic engagement and creativity in AI-based metaverse environments are strongly influenced by their emotional responses. Yıldız (2024) underscores the broader implications of AI and metaverse applications for the future of digital education, arguing that these advanced methodologies not only facilitate social interaction but also provide experiential learning platforms advantageous to students in creative industries. Similarly, Sidhu et al. (2024) demonstrate the positive impact of metaverse learning environments on engineering mechanics education.

Pedagogical Foundations for Virtual Learning

The integration of AI, AR/VR, and metaverse technologies aligns with established learning theories. Behaviourist approaches emphasise feedback and self-assessment, cognitivist perspectives focus on knowledge transfer, and constructivist models stress learners' engagement and active participation. Interactivity in instructional design has been shown to improve motivation, attentiveness, and participation among students (Chen, Siau and Nah, 2010). In virtual world learning environments, perceived learning outcomes and satisfaction can match those of face-to-face classrooms when interactive instructional strategies are employed (Chen, Siau and Nah, 2010).

Implementation Challenges and Future Directions

Despite its promise, implementing metaverse technology in university teaching presents challenges. Wang (2025) identifies barriers to adoption that complicate the transition from traditional to modern methodologies, while Waquar et al. (2025) highlight the necessity of an adaptive mindset among educators to maximise the benefits of these technologies and sustain collaborative learning environments.

Beyond pedagogical benefits, these technologies can support entrepreneurial and interdisciplinary competencies. Prabowo, Utama, and Rahmatillah (2025) emphasise the importance of integrating knowledge of AI, AR/VR, and the metaverse into higher education curricula to enhance students' business ideation and facilitate interdisciplinary collaboration.

Face-to-Face Education and Hands-On Experience

Research consistently highlights the value of face-to-face instruction for student engagement and understanding. Photopoulos et al. (2023) collected quantitative and qualitative data from 336 students across all years of study and found that learners preferred in-person teaching, reporting higher engagement, learning, and comprehension during classroom sessions. Senior students, who had already built peer relationships before the pandemic, maintained interactions more easily online, whereas first-year students reported frustration at the difficulty of forming relationships remotely.

Similarly, Öncü, Çolakoğlu and Colak (2024), in a study of a computer science course, suggest that while face-to-face interaction may be associated with enhanced engagement, it does not necessarily translate into higher academic performance. This may indicate that students put more effort into achieving the same outcomes in face-to-face instruction. These findings suggest that while in-person teaching offers clear social and cognitive benefits, online learning may provide flexible alternatives depending on context.

Hands-on facilities such as makerspaces demonstrate measurable benefits for creativity, problem-solving, and "learning-by-making". Systematic reviews and empirical studies indicate that makerspace activities increase idea generation, technical fluency, and cross-disciplinary collaboration — outcomes directly relevant to creative industries (Soomro et al., 2023).

The Bauhaus (1919–1933) exemplifies successful hands-on, face-to-face creative education through its workshop-based apprenticeship model. Students learned under dual instruction from masters (artists) and craft masters (artisans), directly manipulating materials in specialised workshops for ceramics, textiles, metal, glass, and other crafts (Getty Research Institute, 2019). Physical learning environments themselves can shape social interaction and interdisciplinary awareness. Well-designed spatial and architectural settings foster collaboration and community among students (Mosharraf, 2025).

Methodology

A quantitative survey was designed using Google Forms. The survey included multiple-choice questions covering students' perceptions of hands-on learning, digital tools, AI, and face-to-face versus online instruction. The survey was short to encourage full participation and ensure data reliability.

Thirty-one students from the Faculty of Creative Industries participated in the study. The participants were enrolled in Graphic Design, Animation, Visual Communication, and UX programs. They represented approximately 22% of the faculty (31 of 140 students), which is sufficient for exploratory analysis but not generalizable to the entire population.

The survey was distributed via email and internal discussions. Students were assured that their responses would remain confidential.

Responses were analyzed using descriptive statistics. Percentages and frequencies were calculated for each survey item, and data were visualized using charts to highlight trends. Observed patterns were interpreted in relation to existing literature on creative education, hands-on learning, and digital pedagogy.

Limitations:

- The sample size is relatively small, limiting generalizability.
- The survey relied on predefined response options, so nuanced perspectives may not be captured.
- Results are specific to one faculty and may not reflect experiences in other disciplines or institutions.

Results

Hands-on Interaction: A strong majority (over 80%) consider hands-on interaction with physical materials (e.g., pen and paper, paint, clay, wood) as "Very Important" or "Extremely Important" for learning. Only a small minority view it as slightly or not important at all (Figure 1).

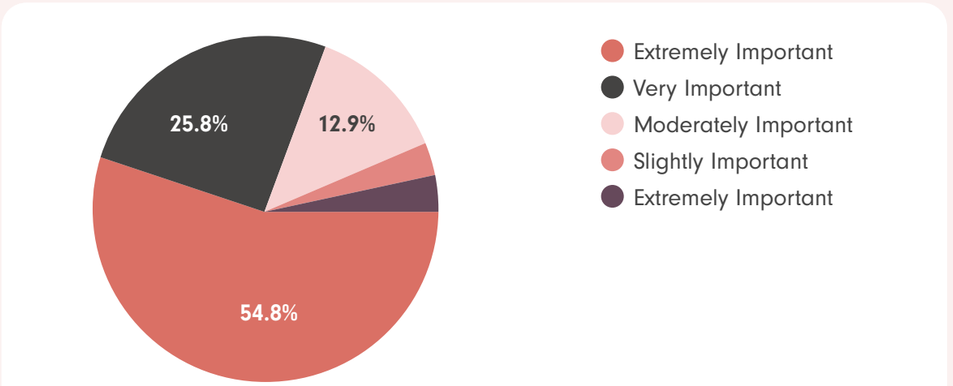

Figure 1 Importance of hands-on interaction with physical materials

Physical Studio Environment: Most respondents (over 96%) agree or strongly agree that learning in a physical studio or classroom environment enhances their educational experience.

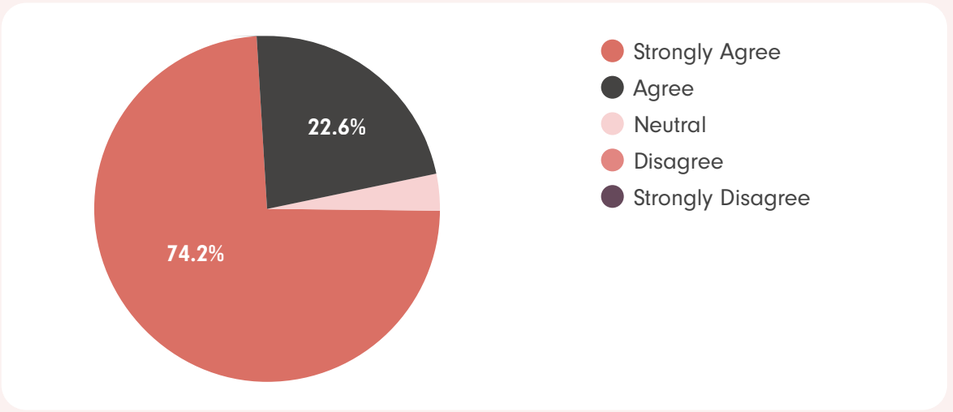

Figure 2 Value of physical studio or classroom environments

Face-to-Face Critique: The importance of face-to-face interaction and discussion for effective critique is high, with over 93% rating it as “Absolutely Crucial” or “Very Crucial.”

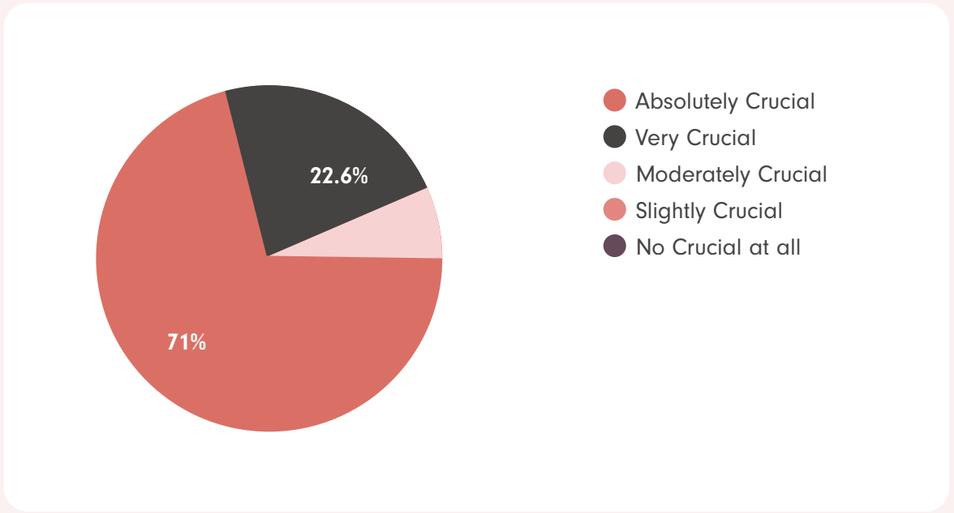

Figure 3 Importance of face-to-face critique and discussion

Digital Tools Replication: Opinions are more mixed here. About 45% believe advanced digital tools can replicate visiting art or architectural sites “to some extent,” while others are more skeptical, with roughly 26% saying “to a limited extent” and only about 29% seeing greater replication potential (Figure 4).

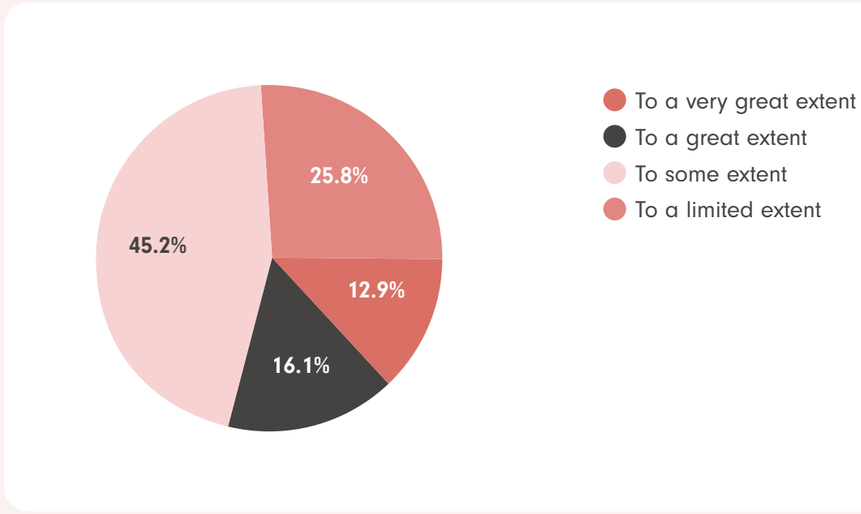

Figure 4 Digital tools replicating real-world experiences

AI Feedback Effectiveness: Students are skeptical about AI providing meaningful and empathetic feedback; over 80% rate AI’s effectiveness as neutral or negative (neutral 32%, very ineffective 29%, ineffective 19%), while only about 20% feel AI tools are effective or very effective (Figure 5).

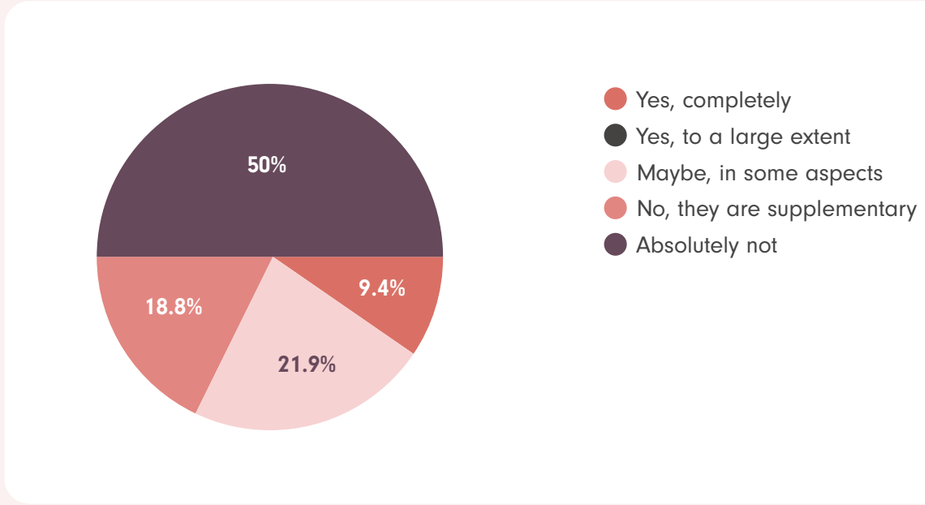

Figure 5 Effectiveness of AI feedback

Replacement of In-Person Teaching: A majority (50%) strongly reject that AI and online learning can fully replace traditional in-person teaching in creative fields. Some are open to partial replacement or supplementary use (about 39%). Only a small minority (around 10%) are fully supportive of AI and online methods completely replacing traditional teaching (figure 6)..

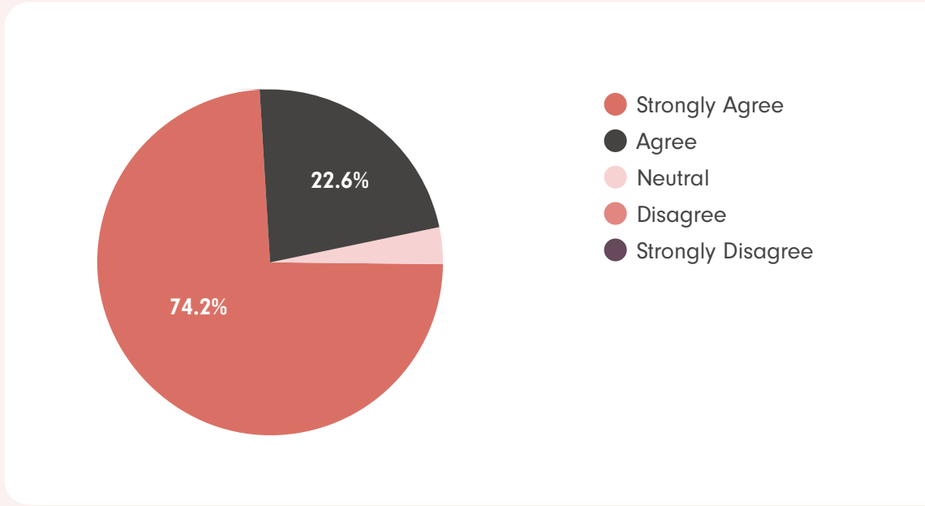

Figure 6 AI replacing traditional in-person teaching

Overall, the survey indicates a strong preference for traditional, hands-on, and in-person learning methods in creative fields, with cautious but varied views on the role of digital and AI tools in supplementing or replicating these experiences

Discussion

The survey findings reaffirm the enduring significance of traditional, hands-on learning methods in creative education, aligning with prior research (Photopoulos et al., 2023; Soomro et al., 2023). The overwhelming preference for physical materials and face-to-face critique underscores the tactile and social dimensions essential for creative skill development. These findings echo the workshop model of the Bauhaus, emphasizing material engagement and interpersonal learning.

However, students also expressed cautious openness to digital tools and AI, particularly as supplementary aids rather than replacements. The scepticism around AI's ability to provide meaningful, empathetic feedback highlights current technological limitations and suggests the need for further refinement to support creative pedagogies effectively (Chang, 2025; Ruiz-Rojas et al., 2024).

Tensions Between Innovation and Tradition:

Digital vs. Material: While students appreciate AI and digital tools, they remain sceptical about their ability to replicate tactile experiences.

Virtual vs. Face-to-Face: Students prefer in-person engagement for collaborative work and critique, highlighting emotional and social dimensions not fully captured online.

This tension between tradition and innovation points to the pedagogical imperative of hybrid models that integrate digital resources without compromising the experiential, social, and material foundations of creative education. Such balanced approaches can provide flexibility while preserving core learning outcomes and community-building, which is critical in creative fields (Alkhwaldi, 2024; Waqar et al., 2025).

Future investigations should expand beyond a single faculty and incorporate longitudinal designs to capture how perceptions evolve as technologies mature and become more embedded in curricula.

Implications for Teaching:

Educators should blend traditional and innovative methods, using digital tools to supplement rather than replace physical, hands-on learning. Hybrid learning models offer flexibility while retaining essential experiential components, at least for the design fields.

Conclusion

This study demonstrates that students in creative industries predominantly value traditional, hands-on, and face-to-face learning experiences as fundamental to their educational success. While digital and AI tools hold promise as supplemental resources, they are not currently regarded as adequate replacements for the physical and social aspects of creative pedagogy.

Key contributions include reaffirming the relevance of material and interpersonal engagement in creative education and highlighting the need for careful integration of emerging technologies. Educators and institutions are encouraged to adopt hybrid learning models that prioritize hands-on activities and critiques while thoughtfully incorporating AI and immersive tools as optional enhancements.

Future research should broaden sample size and scope, tracking changes over time and investigating the specific effects of AI and metaverse applications on creativity and collaborative learning in diverse educational contexts.

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Haberdashery, Motion, and Transgression in Puppets: A Marriage Made for Two for Animation

Moylin Buldain

Abstract:

This article explores the cultural significance of puppetry, particularly through the Punch and Judy tradition, and its relationship to the aesthetics of animation. Puppetry, as a performance medium, animates inanimate objects, creating a liminal experience that both enthralls and unsettles audiences. Punch and Judy are taken as case studies to examine how puppetry embodies transgression, grotesque violence, and moral ambiguity while remaining enduringly popular with children and adults alike. By analyzing the stylization of puppet design, narrative tropes, historical reception, and the unique dynamic between puppeteer and puppet, the study demonstrates how puppetry operates as a vehicle for cultural commentary and psychological exploration. The discussion situates puppetry within performance studies, cultural semiotics, and psychoanalytic theory, arguing that puppetry's resilience lies in its ability to reflect, distort, and challenge cultural norms. The article concludes that puppetry, when considered alongside animation, embodies a marriage of delight and unease that secures its continuing relevance.

Key Words:

Puppetry, Punch and Judy, Animation, Transgression, Performance Studies, Cultural Semiotics, The Uncanny, Carnival

Introduction

The history of puppetry reveals a practice deeply rooted in human culture, extending across continents and centuries. From Indonesian shadow puppetry to Japanese Bunraku, from African ritual puppets to Italian marionettes, the art of animating the inanimate has long been central to ritual, entertainment, and storytelling (Lanchester, 1949; Kuse and Kuse, 1980). The puppet's power lies in its uncanny capacity to straddle the line between object and subject, life and lifelessness. Jentsch (1906) identified this oscillation as central to the uncanny, later developed by Freud (1919), who noted how figures like puppets and dolls evoke both fascination and unease.

In the Western tradition, the most iconic puppet performance remains the Punch and Judy show. Originating from the Italian commedia dell'arte character Pulcinella, the figure of Punch migrated to England in the seventeenth century, where he was transformed into the grotesque jester of popular seaside performances (Barnett, 1962). Punch's exaggerated features—his hooked nose, humpback, and paunch belly—became his grotesque trademarks, while Judy served as his foil: maternal, exasperated, and often victim to his violence.

The paradox of Punch and Judy lies in their simultaneous appeal to children and adults. While ostensibly family entertainment, the shows teem with grotesque violence, marital strife, and mockery of authority. Punch beats his wife, kills his baby, and outwits figures of justice—including the hangman and even the devil—yet escapes retribution. The show thus embodies what Bakhtin (1984) terms the "carnivalesque": an inversion of morality and order that both unsettles and delights.

This article examines Punch and Judy as case studies in the transgressive power of puppetry. By analyzing stylization, narrative, and audience reception, it argues that puppetry thrives because of its ability to test cultural limits. The study further considers how puppetry prefigures animation, sharing with it the ability to imbue the lifeless with uncanny vitality.

Methods

The study employs an interdisciplinary approach combining:

1. **Performance Studies:** Drawing on Schechner (2002) to analyze puppetry as live performance, focusing on embodiment, timing, and audience interaction.
2. **Cultural Semiotics**: Interpreting Punch's clothing, body, and Judy's maternal symbolism as cultural signs.
3. **Historical Contextualization:** Situating Punch and Judy in Victorian seaside entertainment and broader social anxieties surrounding domestic life and morality.
4. **Psychoanalytic Theory:** Applying Jentsch's and Freud's theories of the uncanny to puppetry's liminal effect.
5. **Comparative Analysis:** Considering modern puppetry and puppet-inspired animation, including Belova's theatre and Royal de Luxe's large-scale puppet spectacles, to trace continuity.

Primary and secondary sources include scholarly works on puppetry, performance history, visual archives, and cultural criticism.

Results

Stylization and Symbolism

Punch's appearance is integral to his symbolic

force. His jester costume, bright and colorful, makes him appealing to children while concealing his grotesque nature. His physical deformities—his hump, his protruding belly—denote both comic excess and social transgression (Reeder, 1989). Judy, meanwhile, is styled in working-class attire, embodying both maternal virtue and the weary victim of domestic strife. The baby, held silently in Judy's arms until it is violently discarded, becomes a symbol of innocence undone by Punch's grotesque energy.

Punch's Italian origins are also key: derived from Pulcinella of commedia dell'arte, he carried with him the tradition of satire, deformity, and grotesque humor. English adaptations emphasized his role as trickster and anti-hero, cementing his dual identity as both entertaining jester and anarchic villain (Bennett, 1971).

Narrative Transgression and Binary Oppositions

The Punch and Judy narrative thrives on binary oppositions: male/female, innocence/corruption, humor/horror, life/death. Punch is simultaneously repellent and magnetic, embodying what Crone (2006) terms the "attractive anti-hero." His violence is relentless—beating Judy, killing the baby, tricking authority figures—yet always excused or laughed at. By defeating even the devil, Punch dramatizes the collapse of moral order.

This structure reflects Bakhtin's (1984) carnivalesque: hierarchies inverted, grotesque bodies celebrated, morality suspended. In this sense, Punch represents both comic release and social critique, his violence exaggerating and mocking the tensions of family, authority, and justice.

Audience Reception and Cultural Context

Punch and Judy's dual audience complicates its cultural role. Children delighted in the colorful costuming, exaggerated gestures, and high-pitched "swazzle" voice, finding fascination in Punch's antics despite their horror. Adults, however, read the shows as satirical, seeing in them exaggerated reflections of domestic strife, marital violence, and authority mocked (Leach, 1983).

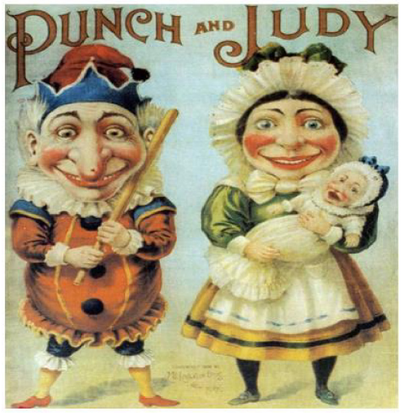
Victorian seaside performances illustrate the shows' place in popular culture. Audiences were warned that watching Punch and Judy in public spaces could be risky, as thieves often exploited distracted crowds (Crone, 2006). Punch thus became both a figure of entertainment and a cultural symbol of unruliness and transgression.

Puppeteer–Puppet Dynamics

Central to Punch's power is the relationship between puppeteer and puppet. The puppeteer, or "Professor," animates Punch with jerky movements and the shrill voice of the swazzle. Yet audiences often perceive Punch as autonomous, his character transcending the performer. Psychoanalytically, this displacement allows Punch to embody unconscious desires and violent impulses that audiences cannot own directly (Zamir, 2013).

This dynamic resonates with animation, where drawn or digital figures exceed their creators' control in the eyes of audiences. Both puppetry and animation thrive on the illusion of autonomy, rendering the inanimate vibrantly alive.

Punch and Judy, Circa 1900s, [4]



Punch and Judy, Circa 1900s, [4]

Discussion

Punch and Judy exemplify puppetry's unique ability to test boundaries. As Bakhtin (1984) observed, carnival disrupts order by celebrating grotesque inversions. Punch embodies this inversion, delighting audiences by transgressing every rule. Artaud's (1958) theatre of cruelty is equally relevant, as Punch's violence shocks audiences into visceral engagement.

The binaries of Punch and Judy—ugly/beautiful, innocent/corrupt, masculine/feminine—create a dialectical tension that fuels the performance. Children encounter moral ambiguity in stylized form, while adults confront exaggerated versions of their own anxieties about family and society.

The puppeteer–puppet relationship further complicates this process. Puppets blur authorship, as the character appears autonomous, provoking ethical questions about agency and representation. This dynamic echoes in modern animation, where characters seem to take on lives beyond their creators.

Ultimately, puppetry thrives because it stages transgression in a safe yet unsettling way. Audiences laugh at Punch's atrocities, yet the laughter masks unease. Puppetry thus exposes the fragility of moral order, making visible the contradictions of culture and society.

Conclusion

Puppetry's endurance derives from its uncanny power to animate the lifeless and to embody cultural contradictions. Punch and Judy illustrate this power vividly: grotesque yet entertaining, anarchic yet beloved, violent yet comic. By suspending morality and dramatizing binary oppositions, Punch and Judy exemplify puppetry's liminal position between delight and unease.

When viewed in relation to animation, puppetry's influence becomes even clearer. Both forms thrive on the illusion of autonomy, the uncanny sense that the inanimate has life. Puppetry thus continues to be not only an archive of cultural anxieties but also a living laboratory for testing the boundaries of morality, performance, and imagination.

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Improving Self-Checkout Usability: A Gestalt-Based Approach to User Experience Challenges Case Study at EDEKA Supermarket Devices in Germany

Nur Tayyibe Coskun [1]

Abstract:

With the advancements that technology has brought, customers are able to purchase items through automated checkout machines within stores, and do not have to interact with a shopkeeper to complete the transaction. Automated checkout machines are considered a quick method of payment; however, poor user interface design in these automated checkout machines can slow the user down in completing the transaction or even discourage them from completing the transaction when a shop clerk is assisting them. In the current study, inconveniences from users within a self-service device at EDEKA stores were noted by fellow participants. Suggestions were formed based on Gestalt principles to improve the user experience and address the concerns of users.

Key Words:

User Experience, Usability, Product Design

[1] MA UX student, Alumni

1. Introduction

As technology rapidly advances, retailers are progressively adopting innovative and interactive technological interfaces, like self-service technologies (SSTs), to enhance service delivery. (Jalil and Yeik, 2019) Self-checkout systems are widely used self-service technology, offering customers an alternative to cashier-operated checkouts, and can be composed of various modules that can be configured and adjusted over time to meet changing operational needs. (Fernandes and Ortuno, 2017) (Figure 1.)

Figure 1. A user using a self-checkout machine at EDEKA

Recently, certain retailers have begun adopting self-checkout systems, offering an interface that allows customers to make payments independently, without the involvement of a salesperson, replacing traditional manual payment methods. (Yang, Yen and Zheng, 2022) With self-checkout systems in large retail stores, customers aim to quickly complete their registration and payment to leave the store as fast as possible. However, difficulties experienced during first-time use can lead to feelings of confusion, frustration, and errors, potentially causing users to abandon the service.(Fernandes and Ortuno, 2017.

This study is focused on self-checkout kiosks at EDEKA, a large German food retail chain. With the highly competitive, consolidated, and price-sensitive German food retail industry, which has low profit margins and high government regulation, viral emotional advertising by market leader EDEKA has been directed at young adults. (Fels, 2016) This study, therefore, targets EDEKA's self-checkout system, which aims at young consumers. The research will involve observation of users, interviews, and questionnaires of four individuals to determine difficulties they face when accessing the kiosks and significant usability and accessibility issues. Based on the data collected, a recommendation for improvement of the user interface design defects will be developed applying Gestalt principles to deliver a better user experience.

2. Literature Review

This literature review examines the historical development of self-checkout systems, with a particular focus on those used in EDEKA supermarkets, to provide context for their current design and usability challenges. By analyzing existing research on self-checkout interfaces and user behavior, this section aims to establish a foundation for applying Gestalt principles to enhance the user experience and address observed issues.

2.1 Evolution of Self-Checkout Systems

Retailers must adapt to changing consumer demographics and new online shopping trends, along with advancing technology, to support economic growth. As a result, a new payment system, the self-checkout system, was developed in the 1990s. Self-service technologies, which can be defined as technological interfaces that allow customers to receive service without direct interaction with an employee, actually enable customers to independently generate services without the involvement of service staff. (Johnson, Woolridge, and Bell, 2021; Cebeci, Ertug and Turkcan, 2020) (Figure 2.)

Figure 2. The first retail self-checkout system (QikServe, 2024)

Despite initial resistance, self-checkout systems gained popularity due to the widespread adoption of mobile devices and digital payment solutions (Johnson, Woolridge, and Bell, 2021). The Global EPOS and Self-Checkout Report (2023) predicts a significant rise in self-checkout installations in the United States, from 280,000 in 2022 to 450,000 by 2028.

2.2 Technology Acceptance and Usability Barriers in Self-Checkout Systems

The adoption of self-checkout systems is closely tied to users' perceptions of their ease of use and the overall benefits they provide. The Technology Acceptance Model (TAM) suggests that perceived ease of use and perceived usefulness significantly impact individuals' willingness to adopt new technologies (Cebeci, Ertug, and Turkcan, 2020). While digital-savvy consumers may find self-checkout intuitive, those with limited technological knowledge may perceive these systems as complex and difficult to navigate.

The major obstacle for self-checkout acceptance is an issue called technological anxiety. This is an extension of computer anxiety and is defined as the apprehension and nervousness related to the use of unfamiliar technology. Jalil and Yeik (2019) claim that technology anxiety makes those individuals less likely to engage in self-serve technology or SST usage because of their perceptions of its complexity and inefficiency. However, this view has not been adequately balanced by solutions and mitigation, for instance, through improving the quality of user experience (UX) design. For example, some companies have also benefited from higher adoption rates of SSTs by investing in user-friendly interfaces and enhanced customer support (Johnson, Woolridge, and Bell, 2021).

On the other hand, consumer confusion affects self-service systems through emotional conditions such as frustration, ineptitude, or even helplessness. This results from cognitive overload and misalignment between customer expectations and system functionality, which sometimes leads to failure in using self-checkout systems. If he finds the checkout complicated, he gives up or abandons the purchase, causing decreased customer satisfaction and loyalty. While these problems have been highlighted by previous authors, e.g., Cebeci, Ertug, and Turkcan (2020), the place of human-centered design in providing solutions against these hurdles has been overlooked. Users must continue toward organizational excellence through user-friendly systems of navigation and the use of clear instructional prompts to adopt a system and experience higher satisfaction.

2.3 Enhancing Self-Checkout Interfaces Through Gestalt Principles

It has been suggested that well-thought-out user interface designs greatly help reduce usability hindrances and improve the self-checkout experience. The enhancement of UX, in this context, is critical to overcoming technology anxiety and consumer confusion in adopting self-service technologies (SSTs). It is the users' experience that enables them to use intuitive, user-friendly systems that cut down emotional responses like frustration and inefficiency. Sustainability of SSTs in an organization would take care of cognitive overload or misalignment, which might, in turn, cause consumers to get confused about how to proceed with the technologies. In this regard, avoidance behavior as well as delays in purchases are eliminated, thereby increasing customer satisfaction and loyalty. (Bascur and Rusu, 2020)

To enhance the user experience, designs can be made more intuitive and efficient by incorporating Gestalt Principles. They are founded upon a set of laws that address the natural human need to seek meaning in chaos and thus allow users to engage more effectively with systems. (Interaction Design Foundation, n.d.) Gestalt theory gives an interface designer a means of understanding how users perceive visual information. It is concerned with applying principles of perceptual organization to improve user-system communication through better display clarity and usability. These principles can guide designers in creating more usable and intuitive interfaces. (Paay and Kjeldskov, 2007)

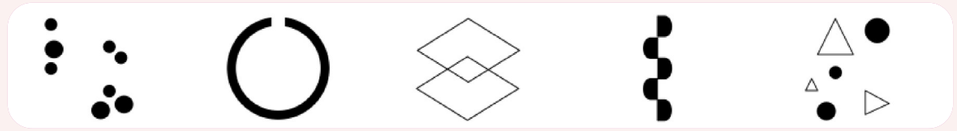

Figure 3. Gestalt principles (Paay and Kjeldskov, 2007)

Gestalt principles are essential in interface design as they guide how users naturally perceive information. (Figure 3.) For instance, proximity helps group related items, closure enables users to complete visual cues, and symmetry creates harmony in design. Continuity leads to seamless flow in user interactions, while similarity ensures that like items are recognized as a unified group. By applying these principles, designers can create intuitive and coherent interfaces that align with users' cognitive processes, improving the overall user experience. (Paay and Kjeldskov, 2007)

A recent study by Umaroh, Fitrianti, Putra, and Rahayu (2024) integrated the Design Thinking Method with Gestalt principles to improve a website interface. The study began with an empathy phase to understand user problems, followed by problem definition, ideation, and prototyping. The redesigned interface, based on Gestalt principles, significantly enhanced user engagement and interaction efficiency. These findings suggest that similar methodologies could be applied to self-checkout systems to improve usability and customer satisfaction. (Figure 4.)

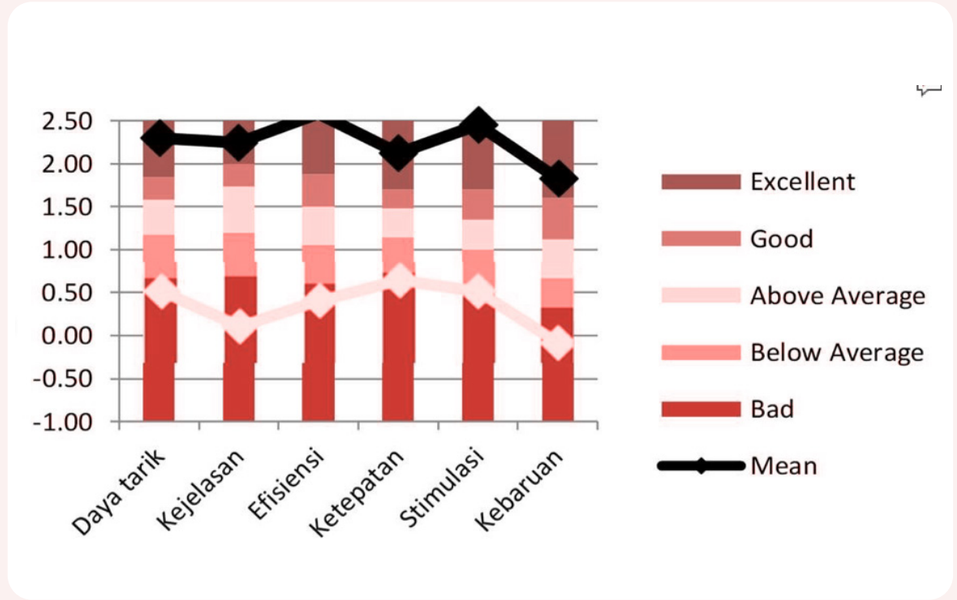

Figure 4. Comparison with the previous website interface

In summary, the application of Gestalt principles within the Design Thinking framework has served to promote user experience because it causes interface design to be consistent with users' mental processes. The literature reviewed highlights the role of empathy, user-oriented design, and the application of Gestalt principles in creating intuitive, fluid interfaces that maximally engage users. This approach not only meets user needs but also improves overall satisfaction, opening the door to more investigation and development in interface design methodologies. (Umaroh, Fitrianti, Putra, and Rahayu, 2024)

3. Methodology

This study employs a mixed-method approach to examine the user experience of EDEKA self-checkout machines, integrating qualitative and quantitative data collection techniques. The primary objective is to identify usability issues, develop an empathy map, and create a user persona that will inform the redesign of the interface using Gestalt principles. The ultimate goal is to enhance user interaction, minimize difficulties, and improve the overall efficiency of the self-checkout process.

3.1 Data Collection

To gain insights into the user experience, semi-structured interviews were conducted with individuals who have used EDEKA self-checkout machines. These interviews aimed to understand users' perceptions, challenges, and expectations regarding the current interface. Additionally, a survey was distributed via Google Forms to collect broader feedback on usability issues and user satisfaction levels.

3.2 Data Analysis

The evidence collected was systematically analyzed for repeating themes and common usability problems. An Empathy Map was created from the feedback to represent users' thoughts, emotions, behaviors, and pain points during their experience with the self-checkout machines. This allowed the understanding of emotional and cognitive aspects of the user experience.

From the empathy map analysis, a User Persona was developed to represent an average self-checkout user at EDEKA. The persona represents common traits, needs, and pains in the data, forming a user-centered focus for the redesign process.

3.3 Interface Redesign Using Gestalt Principles

It was restructuring the self-checkout interface on the basis of the application of Gestalt principles that were prototyped to affect clarity, efficiency, and usability by user persona and empathy map considerations. Design refinements related to:

Proximity: Grouping elements to improve readability and navigation in relation to collective elements.

Continuity: Developing a smooth and logical progression of the user experience.

Closure: Providing clear visual direction for the user's journey through the process.

Similarity: Consistency of button and icon symbols.

Figure-Ground: Enhancing contrast between important items and background to become more prominent. (Paay and Kjeldskov, 2007)

The revamped design would then encourage self-service checkout by decreasing users' errors and lowering frustration levels while making the self-checkout process faster and more efficient. It would also create better usage models via self-service checkout for improved customer satisfaction.

4. Redesigning EDEKA Self-Checkout Machines Using Gestalt Principles

Before initiating the redesign process, interviews were conducted with five users who had previously used EDEKA's self-checkout systems. The insights gathered from these interviews were synthesized into an Empathy Map, forming the foundation for creating a revised user persona. This persona was developed based on users' needs, behaviors, and pain points, guiding the redesign process. Throughout the interface redevelopment, Gestalt principles were referenced to ensure a more intuitive and user-friendly experience.

4.1 Empathy Map Analysis: Enhancing the Self-Checkout Experience

Self-checkout systems have become a standard feature in modern retail environments, providing consumers with a quicker, more autonomous shopping experience. However, through interviews with five users, it emerged that users experienced pain points that could provide improvements to the system. The analysis presents a synthesis of the key findings from multiple user-centered experiences, presented through the lens of an empathy map. (Figure 5.)

Figure 5. Emphaty Map

Throughout the interviews, users raised significant issues with the user interface of the system, which impacted their experience. The most prevalent user pain point was the language barrier. Although an option was provided for English, many users noted that the system presented itself in German, occasionally remaining in German, even when the language was provided in English. For clients, for example, particular pages would read in English on-screen but then revert back to German when clients were prompted to pay. Users were confused with the interface and required assistance. The friction of the interface provided even more challenges for users who did not speak German and attempted to navigate the check-out process without assistance.

Another important issue is the interface related to payment options. While cash payment would display on the screen, the interface indicated that the real system only allowed credit card payments. The cash option was highlighted in green, which led to confusion and frustration, as users expected to be able to pay with cash but were unable to do so. This design flaw caused unnecessary uncertainty about available payment methods.

Additionally, manual product selection proved to be a challenge for users, particularly when scanning items without barcodes. The system's design didn't offer an intuitive way to help users find these products quickly. As a result, many participants were forced to rely on staff assistance to locate and select these items. The inability to easily browse or search for products without barcodes significantly disrupted the smoothness of the checkout process, leading to dissatisfaction among users who expected a more seamless experience.

4.2 User Persona: Designing for a Seamless Shopping Experience

The user persona was developed with the goal of enhancing the user's shopping experience, building on the insights obtained from the empathy map. The objective was to create a system that would facilitate quicker, easier, and more seamless shopping by resolving major issues, such as payment confusion, language barriers, and trouble locating products without barcodes. The development of an interface that meets user needs and offers a more convenient and effective self-checkout process is based on this persona. (Figure 6.)

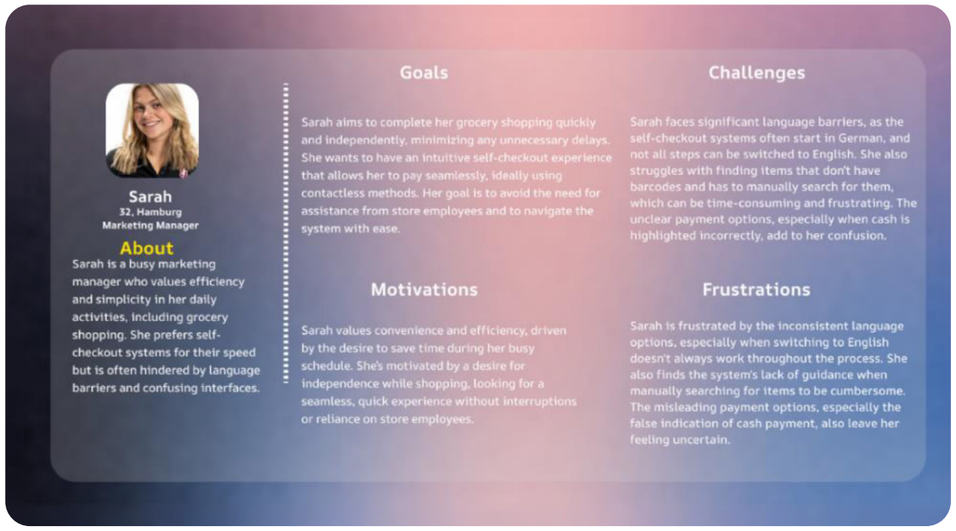

Figure 6. User Persona

4.3 Interface Analysis and Redesign

The page design departs greatly from the established style and logo of the brand. The Figure-Ground principle in Gestalt theory is challenged by the use of a blurred black and gray background, as well as gray tones in the buttons and text, which make it difficult to distinguish between figure and ground. Furthermore, using different fonts breaks the design's flow and goes against the continuity principle. As a result, when the redesign began, the brand's identity was taken into consideration when choosing the color scheme and typeface. (Figure 7). During this process, Figma, an interface design program, was used.

Figure 7. EDEKA Logo and Motto (EDEKA Kiessling,n.d.)

4.3.1 Homepage

A visual conflict is created on the homepage when the weight display overlaps with the logo and slogan text at the top. Because two unrelated elements appear too close to one another, users may interpret them as a single group, which is against Gestalt's Proximity principle. Furthermore, the overlap creates a design irregularity that impedes clarity and readability. (Figure 8.)

Additionally, the space between the "Welcome" message, the "Start" button, and the header is not visually cohesive. This misaligned space breaks the principle of Symmetry; the unbalanced spacing makes the information appear disorganized and lacks structure. Making seemingly small corrections would lend to improved visual hierarchy and better overall user experience because the Webpage would appear more intuitive and visually balanced.

Figure 8. Homepage

On the new home page, users can select their preferred language at the top, addressing this issue immediately at the start of the user flow. The top banner includes the brand logo, brand motto, and help button together as grouped elements using the principle of Proximity. In order to build the strongest Figure-Ground relationship, interactive buttons are colored and shadowed to draw attention and prompt users to engage. Figure 9)

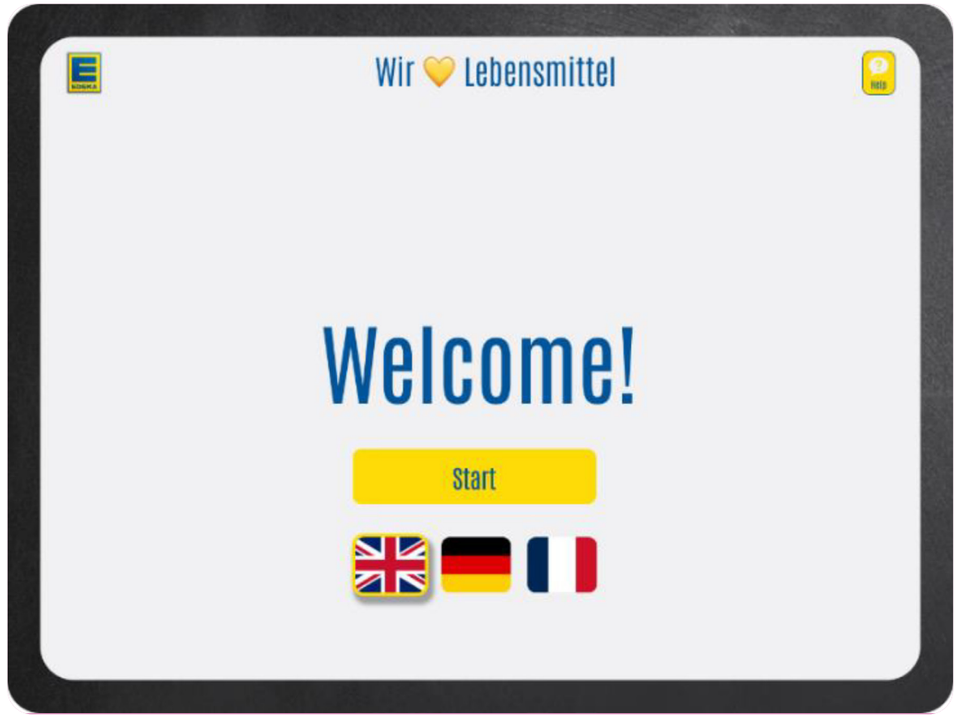

Figure 9. Homepage

4.3.2 Shopping Page

In the shopping screen, users will select a language, manually search for a product, or scan a barcode. However, the combination of the main visual and the background coloring results in low contrast, impeding the establishment of a clear figure-ground relationship. This breaks the Figure-Ground Principle - users may struggle to determine what is interactive versus the background information. (Figure 10)

An effort was made to develop two groupings based on the Proximity Principle, but the groups are not logically related. For example, language selection is grouped with product categories, despite the fact that their functions are entirely different. Similarly, the right-side group is incomplete because empty spaces exist and do not provide enough information to complete the Closure Principle and give users the indication of clearly viewing chunks of elements as a whole.

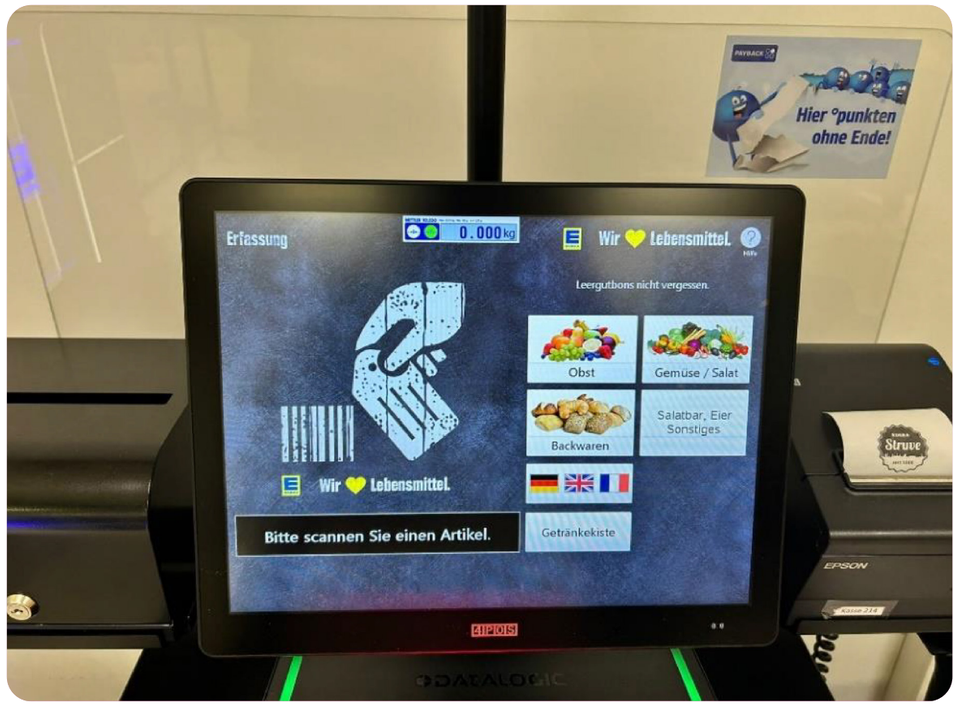

Figure 10. Shopping Page

To ensure a smooth user process for scanning barcodes or entering a product manually to initiate the process, the screen has been divided into two separate groups based on the Proximity principle. In the manual product selection process, each category has been redesigned with a uniform size and color, adhering to the Similarity principle. To enhance the Figure-Ground relationship, buttons and backgrounds have been designed with contrasting colors and textures. Additionally, the increased use of visuals aims to support intuitive navigation, allowing users to progress more effortlessly. (Figure 11.)

Scientific Journal of Creative and Digital Arts

Improving Self-Checkout Usability: A Gestalt-Based Approach to User Experience Challenges Case Study at EDEKA Supermarket Devices in Germany

Figure 11. New Shopping Page

4.3.3 Manual Selection Page

When considering a product manually, for example, adding a salad requires clicking on the "Gemüse" category. However, when examined through the lens of Gestalt principles, several design problems become apparent with this screen. The Principle of Proximity is violated because while the category buttons on the left are physically grouped together, there is space separating each product on the right, which breaks down the perception of unity. The Principle of Continuity is violated because the layout does not allow for a natural visual flow through the product images. Because products are placed in the lower right corner, they are countering the reader's natural eye movements, making it harder to interact with the interface. The Principle of Closure is also invalidated, as there are places on the screen with clear empty spaces that suggest there is an incomplete experience for the user. The Principle of Similarity is violated through numerous product visualizations using varying shapes and sizes, which contributes to a lack of visual identity. Lastly, the Figure-Ground Principle is undermined because the dark-textured background decreases legibility of the text, making it more difficult for a user to click on a product. All of these Principle violations create barriers for an easy and intuitive interaction, ultimately compromising the users' entire experience. (Figure 12.)

Figure 12. Manual Selection Page

A key challenge with the old design was the incorrect use of grouping. The new design, through consideration of users' habits regarding other machines, visually groups the products within a gallery-style view in line with the Proximity principle. Additionally, the search button in the old design was in the bottom-right corner, which oriented users in a way that was less familiar. The new design makes the search button larger and puts it in the center, while also leveraging the Similarity principles. The back button was also displayed at the bottom inconsistently, disorienting users even more, and has been moved to the top-left corner in the new design. (Figure 13.)

Figure 13. New Manual Selection Page

4.3.4 Payment Page

Upon arriving at the payment page, the "Bar" is highlighted in green, potentially leading the user to believe cash is accepted. Obviously, cash is not an option. The line that states, "Please don't forget your items," looks like a button and implies that additional action must be taken. As such, the principle of Similarity is violated. Like the amount area, numerous areas fail to adhere to the Continuity principle, as the text is not consistently written using the same rule. (Figure 14)

Figure 14. Payment Page

On the payment page, "buttons" that appeared to be buttons but did not behave like buttons have been removed to reduce confusion. Groups of similar elements were created, utilizing Proximity as part of the overall strategy. The Continuity principle was applied by using the button design that was used in previous steps, which allows for a smooth transition through the user flow. Now with added graphics, the design aims to add more intuitive ways to navigate through the interface without any interruptions in progress. (Figure 15.)

Figure 3. Gestalt principles (Paay and Kjeldskov, 2007)

5. Conclusion

Self-checkout machines have been circulating in supermarkets since the late 1990s and have only increased in popularity. Users flock to these interfaces because of perceived advantages that come with the use of a self-checkout machine: wait times are shorter, it is typically quicker than interacting with another person, and it fits into their self-perception of independence. However, at times, poor interface design can create confusion and frustration, and users may avoid using a self-checkout machine entirely.

In order to explore these themes and support our theories about Gestalt principles influencing user experience, we conducted a study on self-checkout machines in EDEKA supermarkets. In an initial phase, we interviewed five users of the self-checkout machine, which resulted in our generation of an empathy map, based on their different experiences and interactions with the self-checkout machine. It helped us reflect on users' needs, pain points, and goals. From this point, we were able to apply Gestalt principles to redesign the interface, thereby improving its usability.

As a result of this study, the redesigned interface included several key improvements. The application of Gestalt principles - Proximity, Similarity, Figure-Ground, and Continuity - made the self-checkout experience more intuitive and user-friendly. The redesigned interface contributed to reducing confusion, improving navigation, and building user confidence in completing transactions. Users also felt less frustration and hesitation in operating the self-checkout machine.

For next steps, usability testing with a larger and more varied participant base will yield more strategic opportunities for improvement. Users could also benefit from the incorporation of AI, voice assistance, and adaptive interfaces into self-checkout transactions as a means of improving access and ease of use. Finally, there are potential implications for self-checkout design by better understanding how users of various and different cultural and demographic groups engage the self-checkout.

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Appendex:

Questions for Users

1. How old are you?
2. What is your reason for choosing self-checkout? (e.g., faster process, avoiding cashier interaction, convenience, etc.)
3. How comfortable did you feel using the self-checkout machine? (Rate on a scale of 1-5)
4. At which stage did you face the most difficulty while using the self-checkout machine? (e.g., scanning items, making payment, receiving the receipt, etc.)
5. Was the system interface clear and easy to understand? If not, which parts were confusing?
6. Did you encounter any error messages or warnings during the process? If yes, how did you resolve them?
7. Did you face any issues with the payment methods? (e.g., card not being recognized, no cash payment option, etc.)
8. Did you need assistance from a store employee during the process? If yes, why?
9. What changes would you suggest to improve the user experience? (e.g., larger text, simpler instructions, faster processing time, etc.)

By collecting responses to these questions, the study aims to identify patterns in user behavior, pain points, and potential areas for improvement.

The Impact of Low-Stock Warnings on User Experience in e-Commerce

Angelika Anna Westby [1]

Abstract:

Low-stock warnings are a common feature in e-commerce, often presented as a way of providing transparency to consumers. They can, however, create pressure, stress, and even a fear of missing out among users.

This study, based on an online survey with 42 participants, explores the attitudes consumers hold towards these warnings. The results showed that the majority of participants associate low-stock warnings with negative emotions, including stress and skepticism, while a small group of participants described them as helpful. They were found to, in some circumstances, reduce frustration by communicating stock availability; however, they are most often seen as manipulative tactics that weaken the trust in the brand.

Key Words:

scarcity marketing; e-commerce; user experience; anxiety

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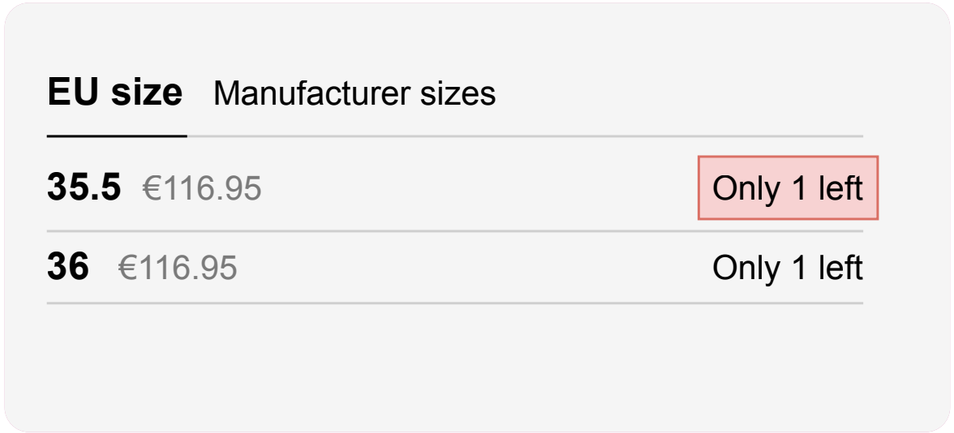


Example of low-stock warning on Zalando (e-commerce website, 09.09.25)

I. Introduction

Imagine finding the perfect pair of shoes online, only to see "1 item left" in your size. You can feel your heart beating faster as you promptly click 'add to cart'. Scarcity cues like these can, for many, seem like a helpful tool; however, their effect on consumer decision-making is far more powerful than most realize.

This study aims to investigate the impact of low-stock warnings on the user experience on e-commerce websites. Online shopping continues to grow rapidly, and with that, the use of scarcity tactics that directly affect consumer trust, autonomy, and decision-making. By gaining a deeper understanding of the effects of these tactics, companies can shape a better user experience for their customers. The research questions addressed here are:

1. Do users experience anxiety and pressure to purchase from low-stock warnings on e-commerce websites?
2. Is this marketing approach ethical from a user experience standpoint?
3. Can the low-stock warnings be beneficial to the users?

The hypothesis for this study is that low-stock warnings make users feel pressure to purchase items quickly and anxiety about missing out. At the same time, the research also considers whether these cues might serve a practical purpose by preventing frustration over unavailable products. By exploring both the positive and negative impacts, this study seeks to evaluate whether low-stock warnings are an ethical design feature that supports transparency or a manipulative tactic that weakens user autonomy.

Background

The background of this study introduces user experience in the e-commerce context, and outlines ethical questions and moral dilemmas related to scarcity marketing and low-stock warnings.

Ethical questions in marketing are often based on a set of moral standards consumers hold towards companies (Laczniak, 2012). Practicing good moral standards is essential for companies to be reliable and trustworthy, and to build loyalty from their customer base (Kamila and Jasrotia, 2023). Most consumers today value brands that are transparent and honest. "Being able to trust the brand to do what is right" ranks as one of the top considerations in buying decisions (Edelman Trust Barometer, 2023). From a UX perspective, trust is built in the background through consistency and reliability. Users feel in control when the design is clear and honest, whereas manipulative design tricks may damage the reputation a website holds (Allam et al., 2013).

Low-stock warnings provide users with information on product availability (Hayward, 2023), typically indicating when an item is about to sell out, and can therefore be described as a form of transparency. On the surface, this appears helpful and honest, yet such features can create unintended negative effects. Low-stock warnings can increase purchase intentions, as products seem more desirable and valuable in the eyes of consumers (Barton, Zlatevska and Oppewal, 2022), but they can also produce psychological distress in the form of anxiety (Axhami and Fjolla, 2024). Scarcity cues often create a fear of missing out amongst consumers, pushing them to impulsively buy products (Ali, Maqsood and Janjua, 2025). This connects to low-stock warnings: while they might be framed as transparency, their indirect effects, such as purchase pressure on consumers, can question their validity (Mok, 2023).

Recent research adds another perspective on

the effects of stock availability cues. A study conducted by professors Mitrofanov and Knight at Boston College showed that communicating low stock availability was beneficial for both revenue and customers. Their findings showed that the transparency prevented frustration over unfulfilled orders. From this perspective, we can see the low-stock warnings as a trust-building measure, rather than a scarcity tactic (Hayward, 2023).

Nevertheless, tactics like these should be applied in ways that respect user autonomy, without becoming overly persuasive or manipulative (Islam, Ali and Azizzadeh, 2024). Scarcity cues may be described as dark patterns – a term popularized by Gray et al (2018), which are design practices that prioritize business and shareholder interests over the consumers (Gray et al., 2018). Dark patterns are intentionally crafted to influence users into actions they might not have taken otherwise, through methods such as nagging, obstruction, and forced action (Mathur et al., 2019). This raises questions about the overlap between marketing strategies and UX design choices: are scarcity messages doing more harm than good, as they compromise the autonomy of the user? According to Mathur et al. (2019), this creates long-term damage to the brand's credibility.

Autonomy is a highly important UX practice as users expect to feel in control of their decisions. Ethically designed features in e-commerce websites that are transparent, reversible, and clear enable users to make informed choices (Kohler, 2022). While manipulative designs like false urgency may achieve short-term gains for the company, they weaken the autonomy and, therefore, the trust of the consumer in the long run. Companies shall strive to empower consumers through voluntary, rather than coerced, engagement, making the users more comfortable and trusting (Zaheer, 2019).

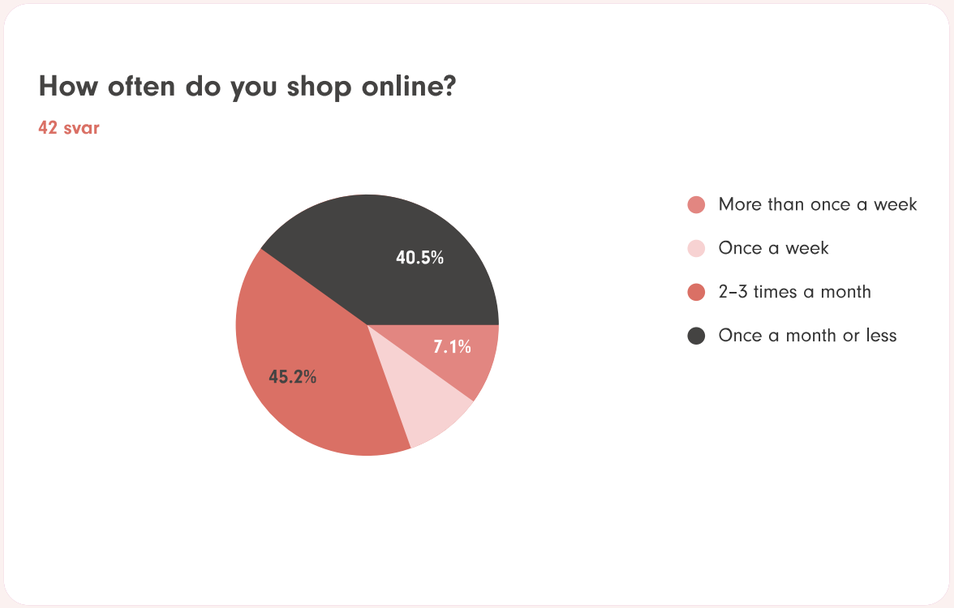
Methodology

An online survey was conducted in order to investigate these theoretical perspectives in practice. The survey collected both quantitative and qualitative data, in order to explore how scarcity tactics like low-stock warnings affect user experience on e-commerce websites. Through this approach, the study gathered a comprehensive knowledge of consumer attitudes towards the warnings by examining whether the low-stock warnings create a positive or negative experience for users shopping online.

The survey was distributed via social media. While the survey was sent out to a broad audience, most of the participants were in the age group 18–34. This age group reflects the highest demographic for online shopping as of 2024 (Eurostat, 2025). In total 42 participants completed the survey.

Participants were asked to specify their age, how often they shop online, and whether they have noticed low-stock warnings while shopping online in the questionnaire. Then they were asked to evaluate how trustworthy they found these warnings, and the extent to which these warnings made them feel pressured to purchase, on a 5-point Likert scale. An open comment box was included at the end of the survey to share their thoughts and opinions on the low-stock warnings.

The quantitative data will be analyzed using descriptive statistics to summarize responses and highlight trends, and the qualitative responses will be analysed through the lens of relevant academic theories to identify common patterns and perspectives. All responses were anonymous.

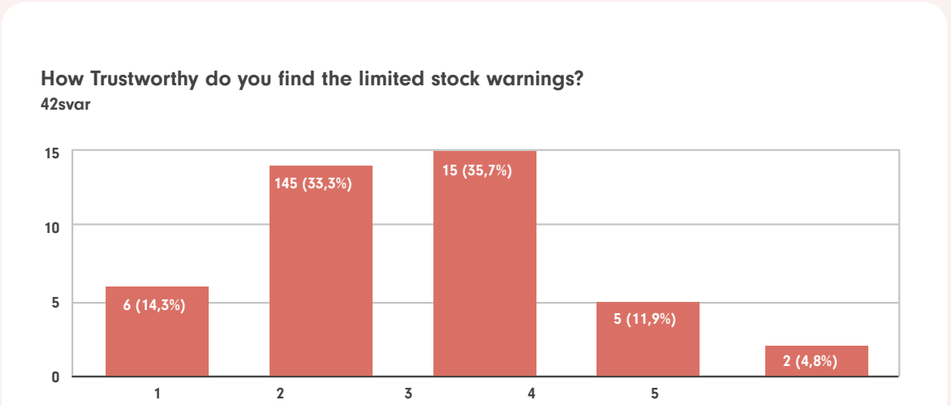


Results

The majority of the survey participants (45,2%) shop online 2-3 times a month, while 40,5% shop once a month or less, and 14,2% shop online once a week or more. 97,6% candidates state they have encountered scarcity messages while shopping online.

When asked, "To what extent do scarcity messages make you feel pressured to buy something quickly?" the responses were spread across the scale (1=no pressure, 5=strong pressure), but leaned toward intense pressure to purchase. Only a minority rated the pressure low (9,5% at 1, 11.9% at 2), indicating that most participants experience some level of pressure to purchase when met with low-stock warnings.

The survey results also indicate that the majority of participants expressed skepticism towards low-stock warnings. 83.3% rated the warnings from 1 to 3 (1=not trustworthy, 5=trustworthy), with the largest share (35.7%) selecting the neutral midpoint (3 on the scale). Only 16,7% gave ratings of 4 or 5 (trustworthy), indicating most participants are skeptical towards the low-stock warnings.



Recurring themes appeared in the open comment box, where many participants explained they feel stressed and pressured to purchase. Keywords like "tricked", "manipulative", "desperate", "unreliable", and "regret" appear throughout the answers. A smaller group found the warnings beneficial, particularly when they already intended to purchase the item they were looking for. Some also mentioned that trusting the low-stock warnings depended on the credibility of the retailer.

Discussion

When looking at the results, we can see that low-stock warnings are largely perceived as problematic by consumers, particularly due to the stress and pressure the users experience. The survey responses showed recurring keywords such as "tricked" and "manipulative", which indicate that the consumers have negative associations towards the warnings. These results support

Designing for Empathy

A UX Evaluation of Germany's Official Drug and Addiction Counselling Portal

Dima Kikoloff

Abstract:

This study presents an evaluation of Germany's Official Drug and Addiction Counselling Portal from a user experience (UX) point of view, focusing on how effectively the platform supports users seeking help or searching for trusted services in their locations and with a specific concentration on the emotional needs of users. Given the emotionally sensitive nature of addiction, the research emphasizes the importance of empathy, emotional experience, accessibility of services, clarity of information, usability barriers, and web design in the digital public health interfaces they employed. A mixed-method approach was adopted, combining usability testing with three participants and survey responses from 50 users. The evaluation was guided by Norman's emotional design framework and Nielsen Norman heuristics, with additional insights from Gestalt principles. Findings of this study revealed that while the portal offers essential services, it suffers from usability barriers, an emotionally neutral design, and unclear information pathways. Participants expressed confusion with navigation and layout, too much written information, and many reported a lack of emotional resonance. Recommendations include improving language tone, integrating accessible design features, and enhancing emotional cues to foster trust and engagement. This research highlights the critical role of human-centered and empathic UX in ensuring that digital health services are not only functional but truly supportive for users in distress.

Key Words:

User Experience (UX), Emotional Design, Empathy in Design, Human-Centered Design, Public Service Platforms, Digital Portals, Usability Testing

Introduction

In today's world, where access to health and care is increasingly mediated through digital platforms, the design of these platforms matters more than ever. Especially when it comes to sensitive issues like addiction, the way a website looks, feels, and communicates can deeply affect whether someone feels safe enough to seek help.

Prior UX research highlights that elements such as navigation, tone of language, structure of information, and visual layout strongly influence whether digital health platforms foster trust and encourage engagement, especially for vulnerable users (Norman, 2004; Desmet and Hekkert, 2007).

Germany's Federal Government provides the Drug and Addiction Counselling Portal (Federal Ministry of the Interior, 2025) as a national gateway to information and counselling services. While the portal fulfills an important public health function, government digital services are often criticized for being bureaucratic, difficult to navigate, or emotionally neutral (Margetts and Dunleavy, 2013). This raises a crucial gap: although the portal delivers information, little It is unknown whether it feels welcoming, empathetic, and user-friendly to individuals seeking support for addiction.

This study examines how real users interact with Germany's Drug and Addiction Counselling Portal through usability testing and surveys. The evaluation focuses on key aspects of the user experience: usability, clarity of information, visual design and layout, accessibility, and emotional experience. The purpose is to highlight how design choices impact users' access to services and their willingness to engage. By identifying both strengths and weaknesses, particularly those in relation to empathy and human-centered design, the study seeks to inform improvements for digital public health platforms.

Central to this work is the question of whether the portal supports individuals seeking addiction help online not only functionally. It asks: Does the portal feel welcoming? Is it straightforward and easy to navigate? Does it show empathy?

The research was conducted in mid-2025 and drew on data from usability tests and user surveys. The analysis is limited to the UX design perspective and does not cover medical, psychological, or social support aspects of the services offered.

To guide this research, the central question that frames this study is:

How user-friendly is the Official German Drug and Addiction Counselling Portal in terms of accessibility, clarity, and emotional design for users seeking help?

Link to the Portal:

German Version:

https://verwaltung.bund.de/leistungsverzeichnis/DE/leistung/99107004018000/herausgebe r/NI-8664715/region/030000000000

English Version:

https://verwaltung.bund.de/leistungsverzeichnis/EN/leistung/99107004018000/herausgeber/NI-8664715/region/030000000000

Public Health Context: Addiction and Mortality in Germany

Addiction remains a serious public health issue in Germany, with tens of thousands of deaths annually attributable to substance use (Deutsche Hauptstelle für Suchtfragen 2024). In 2023, the German Federal Criminal Police Office (Bundeskriminalamt BKA) stated that the drug-related health facilities in Germany reported the highest number of drug-related deaths ever recorded. Addiction remains a serious public health issue in Germany, affecting thousands of lives and contributing to a high number of mortalities linked to both legal and illegal substances.

According to recent national estimates, over 150,000 deaths occur annually due to substance use in Germany, including around 99,000 deaths from smoking and 47,000 from alcohol-related causes. Despite the serious impact of this public health issue, alcohol regulations in Germany remain relatively lenient. The country maintains one of the lowest alcohol taxation rates in the European Union, which contributes to the widespread patterns of risky drinking. Current estimates state that more than one in five adults regularly drink at levels considered high-risk, and an estimated 9% of individuals aged between 18 and 64 meet the diagnostic criteria for alcohol use disorder (Movendi International 2024; Deutsche Hauptstelle für Suchtfragen 2024). Another national estimation study placed the number of people affected by opioid addiction in Germany at approximately 166,000, with around 124,000 men and 42,000 women affected (Lange, Bachmeier, and Pfeiffer-Gerschel, 2017).

Although illegal drugs account for a smaller share of addiction-related deaths in Germany, they're becoming an increasingly serious concern. In 2023, the European Union Drugs Agency (EUDA) reported 1,839 deaths caused by drug use across the country. Among these cases, heroin was linked to around 678 deaths, while cocaine was involved in about 30% of all fatalities. Other stimulants like amphetamines and methamphetamine contributed to about 490 deaths. Furthermore, synthetic opioids including powerful substances like fentanyl analogues were involved in around 70 deaths, reflecting a dangerous and growing threat. Another critical trend is the aging profile of drug users. The highest overdose rates are now found among males over the age of 40, with a marked increase in deaths among individuals aged 50 to 64, a demographic whose share of drug-induced fatalities has more than doubled since 2013 (EUDA, 2025).

In conclusion, addiction continues to be a serious issue in Germany; not just because of the rising number of deaths, but also because many people still struggle to find the right kind of support when they need it most. As the patterns of substance use shift and more older adults are affected, it's clear that digital tools and platforms need to evolve, too.

People looking for help often turn to online resources first. That's why it's so important that these platforms are easy to use, emotionally supportive, and designed with real users in mind. When information is clear, accessible, and feels relevant, it can make a real difference, especially for those in vulnerable situations.

Improving the user experience of addiction-related digital services isn't just about better design; it's about making sure people feel seen, supported, and empowered to take the next step toward help. In the end, thoughtful digital engagement can be a powerful part of a more humane and effective response to addiction.

Background

Key Concepts and Definitions

User experience is shaped by multiple interconnected dimensions. Emotional experience influences trust, satisfaction, and long-term engagement, with positive feelings such as reassurance or accomplishment encouraging loyalty, while frustration or confusion often leads to drop-off. Emotional design, therefore, aims to make systems both functional and psychologically supportive (Norman, 2004; Desmet and Hekkert, 2007).

Usability is central to this process. When interfaces enable users to achieve their goals efficiently and with minimal effort, navigation becomes intuitive, errors are rare, and interaction feels smooth (ISO 9241-11, 2018; Nielsen, 1994). In other words, can the user easily understand and interact with the website or app? And are they able to get what they need without wasting time or unnecessary complications?

Equally important is accessibility, which ensures inclusivity across abilities and contexts. Inclusive design practices make information perceivable and interactive for all, often through assistive technologies. Failure to achieve accessibility not only excludes users but also raises ethical and legal concerns (W3C, 2018; Lazar, Goldstein and Taylor, 2015).

The clarity of information underpins both usability and accessibility. Reducing cognitive load through well-structured content, clear hierarchy, and effective typography allows users to process information quickly and make informed decisions (Sweller et al., 2011; Lidwell, Holden, and Butler, 2010).

Finally, design and layout shape first impressions and guide attention. Clean margins, consistent alignment, and familiar structures improve aesthetic appeal, reduce confusion, and support faster decision-making. Well-designed layouts; therefore, not only enhance usability but also strengthen engagement from the first interaction (Garrett, 2011; Tuch et al., 2012).

UX in Public Service Platforms

Public Service Platforms are integrated digital systems through which governments deliver services to citizens, businesses, and other stakeholders. Typically accessed via websites or mobile applications, these platforms aim to make services more efficient, transparent, and user-centered by leveraging technologies such as big data and artificial intelligence (Gil-Garcia et al., 2016; Janssen et al., 2017).

The development of e-government over the last two decades has gone through several key phases. The Cataloguing Phase (1996–2004) marked the move from paper-based services to basic online information portals. From 2004 to 2012, governments introduced interactive features such as form submissions, online payments, and account-based services. Between 2012 and 2018, platforms became more integrated and citizen-oriented, with co-creation and user experience emerging as priorities.

From 2018 onward, governments began shifting toward platform-based ecosystems that integrate services across departments and channels. This current phase emphasised mobile-first design, AI-powered assistance, and digital identity solutions, aiming to deliver personalized experiences to citizens. It is a period of clear transition from early digitization (e-Government 1.0) to (e-Government 4.0) and of rapid innovation, especially in areas like smart city development and governance technology, with platforms becoming more intelligent, responsive, and inclusive.

Today, platforms are increasingly intelligent, responsive, and inclusive, aligning with broader trends in smart city development and governance technology (Gil-Garcia and Sayogo, 2016; Luna-Reyes, Gil-Garcia and Cruz, 2019).

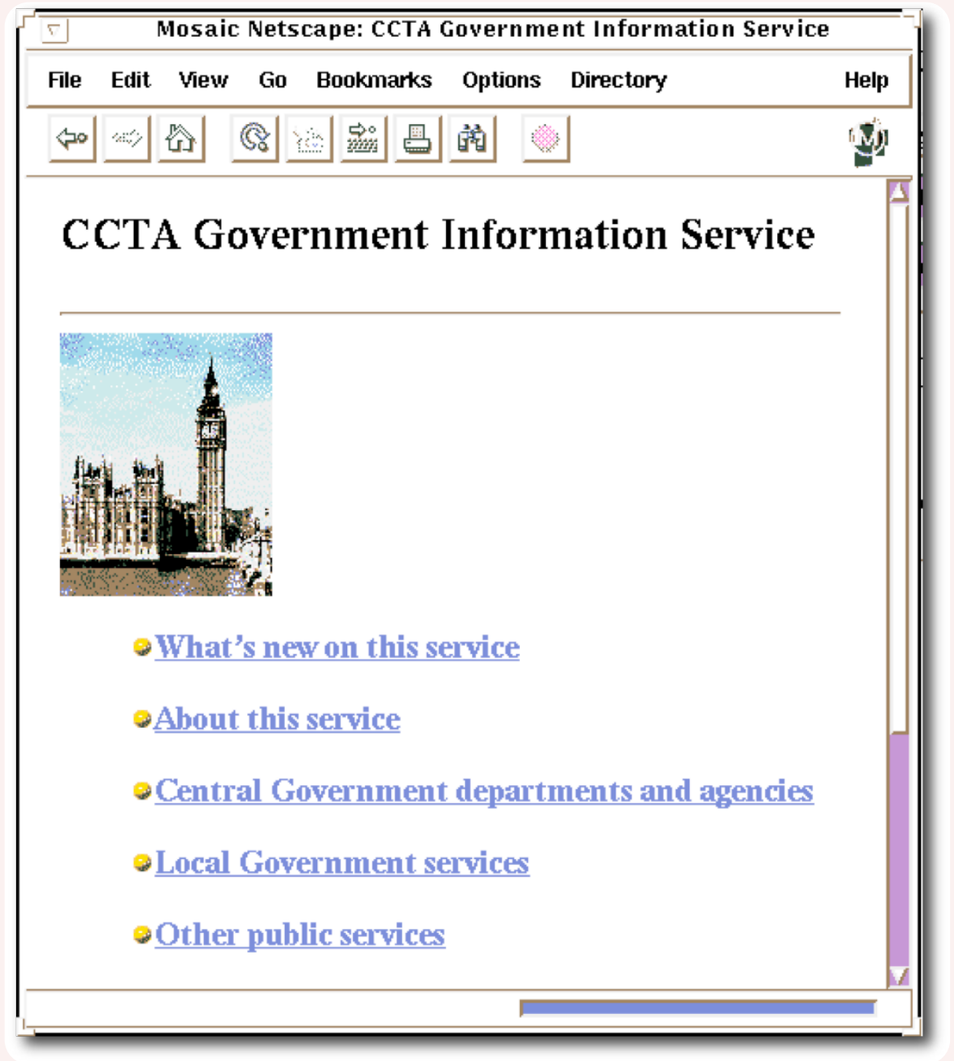


Figure 1: CCTA Government Information Service – Screenshot viewed in Mosaic Netscape (Oxford Mosaic, n.d.).

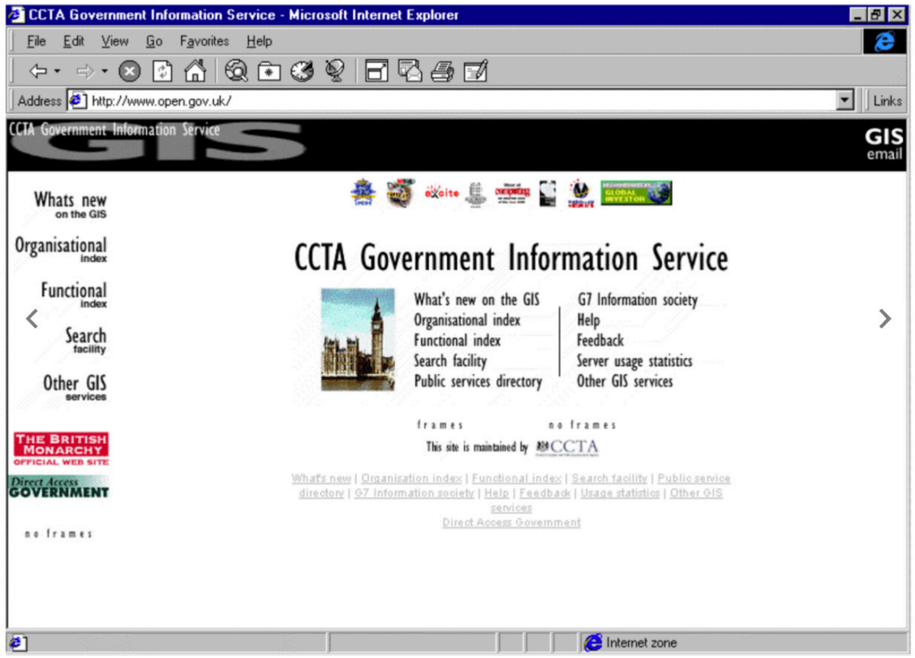


Figure 2: CCTA Government Information Service (UK Government, n.d.).

Figure 3: President George W. Bush and President John Agyekum Kufuor at the South Lawn Arrival Ceremony, 15 September 2008 (Greenberg, 2008).

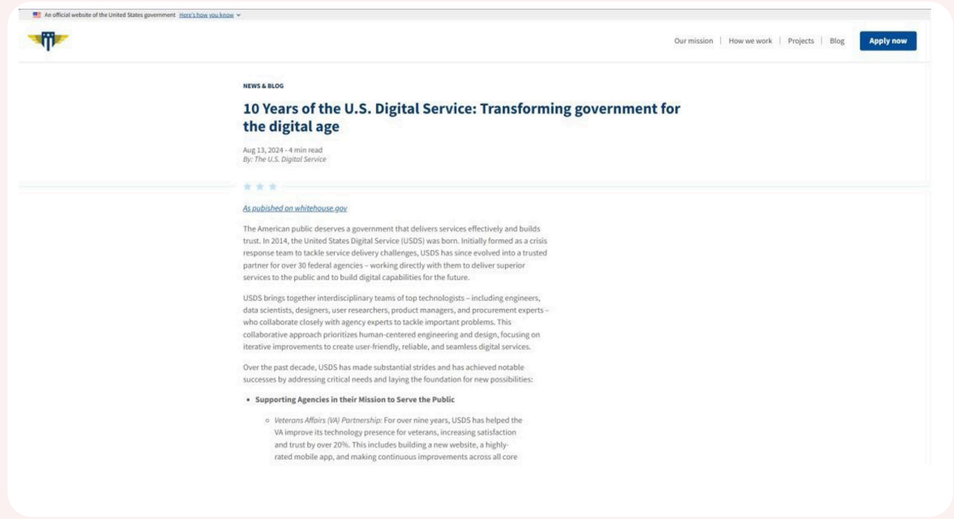


Figure 4:10 Years of the U.S. Digital Service – Transforming government for the digital age (U.S. Digital Service, 2024).

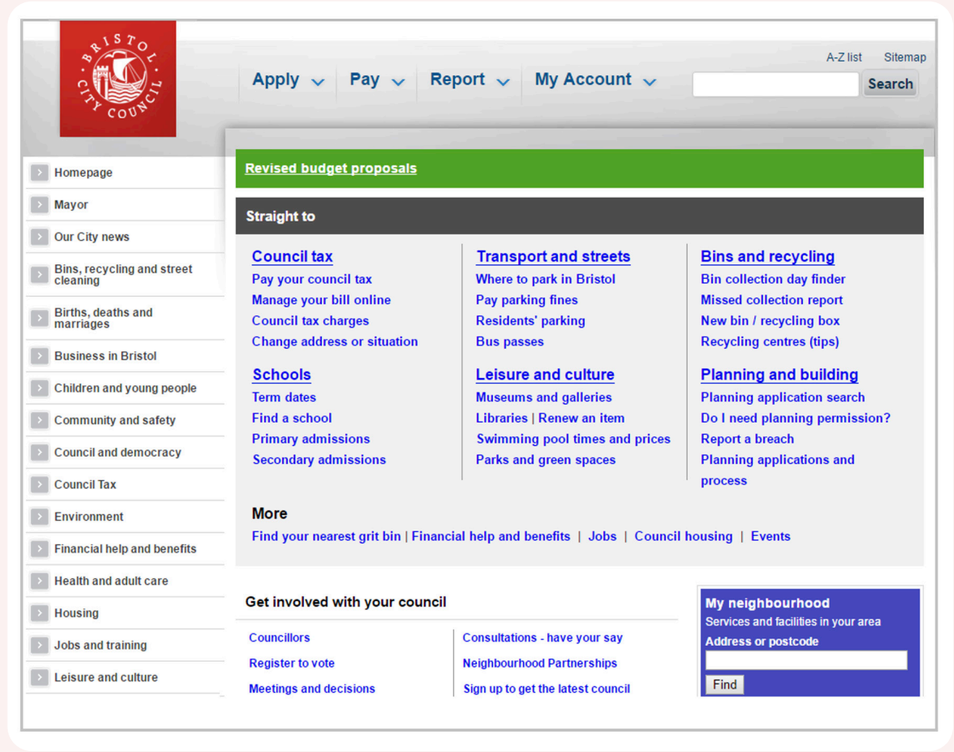


Figure 5: Homepage of Bristol City Council website (Bristol City Council, n.d.).

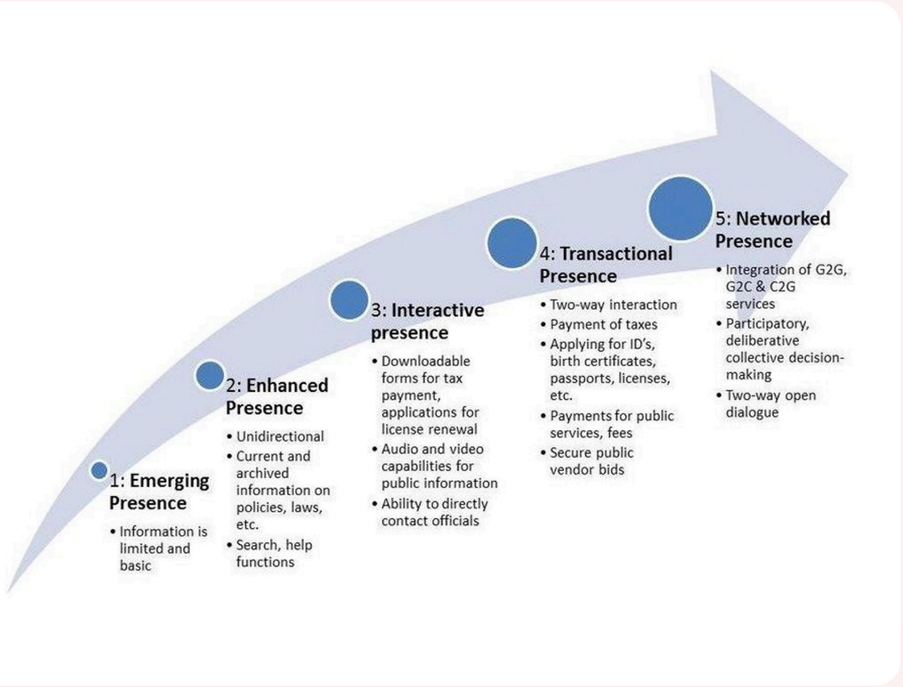


Figure 6: Stages of e-Government Developmen
(Source: Layne and Lee, 2001)

Era	Key UX Focus
1996–2004	Portal centralization, basic information grouping
2004–2012	Accessibility, multilingual support, identity management
2012–2018	Design standards, user research, agile delivery
2018+	Mobile-first strategies, AI automation, seamless onboarding, Unified log-in

Table 1: Evolution of UX across Development of the Public Service Platforms - Source: Researcher's own elaboration

UX and Empathy in Public Health Interfaces

Empathy in UX design is critical for creating inclusive digital services, particularly for vulnerable populations. Public health platforms addressing addiction must prioritize clarity, safety, and compassion. Norman (2004) argues that behavioural and reflective design levels shape emotional perception beyond basic interaction, while Desmet and Hekkert (2007) emphasize that supportive tone, calming aesthetics, and accessible content reduce anxiety and cognitive load. Features such as recovery stories, clear "Get Help" buttons, or reassuring prompts ("You are not alone") foster trust and urgency. Personal and journey maps further help designers anticipate user fears and frustrations (Garrett, 2011).

Norman's framework identifies three levels of design: visceral (visual appeal, colour, symbols), behavioural (usability of functions like booking or emergency contacts), and reflective (personal connection via recovery stories or health tips) (Norman, 2004). Complementary interaction features enhance emotional safety: live chat, visible exit buttons, and strong privacy assurances reassure users in sensitive contexts (Lazar et al., 2015).

Established principles also reduce stress and confusion. Gestalt laws such as proximity, similarity, and figure-ground aid visual hierarchy (Lidwell, Holden, and Butler, 2010; Tuck et al., 2012). Nielsen's heuristics, including visibility, familiar language, error prevention, and minimalist design, enhance usability and confidence (Nielsen, 1994; Nielsen, 2024).

In summary, a human-centered design approach combining usability, accessibility, clarity, and empathy is vital. Addiction counselling portals must not only function effectively but also convey care and trust, bridging the gap between distress and the decision to seek help.

Methodology

Research Design

This study employed a mixed-method UX research design, combining quantitative surveys with qualitative usability testing. A small, focused sample participated to gain in-depth insights into user behaviour, perceptions, and pain points in a real-world context.

Data Collection

Usability testing

Three participants were recruited for moderate usability testing. Each was asked to complete three core tasks:

- Exploring the website and understanding the available services for different addiction types.
- Finding a local center.
- Access urgent help by identifying how to get immediate assistance or emergency contact information (for example, a hotline or emergency service link).

The participants were asked to follow a think-aloud protocol, and direct observation was recorded by the researcher. Participants' responses were carefully documented, timed, and transcribed for analysis. Notes were taken regarding moments of user confusion and hesitation. Task completion times were recorded, and after completing the tasks, participants were asked a few post-test questions about their overall experience, what felt easy or difficult, and how the site made them feel. This provided a qualitative context for the task performance. No audio or video recordings were made; instead, written observation grids were used to document the sessions.

Surveys

In addition to the in-depth tests, a survey was disseminated to gather broader user feedback. A total of 50 participants completed an online questionnaire. Demographic data (age, gender), experience with digital services, emotional feedback, and website clarity were collected. The survey included a mix of question types:

- **Demographics and background:** age, gender, and questions about prior experience with government websites or online health information, to understand the user profile.
- **Closed-ended questions:** Likert scale items (e.g., 5-point scale from "strongly agree" to "strongly disagree") assessing key aspects of the portal's UX. These items covered topics such as ease of navigation, clarity of information, visual appeal, perceived emotional supportiveness of the site, and accessibility (for example, "I found the website easy to navigate," "The website's language and tone made me feel supported"). There were also yes/no or multiple-choice questions on whether users encountered any technical issues (broken links, etc.).
- **Open-ended questions:** allowing users to freely comment on what they liked best about the site, what they found frustrating, and any suggestions for improvement. These qualitative responses provided illustrative examples and explanations for the numerical ratings.

Survey responses were collected anonymously. The questionnaire was made available in English and German to accommodate respondents' preferences, mirroring the bilingual nature of the portal itself.

Data Analysis

Observation Grid

Participant behaviour during tasks was tracked using an observation sheet that noted the following points. Please refer to Annex 2 for further details. The researcher also tracked errors and time during the tasks.

Completion status.

Verbal feedback.

Errors or hesitations.

Time taken.

Task Success Rates

Tasks were considered successful if the participant reached the correct destination or completed the task without needing external assistance.

Ethical consideration

In conducting this study, particular attention was given to ethical principles to ensure that all participants were treated respectfully and fairly.

For the usability tests with three participants, informed consent was obtained prior to the sessions. Each participant was given a clear explanation of the project's purpose, the procedures involved, and their role in the study. They were assured that no audio or video recordings would take place, that their names would not be shared, and that only written notes would be taken. After each session, participants were shown the notes to verify accuracy and to approve their use in the research. Participants were also informed that their participation was completely voluntary, that they could withdraw at any point during the session, and that they retained the right to revoke their participation even after the study by contacting the researcher.

For the survey, which involved 50 respondents in Germany and various student groups across different universities were asked to participate in it, the same ethical principles were applied. Participation was entirely voluntary, and respondents were informed of the study's purpose at the outset. No personally identifiable data was collected, and additional care was considered when the survey was distributed, ensuring anonymity and confidentiality.

Findings and Results

Usability Barriers

Based on combining both findings from the usability tests and the survey, several key barriers to effective user interaction with the portal were identified:

- **Pathway Clarity:** Multiple participants struggled to interpret labels and locate nearby support centres, indicating a lack of intuitive guidance and location-based accessibility (please see figures 7, 8, and 9).
- **Conditional Rendering:** As observed from interviewers' interactions with the page, there are many tabs available while there is no actual content (kindly refer to figure 9).

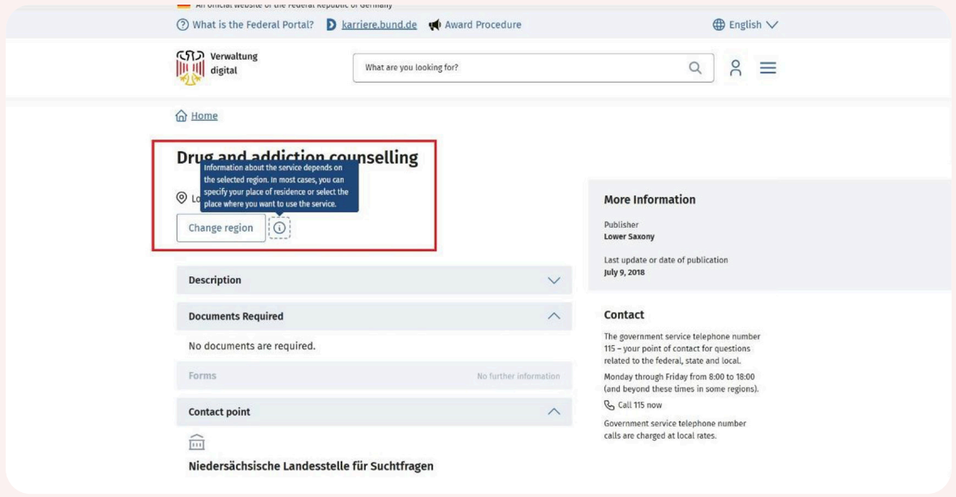


Figure 7: German Drug and Addiction Counselling Page – Search by Location.

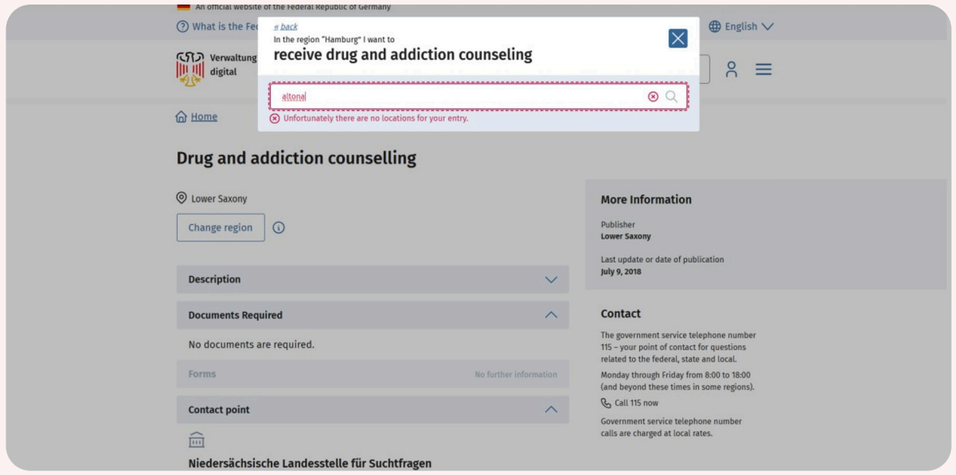


Figure 8: German Drug and Addiction Counselling Page - No Available Drug Counselling Locations for Hamburg, Altona.

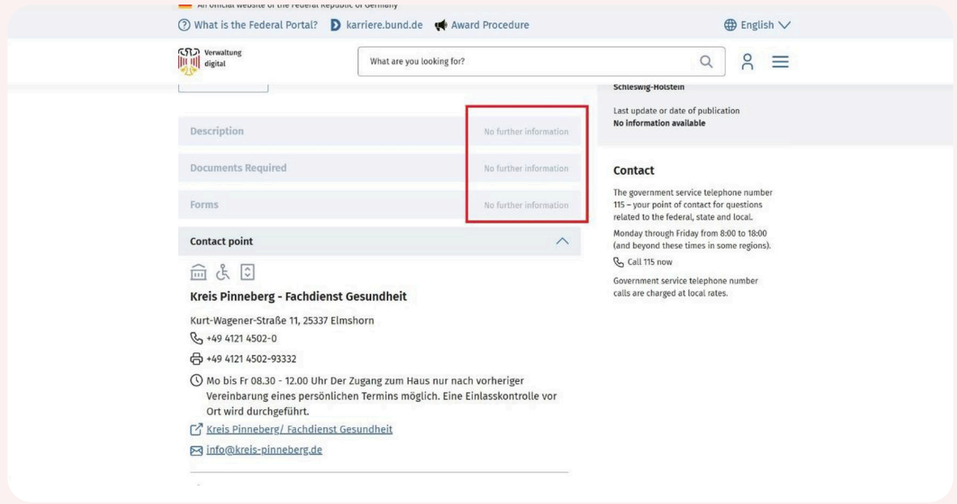


Figure 9: German Drug and Addiction Counselling Page - No further information on main tabs

- Visibility of Interactive Elements: Some drop-down menus and action buttons were not easily noticeable, reducing discoverability and ease of use.
- Information Overload: 24% of respondents to the surveys and all participants to the usability tests reported feeling overwhelmed or confused by the amount of information presented, especially when seeking addiction-related support (kindly refer to figure 10).

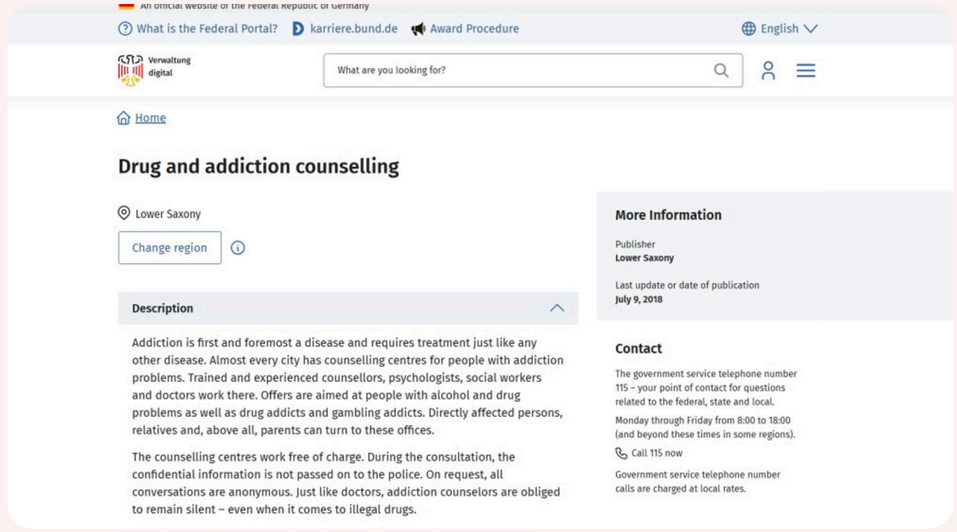


Figure 10: German Drug and Addiction Counselling Page – Main Page

- Technical Issues: 11 users reported problems such as slow loading, page errors, or broken links, particularly during login processes.

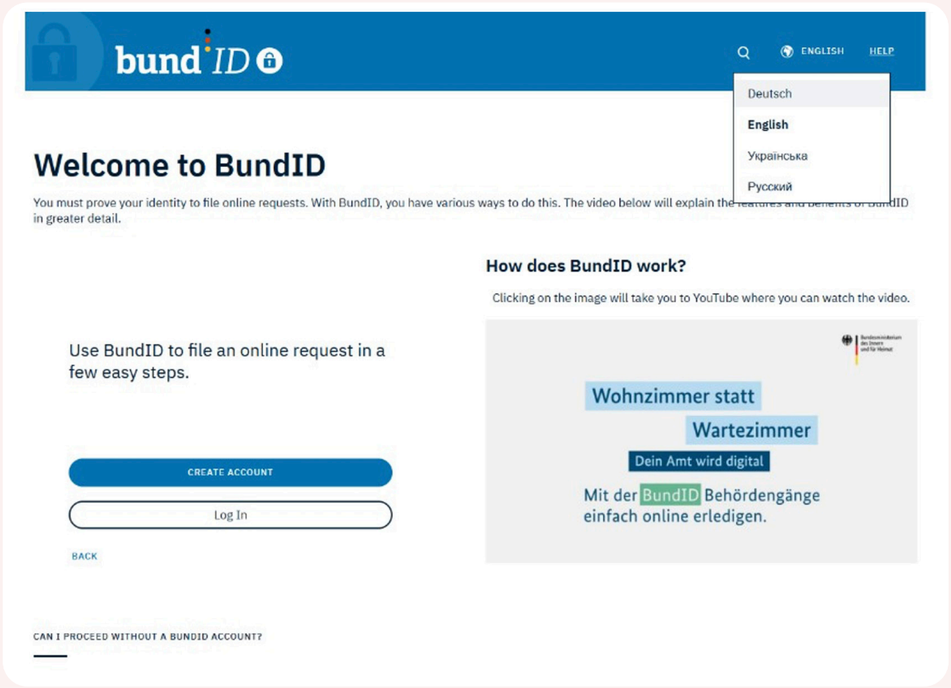


Figure 11: German Drug and Addiction Counselling Page – Log-in Page

- Elements Visibility: Several users noted that the visibility of interactive elements and action buttons is not always easily noticeable, which can hinder smooth navigation. Certain drop-down menus were not easily visible, which hindered users from accessing relevant options efficiently (kindly refer to figure 12).
- Navigation and Structure: 14% of respondents found it unclear or difficult to navigate. The tab structure and page organization did not always align with users' expectations, leading to confusion and difficulty in navigation (kindly refer to figure 12).

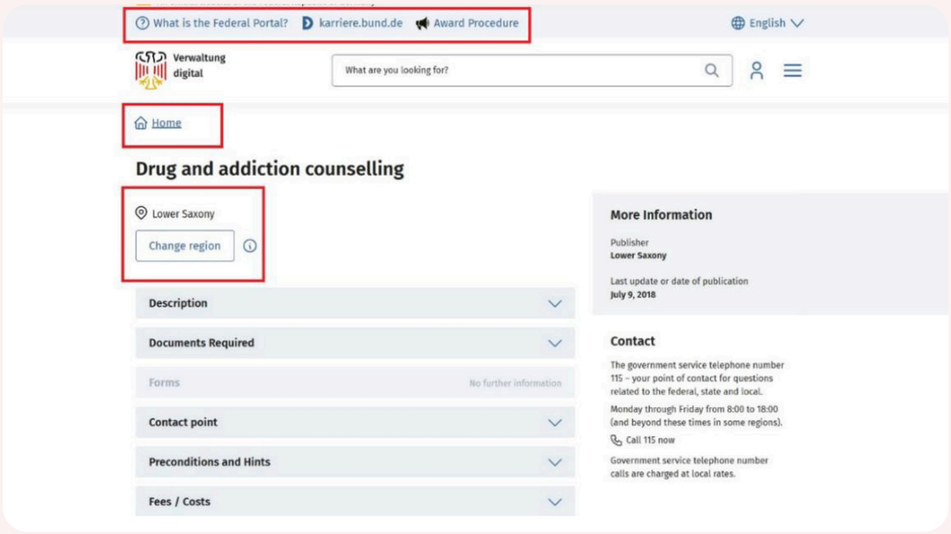


Figure 12: German Drug and Addiction Counselling Page – Page Structure

Emotional Resonance and Empathy in Design

Drawing on insights from both the usability testing and survey responses, the following key findings were captured (please refer to the summary in the annexes 1 - 5 for more details):

- 25 users agreed the site made them feel supported, while 25 users felt neutral or disagreed.
- 10 users felt frustrated. However, 19 users were neutral, reflecting the lack of frustration still present.
- Participants described the site as lacking warmth, citing a bureaucratic tone, dreary, and using minimal images or welcoming language (please refer to Figure 10).
- Participants mentioned the absence of personal stories or community content, which weakened emotional connection.

Clarity of information

Taking key inputs from users who participated in the usability testing and survey responses, the following key findings were captured (please refer to the summary in the annexes 1 - 5 for more details):

- While no major privacy breaches were found, the site lacks visible assurances, as no visible anonymous help options were captured (kindly see figures 13 and 14).

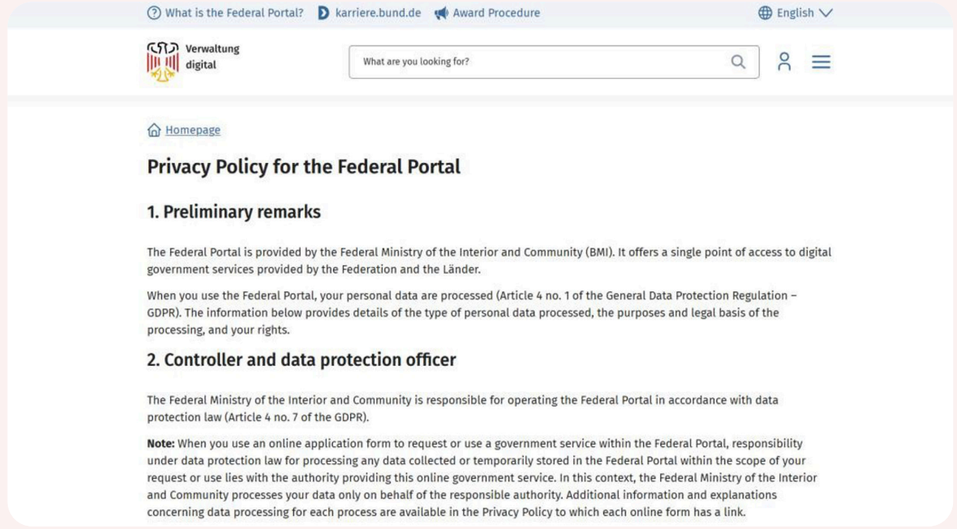


Figure 13: German Drug and Addiction Counselling Page – Privacy Policy Page

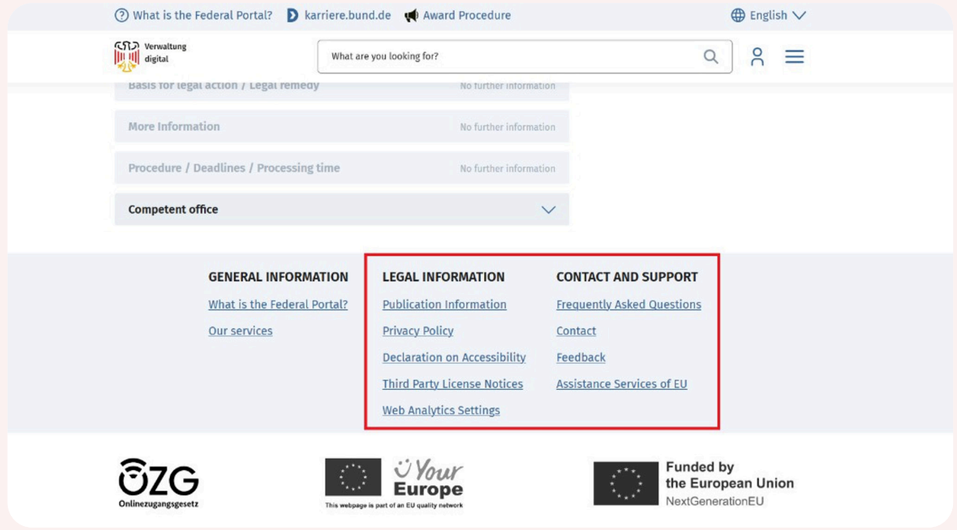


Figure 14: German Drug and Addiction Counselling Page – Footer Section

- While 31 people found the navigation to find info is very or somewhat clear, some information e.g., types of support, next steps lacked specificity. It is important to consider the 18 users who rated the information as neutral. On the other hand, all participants in the usability tests flagged that the information regarding the type of services provided is not clearly specified per locationcenter.
- 14 of users found the information unclear 6 unclear 1 unclear at all.
- Over 50 of participants found the addiction support info somewhat unclear.
- Key action items emergency contacts, local centres were not always placed intuitively.

Design and Layout

Participants flagged a few major problems related to the visual hierarchy that need improvement kindly check participants feedback in the annexes 1 – 5 for more details:

- Fonts were readable, but colour palette was described as dreary by users.
- Some headings were lost in dense content blocks please refer to figure 15.

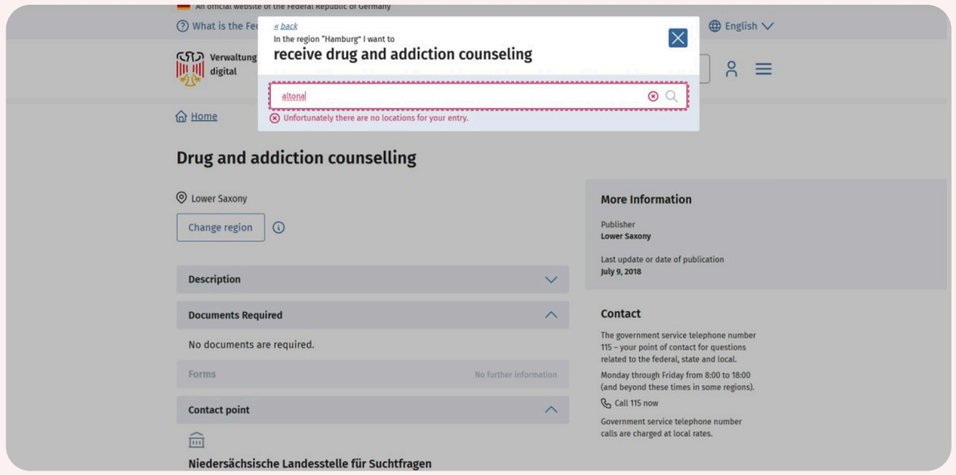


Figure 15: German Drug and Addiction Counselling Page – Header Section

- Mobile and tablet views were generally satisfactory as participants mentioned it was much easier than using the website (over 80% rated usability on mobile device as good (please see screenshots below).

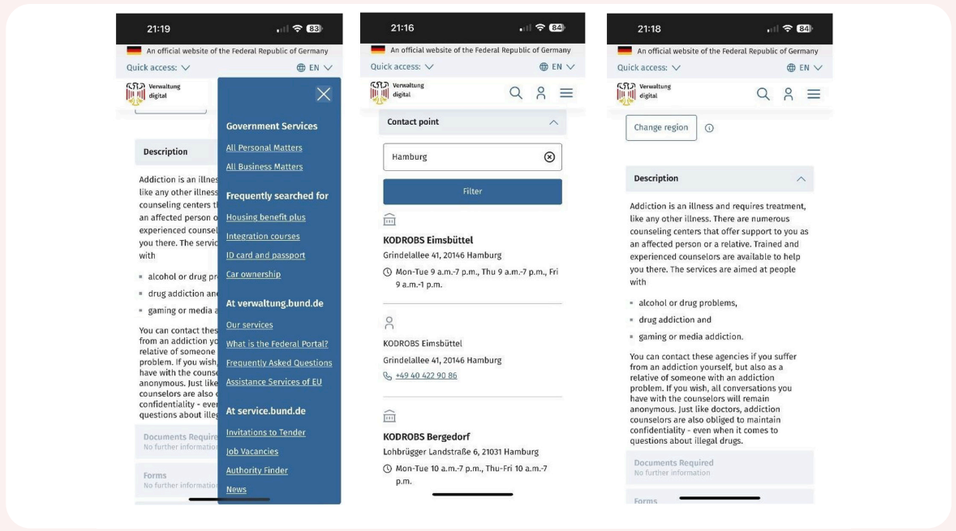


Figure 16: German Drug and Addiction Counselling Page – Mobile Device View

Accessibility of services

Many users found difficulty accessing the site accessible in terms of readability and language. On the other side, users with disabilities or low digital literacy might struggle.

- 36 users found contact options easily on their mobile phone. However, the contact info is not easily accessible on the desktop version.
- 41 users found the site easy to use on their device.
- 40 users who can read and understand German found the language easy to understand. However, language inconsistency can hinder usability for non-German speakers (please refer to figure 17).
- While no data during the surveys/interviews was collected regarding participants having sight difficulties, 7 users reported issues with font size, colours, or readability.
- Limited contrasts in some areas has been mentioned, and participants who have a design background found it very neutral and need improvement.
- The incomplete translation may cause confusion or limit access to critical information.
- No mention of text resizing tools, screen reader prompts, or alt-text.

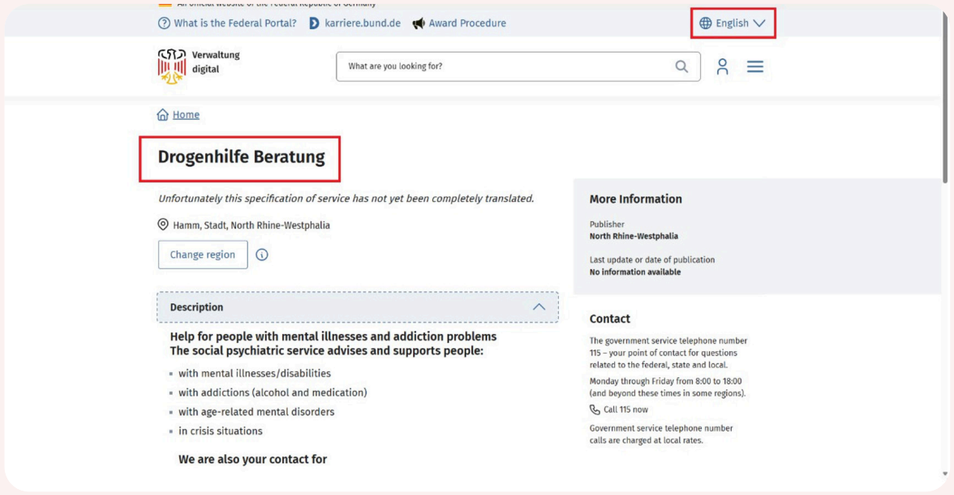


Figure 17: German Drug and Addiction Counselling Page – Language inconsistency

Discussion

Interpretation of Results

The results show that while the portal meets basic usability standards, it lacks the empathic design and intuitive structure needed for sensitive public health contexts. Emotional disconnect and unclear guidance reflected in neutral or negative responses from nearly half of participants and inconsistent language use (e.g., mixed English and German content) diminish its overall effectiveness, especially for first-time or distressed users. The absence of some important content and emotionally engaging elements, such as personal stories or community content, further weakens the user connection. The lack of visible privacy assurances and emotional safety signals, such as confirmation that no personal data is required, also undermine trust.

Implications for Service UX Design

Designing for public health services means going beyond functionality. People in crisis need clarity, reassurance, and a sense that someone is on the other side of the screen. Designers must prioritize them. Even small changes such as using friendlier headings, guiding content paths, adding key buttons (e.g., "Get Help Now?"), Using less wording, relying on global icons, and simplifying the interface could significantly improve the experience for people in vulnerable situations. Language consistency and complete translations are essential for accessibility and key to making the portal accessible to everyone, especially for non-native speakers.

Recommendations

To enhance the portal's effectiveness and emotional accessibility, the following design

Improvements are recommended:

- **Urgency and Guidance:** Add a prominent "Get Help Now" button on the homepage to support users who need urgent access. As well as the main urgency contact number, such as first aid, in a large size and a visible font.

- **Human Connection:** Incorporate a touch of human content, such as personal peers' stories, testimonials, or short videos to reduce isolation and foster empathy.
- **Design for all Devices:** Simplify layouts and navigation for better usability on desktops and tablets, as well as providing an app version for mobile devices.
- **Accessibility Tools:** Add accessibility features such as font size adjustment, screen reader support, and high-contrast options.
- **Language and Tone:** Replace bureaucratic phrasing with conversational, supportive language that feels approachable.
- **Privacy and Safety:** Clearly display data protection policies and reassure users that no personal data is required to access help, and show clear data protection statements.
- **Content Management:** Use conditional rendering to hide empty sections and avoid misleading users, and only show sections with actual content.
- **Messaging Clarity:** Replace vague messages like "No further information" with clearer ones alternatives such as "This section is currently unavailable."
- **Translation Consistency:** Ensure that all pages are fully and consistently translated to support multilingual accessibility. Adding familiar, globally recognized icons can also help users, especially those with limited language skills, to quickly understand key actions or sections at a glance.
- **Emotional Design:** Use warmer language and visuals to foster empathy. Additionally, consider emotional design principles to reduce feelings of isolation and avoid grey shades in design.

Conclusion

While the portal provides a functional baseline for accessing addiction counseling services, it falls short in delivering a user-centered, emotionally supportive experience. Addressing design gaps, particularly in language consistency, emotional engagement, structure and layout, engagement elements, clarity of information, and accessibility to all individuals, can significantly enhance its impact for vulnerable users and can better serve those who need it most.

Limitations

This study has several limitations. First, the sample size that participated in the usability testing involved only three participants, which may not represent the full diversity of user perspectives, particularly those with severe accessibility needs or limited digital literacy. Second, open-ended feedback was optional in the survey, meaning emotional responses may have been underreported. Third, the evaluation was limited to a single case study and did not include comparisons with other addiction-related platforms or services in Germany. Fourth, participants were not chosen based on prior experience with addiction support services, which may have reduced the depth of insights gathered. Finally, some updates to the portal occurred during the study period, and because these changes were not systematically tracked, user responses may reflect a mix of old and updated design elements.

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- Linguistic, structural and scientific methodological review, plagiarism check (CrossCheck/iThenticate)
- Expert review

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