



Case Report

Rethinking Basic Design Education for an Unfolding World: Beyond Modernist Foundations

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Abstract

Basic Design has historically served as the epistemic and pedagogical foundation of the design education. Emerging from the Bauhaus and later systematized through the Hochschule für Gestaltung Ulm (HfG Ulm). Basic Design pedagogy emphasizes rationality and formal reduction, establishing visual order, formal logic, and rational problem-solving as the core competencies of the designer. While these foundations were critical in shaping modern design education, they were conceived within a worldview that assumed relative stability, predictability, and optimism regarding technology. This paper argues that such assumptions are increasingly incompatible with the realities faced by contemporary design graduates, who must operate within complex, uncertain, and contested socio-ecological systems. From a design educator's perspective, this paper explores the constraints posed by proponents of 'basic design' at the IDC School of Design, provocatively questioning whether today's Basic Design pedagogy remains "basic" in its most meaningful sense. It advocates for the reimagining of Basic Design as a diverse, adaptable, and ethically grounded pedagogical space. Drawing on critical design theory, systems thinking, and contemporary debates in design education, this study calls for a shift in foundational pedagogy from a narrow, form-centric approach grounded in modernist thinking to one that embraces complexity-oriented literacy, ethical reflexivity, and openness to emergence. This reconceptualization does not depart from foundational principles but is an essential expansion to address the complex challenges of an evolving world.

Keywords

Basic Design, Design for Complexity, Epistemologies of Design, Foundational Pedagogy, Situated Design Knowledge, Critical Pedagogy

1. Introduction: Why Must Basic Design Be Revisited

Foundational or "basic design" courses occupy a privileged and formative position within design education. They represent students' first formal encounter with the discipline's epistemologies, values, and modes of inquiry—what Nigel Cross

[1] has termed "Designerly ways of knowing." As such, these courses do not merely transmit technical skills; they profoundly shape students' understanding of design itself: its purposes, possibilities, and responsibilities.

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Historically, Basic Design pedagogy has emphasized visual perception, compositional logic, material exploration, and formal abstraction—a legacy directly traceable to the pioneering work of Johannes Itten, László Moholy-Nagy, and Josef Albers at the Bauhaus [2]. Although these concerns remain relevant, the conditions under which design operates today are radically different from those that shaped modernist design pedagogy.

Contemporary designers are increasingly expected to engage with complex sociotechnological systems, ethical dilemmas, environmental sustainability, and culturally situated practices [3]. Problems are rarely bounded, stable, or purely technical; instead, they are "wicked," contested, and emergent [4]. As Horst Rittel and Melvin Webber [4] famously observed, *"The search for scientific bases for confronting problems of social policy is bound to fail because of the nature of these problems. They are 'wicked' problems, whereas science has developed to deal with 'tame' problems."*

In this context, a narrow foundational pedagogy that privileges formal rationality over contextual understanding risks preparing graduates for a world that no longer exists. This paper argues that basic design education must evolve from a modernist, form-driven foundation toward a pedagogy capable of engaging with uncertainty, complexity, and plural futures. Such a shift does not imply abandoning foundational principles but rather expanding and re-situating them within broader ethical, ecological, and systemic frameworks [5]. As Klaus Krippendorff [6] has argued, *"The challenge for design is no longer to style industrially produced objects, but to participate in the construction of human realities."* This reconceptualization demands a fundamental rethinking of what constitutes "basic" in basic design.

2. Historical Foundations: From Bauhaus to Ulm

2.1. The Bauhaus Vorkurs: Liberation Through Making

The origins of 'Basic Design' can be traced to the *Bauhaus*, particularly through the 'Vorkurs' (preliminary course), which sought to liberate visual perception from academic conventions and reconnect making with material, sensory, and experiential learning [7]. Johannes Itten, who directed the course from 1919 to 1923, developed exercises aimed at awakening students' creative energies through contrast studies, material explorations, and rhythmic compositions. Itten's approach emphasized intuition, embodiment, and what he called "subjective experience" as the foundation for all artistic and design work [8].

László Moholy-Nagy, who succeeded Itten, redirected the *Vorkurs* toward a more technologically oriented exploration of light, space, and motion. For Moholy-Nagy, the foundational task was to develop "the education of the senses"—but

senses understood not as ends in themselves, but as instruments for engaging with the technological condition of modernity [9]. Despite their differences, both Itten and Moholy-Nagy shared the conviction that foundational education must precede specialization and that sensory awakening was a prerequisite for all subsequent design development.

2.2. The Ulm Model: Rationalization and Systematization

The *Hochschule für Gestaltung* Ulm (HfG Ulm), founded in 1953, marked a significant and consequential shift in design pedagogy. Under Max Bill, a Bauhaus alumnus, the Ulm School initially sought to continue the Bauhaus tradition. However, under the intellectual leadership of Tomás Maldonado from 1954 onward, Ulm repositioned design education as a scientifically informed, socially responsible, and methodologically rigorous discipline [10]. The Ulm Model integrated systems thinking, semiotics, ergonomics, and sociology, decisively moving design education toward engineering and the social sciences.

Maldonado's contribution to the professionalization of design education cannot be overstated. He insisted that design could no longer rely on intuition alone, but instead required systematic methodologies and analytical rigor. As Maldonado [11] himself articulated: *"The designer must be capable of conceiving and developing objects and systems of objects that satisfy not only the requirements of practical use and aesthetic pleasure, but also the complex requirements of production, distribution, and use that characterize industrial society."* This orientation reflects the epistemological assumptions of mid-twentieth-century modernity: faith in rational planning, technological progress, and the possibility of objective problem definition. Maldonado explicitly emphasized method, structure, and analytical rigor as safeguards against arbitrariness in design [12].

2.3. The Limits of the Ulm Inheritance

However, this rationalist orientation also narrows the scope of foundational education. As several critics have noted, Ulm's emphasis on systematic problem-solving risks marginalizing subjective experience, cultural differences, and emergent forms of knowledge. Claude Schnaidt [13], himself an Ulm graduate, observed that *"the school's very strength—its methodological rigor—became its weakness when it was applied dogmatically, excluding questions that could not be quantified or systematized."* When uncritically inherited, the Ulm legacy can reduce Basic Design to a set of formal exercises detached from lived realities.

Similarly, Wolfgang Jonas [14] has argued that *"the epistemological foundation of design as a rational, problem-solving discipline has reached its limits. We need to move from a paradigm of certainty to one of uncertainty, from optimization to*

exploration." This critique is particularly pertinent at the foundational level, where epistemological habits are formed. The question is not whether Ulm's contributions retain value, but whether they are 'sufficient' for the challenges that design education now confronts [15].

3. The Limits of Modernist Basic Design in a Complex World

3.1. Wicked Problems and the Failure of Technical Rationality

The contemporary world presents design education with challenges that exceed the capacities of traditional foundational models. Biodiversity loss, climatic crises, social inequality, digital surveillance, and post-colonial identity formation are not problems that can be resolved through formal optimization alone. They demand ethical reasoning, cultural sensitivity, historical awareness, and the ability to work across disciplines and with diverse stakeholders.

In this context, Rittel and Webber's [4] concept of wicked problems remains particularly relevant. Wicked problems are characterized by indeterminacy, conflicting values, and the absence of definitive solutions to them. As they explain, "*The information needed to understand the problem depends upon one's idea for solving it. In other words, the problem cannot be defined until a solution is found. The formulation of a wicked problem is the problem!*" [4].

Traditional basic design pedagogy, with its emphasis on closed problems, formal resolution, and aesthetic judgment, offers limited preparation for such conditions. Students primarily trained in formal manipulation may find themselves ill-equipped when confronted with the interpretive, political, and ethical dimensions of contemporary practices. Moreover, scholars have increasingly argued that design education has lagged behind other professional fields in addressing this complexity.

In a landmark editorial, Norman [3, 16] contended that design curricula often remain "overly narrow," failing to equip students with the intellectual breadth required to address systemic challenges: "*Designers today need a broad understanding of the social, behavioral, and scientific disciplines. They need to be comfortable with systems thinking, complexity, and ambiguity. Our current educational methods, with their emphasis on studio projects and formal aesthetics, are insufficient.*"

This critique is particularly acute at the foundational level of the study. From this perspective, the problem is not that Basic Design teaches form, but that it often teaches form as an 'end in itself,' rather than as one dimension of a broader socio-material system. Such an approach risks perpetuating a technocratic understanding of design that is ill-suited to contemporary realities—what Tony Fry [17] has called "defuturing," the unintended destruction of future possibilities through narrow, short-sighted design actions.

3.2. The Art/Design Binary as a Symptom

The persistent art/design binary that haunts many design institutions is a symptom of this modernist inheritance. Drawing from the author's lived experiences dealing with systemic institutional barriers, referring to a string of email communications addressing the issue at the IDC School of Design [18], this binary, which positions open-ended explorations and design problem-solving as opposing forces, creates what I describe as 'false' binaries that impede pedagogical integration.

When foundational education is forced to choose between self-expression and systematic methods, and between intuition and analysis, it loses the generative potential of their synthesis. As Alain Findeli [19] has observed, "*The most fruitful pedagogical situations occur precisely at the boundaries between disciplines, in the spaces that resist easy categorization.*" This situation worsens when ill-informed educators resist meaningful dialogue but steer systemic and curricular changes primarily with self-interest rather than the goal of meaningful education in contemporary times.

The author, along with a team of pedagogues at the IDC School of Design, undertook explorations to establish a framework with core principles and methodologies for the foundational stage of design education during their active involvement as coordinators of the BDes program between 2019 and 2024. The detailed documentation of each batch and pedagogical exploration is well documented and archived [20]. These explorations focus on integrating interdisciplinary approaches, emphasizing ecology-centered design, and fostering creativity through hands-on exploration, sensitivity to materials, and personal understanding before considering the larger world and user needs.

Key areas included interdisciplinary integration: Foundational studies drew from immediate surroundings and artistic methods of engagement to cultivate a comprehensive design perspective. This approach encourages students to value diverse viewpoints in problem-solving. Projects focused on understanding the needs, behaviors, and contexts of people. Students engaged in ethnographic research through observations, field trips, sketching, documenting, and reflecting on their immediate neighborhoods in larger contexts. They were encouraged to make design decisions by understanding their experiences and cultural milieu. The explorations involved hands-on work with different materials and fabrication techniques. This engagement helped students understand the physicality of design and its impact on form and function.

Foundational coursework emphasized the development of visual literacy and communication skills. Students practiced sketching, model building, and storytelling to communicate their ideas in simple language. Group projects and peer critiques fostered teamwork and the iterative refinement of ideas through a shared space where students were exposed to each other's work and ideas. This method simulates the design process and encourages reflective practice. Students were trained to analyze problems, question assumptions, and intuitively

frame design challenges, laying the groundwork for advanced thinking methodologies. These foundational explorations established a pedagogical base that shaped the author's approach to developing versatile and thoughtful designers at the IDC School of Design.

They intended to help specific design disciplines at the IDC by embedding core principles into specialized streams. For example, material and process experimentation led to curricula emphasizing hands-on prototyping and the development of fabrication skills. Students engage in diverse materials to innovate their forms. Interdisciplinary knowledge and human-centered principles have shaped courses that emphasize experiences and behaviors through ethnographic, iterative, intuitive, and interactive methods. Visual and conceptual communication skills have expanded to include training in visual storytelling and sensitivity to diverse cultural artifacts.

Collaborative learning-informed curricula that encourage teamwork in production pipelines and innovative problem framing for narrative and technical challenges. Problem framing and interdisciplinary approaches have laid the groundwork for systemic thinking, enabling students to address social and environmental challenges through critical thinking. The focus on ethnographic research has evolved students' qualitative methodologies, enabling critical design decisions. By embedding these foundations into each discipline, IDC foundational curricula promote versatile skills, ensuring that graduates can tackle diverse design challenges with creativity, empathy, and technical competence.

3.3. A Provocation: What Are We Preparing Our Students for

Basic Design courses are often defended as neutral, timeless, and essential. They are described as teaching "fundamentals" that transcend context: the point, line, plane, proportion, rhythm, balance, and structure. However, this apparent neutrality masks a deeper ideological question: fundamental for what world, and whose future?

Contemporary design students will graduate into a world defined less by formal clarity than by instability: climate emergencies, algorithmic governance, social polarization, postcolonial reckonings, and rapidly mutating technologies. Problems are rarely bounded, solutions are provisional, and values are contested. However, in many institutions, the first year of design education still trains students as if they are entering a world of stable briefs, rational systems, and predictable outcomes.

This paper provocatively argues that the way basic design is commonly taught prepares students for a world that has already passed. The problem is not that basic design exists, but that its pedagogical imagination has remained largely frozen in a modernist epistemology. If foundational education shapes how students learn to think, then the stakes of rethinking basic design are far higher than curricular reform; they concern the future relevance and ethical responsibility of design education

itself.

Instead of merely preparing students for specific jobs, basic design should focus on building skills such as learning, unlearning, and adapting to whatever the future holds. This highlights adaptability, curiosity, and resilience as key design skills. As Anne-Marie Willis [21] points out, "Design education needs to prepare students not for a known future, but for futures that are unpredictable and emergent. This requires a shift from teaching solutions to teaching how to ask good questions, how to recognize patterns, how to work with uncertainty."

4. Rethinking Foundations: Theoretical Resources for Transformation

An alternative conceptualization of design is offered by Nelson and Stolterman [22], who define design as "the ability to imagine and enact intentional change in the world" (p. 12). This definition foregrounds intentionality, judgment, and responsibility rather than mere technical proficiency. Importantly, it situates design action within uncertain and evolving contexts: "*Designers must act in the face of uncertainty. They do not have complete information, they cannot predict outcomes with certainty, and they must make judgments that integrate diverse forms of knowledge—scientific, experiential, ethical, and aesthetic.*" [22]. From this standpoint, foundational design education must cultivate not only perceptual acuity but also what might be called 'epistemic humility'—the recognition that designers always operate within incomplete knowledge systems. This implies teaching students how to 'frame' problems, question assumptions, and reflect on the consequences of their interventions rather than simply applying pre-existing solutions.

This orientation aligns closely with Schön's [23] concept of the 'reflective practitioner,' which emphasizes learning through reflection-in-action rather than the application of fixed rules. Schön [23] argued that professional education had been distorted by an overemphasis on "technical rationality"—the idea that competent practice consists of applying scientific knowledge to well-defined problems. In contrast, he proposed that designers engage in a process of problem framing: "*In real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the materials of problematic situations which are puzzling, troubling, and uncertain.*" In Basic Design, this would mean shifting from prescriptive exercises toward open-ended explorations that invite uncertainty, dialogue, and situated interpretation. Students would learn not simply to execute but to 'inquire'—to treat each project as an opportunity for discovery rather than demonstration.

4.1. Social Innovation, and Distributed Design

Ezio Manzini's work provides a crucial bridge between foundational education and contemporary design practice. In

'Design, When Everybody Designs', Manzini [24] argues that design has become a distributed social capability rather than the exclusive domain of professionals. Designers are increasingly acting as facilitators, mediators, and sense makers within complex social systems. As Manzini [24] writes, "*We are witnessing a diffusion of design capabilities: more and more people, individually and collectively, are designing and co-designing their ways of living. In this context, professional designers are called to trigger and support these diffuse design capabilities, rather than replace them with their own designs.*" This perspective has profound implications for basic design pedagogy. If design is inherently relational and socially embedded, foundational education must introduce students to questions of ethics, participation, and power from the outset. Formal skills remain important; however, they must be situated within an awareness of their social impact and responsibility.

Critical design theorists, such as Anthony Dunne and Fiona Raby [25], further argue that design education should cultivate speculative and critical capacities, enabling students to question dominant narratives and imagine alternative futures. In foundational contexts, this could mean using form-making not only to achieve harmony and resolution but also to provoke reflection, raise questions, and open up space for debate. As they put it, "*Critical design uses speculative proposals to challenge narrow assumptions, preconceptions, and gives about the role products play in everyday life. It is more of an attitude than anything else, a position rather than a method.*" [25].

4.2. Situated Knowledges and Plural Epistemologies

Finally, any reconceptualization of basic design must engage with marginalized (center-periphery), post-colonial, and indigenous critiques of universalism [26]. Donna Haraway's [27] concept of "situated knowledges" challenges the view from nowhere—the supposedly objective perspective that underpins much modernist design thinking. For Haraway [27], "*only partial perspective promises objective vision. Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting of subject and object.*"

Applied to design education, this implies that the principles of basic design are not universal truths but particular historical and cultural constructions. They emerged from specific European contexts and carry assumptions that may not hold across diverse cultural traditions. As Escobar [28] argues in 'Designs for the Pluriverse,' "*design is always cultural design. It is always based on particular ontologies, particular understandings of what the world is made of and how it works.*"

Foundational education must therefore open itself to multiple ways of knowing and making, including indigenous and vernacular traditions that have been marginalized by modernist and privileged design discourse.

5. Toward a Reimagined Basic Design Pedagogy

In light of the critiques and theoretical perspectives developed above, this study proposes that basic design education be reimagined through two interconnected pedagogical commitments. These commitments are not meant to establish a new orthodoxy but rather to serve as guiding principles for pedagogical experimentation and development in the field. The first addresses what students engage with—the expanded domain of design concerns. The second addresses how they engage in the cultivation of reflective, process-oriented practice.

5.1. Expanding the Domain: Complexity, Ethics, and Plural Ways of Knowing

The most fundamental reorientation required in basic design education is the expansion of the domain of design concern beyond the formal and compositional toward the systemic, ethical, and epistemological. This expansion operates at three interconnected levels.

Complexity Awareness demands that students encounter design not as the manipulation of isolated forms, but as an intervention within interconnected systems. From their first encounters with design, students must learn to see artifacts as nodes within ecological, social, and technological networks, with each design decision rippling outward through systems of production, use, and disposal. This does not require turning foundational students into systems analysts, but cultivating what might be called a systemic sensibility: the habitual capacity to look beyond the immediate object to its wider implications. For example, consider a foundational exercise in form understanding and manipulation. In a traditional approach, students might be asked to explore variations on a cube—subtracting, adding, and transforming volume according to compositional principles. In an expanded approach, this same exercise might be reframed as follows: What materials constitute this cube? Where do they come from?

What energy and labor do they embody? What happens to this form at the end of its imagined lifecycle? Formal exploration remains, but it is now situated within a web of questions that connect aesthetic choices to ecological consequences. Meadows's [29] work on leverage points offers conceptual resources, helping students understand that design operates at multiple levels, from changing parameters to transforming paradigms. The goal is not mastery of systems theory but internalization of a question: "And then what?"

Ethical and Ecological Grounding follows directly from this systemic awareness. Foundational exercises must explicitly engage with questions of sustainability, care, and responsibility, not as add-on modules reserved for advanced study but as integral to studio practice from the first day. This implies embedding ethical reflections within the making process itself. After introducing a project, teachers can guide students to interrogate their material choices: Why this material? What

alternatives exist? What are the comparative ecological costs? Even the seemingly mundane question of prototyping materials, *Styrofoam* (thermocool) or *Polystyrene* should be used? Can we work with recycled or renewable alternatives? becomes an opportunity for ethical deliberation.

More fundamentally, students must be equipped to ask critical questions that will serve them throughout their careers, such as, who benefits from this design? Who might be harmed? What happens at the end of its useful life? These questions are not technical but ethical; they require judgment rather than calculation. As Tony Fry [17] insists, "*The designer must become a defuturing agent—one who understands how design choices foreclose or open up future possibilities.*" This orientation cannot be developed if ethics is treated as a specialized domain separate from "real" design work. It must be woven into the fabric of foundational pedagogy, such that every project becomes an opportunity to consider not only how to make something, but also whether it should be made and what worlds it might bring into being.

Plural epistemologies extend this expansion beyond ecology into culture. The Basic Design canon, inherited from the Bauhaus and Ulm, carries specific European assumptions about form, beauty, and method that are often presented as universal. A reimagined foundation must actively decenter this inheritance and open space for diverse cultural, Indigenous, and non-Western ways of knowing and making. This is not a matter of token inclusion—adding "exotic" examples to an otherwise unchanged curriculum—but of fundamentally reconstituting what counts as design knowledge.

In the Indian context, where this paper is written, this means engaging seriously with craft and handloom traditions, indigenous ecological knowledge, and sculptural practices that operate according to principles quite different from those of European modernism. The embodied knowledge of craftspeople who work across multiple scales and materials offers resources for foundational learning that are no less sophisticated than the exercises of Itten or Albers—they are simply different, rooted in distinct ontologies and social arrangements. Studying rangoli or kolam practices, for instance, reveals sophisticated understandings of geometry, repetition, and impermanence that challenge Western assumptions about design as a permanent object-making. Such studies must approach these traditions not as primitive precursors to "real" design but as coherent, complex design practices with their own principles and pedagogical approaches.

These three expansions—systemic, ethical, and epistemological—are deeply interconnected. Ecological questions inevitably lead to cultural questions: Whose environment, whose sustainability, and whose future? Ethical deliberation requires a systemic understanding; one cannot assess consequences without understanding interconnections. All design knowledge is situated knowledge that emerges from particular places and histories. A foundation that addresses only form while ignoring these dimensions prepares students for a world that no longer exists, if it ever did.

5.2. Cultivating Reflective Practice: Process, Dialogue, and Critical Judgment

The second major reorientation shifts pedagogical attention from the finished artifact to the process of making it—from what students produce to how they think, decide, and learn. This is not to diminish the importance of outcomes but to recognize that design expertise primarily resides in the capacity to manage processes with awareness, flexibility, and strategic judgment. As Nigel Cross [11] has observed that "*expert designers do not necessarily produce better solutions than novices; they produce them more efficiently because they have learned to manage their design processes.*" Foundational education should therefore cultivate what might be called process literacy: the ability to observe, understand, and intentionally shape one's own design activity.

Paradoxically, this orientation has deeper roots in the early Bauhaus than in the Ulm model, which supposedly extended it. Johannes Itten's *Vorkurs* emphasized the process as a mode of self-discovery; students engaged in extended material explorations not to produce finished works but to develop sensory awareness and creative confidence [2]. Moholy-Nagy's "education of the senses" [9] was fundamentally about developing perceptual and manipulative capabilities that would serve students across diverse situations. Despite its methodological innovations, the Ulm School narrowed this process-orientation by privileging analytical procedures over experiential learning—a narrowing that continues to shape foundational pedagogy when Ulm's rationalism is treated as gospel rather than a historical contribution.

A process-oriented foundation is supported by several interconnected commitments. The valuing of experimentation and failure is perhaps the most visible manifestation of this orientation in the literature. In contemporary design education, failure is often treated as something to be avoided or concealed—a sign of inadequacy rather than a normal and necessary aspect of creative work. This attitude is reinforced by assessment cultures that reward resolved outcomes and inflated grades, misleading learners about their capabilities. However, innovation fundamentally depends on the willingness to take risks, make mistakes, and learn from them. As Tim Brown [30, 31] argues, "iteration is the new perfection"; rapid prototyping and testing generate failures early and cheaply, enabling learning before significant resources are committed.

The pedagogical challenge is to create what David Kelley and Tom Kelley [32] call a "fail-friendly" culture: "*In a creative confidence culture, failure is not only tolerated, it's actively mined for insights. When something doesn't work out, the question is not 'whose fault was it?' but 'what can we learn from this?'*" This requires structures that normalize failure by celebrating learning from missteps, creating low-stakes opportunities for exploration before high-stakes assignments, and modeling reflective practice through faculty sharing of their own design journeys. Crucially, it also requires what

Schön [33] calls "double vision"—the capacity to be simultaneously immersed in making and attentive to one's own process. This double vision is precisely what foundational education should cultivate in learners.

Documentation as a reflective practice provides a concrete means of developing this capacity. When students maintain process journals, sketchbooks, or digital journals that capture not only final outcomes but also false starts, dead ends, and moments of insight, they create artifacts that enable metacognition—thinking about their own thought processes. These records become the basis for Schön's [23] reflection-on-action: the retrospective examination of past practice that enables students to identify patterns, recognize recurring challenges, and deliberately develop new strategies.

Documentation must be taught, not merely assigned. Students need guidance on what to document and how: not only sketches and models, but also notes on decisions and their rationales, reflections on what worked and what did not, and questions for future exploration. Regular process reviews, in which students share work-in-progress and discuss their decision-making, make documentation a living practice rather than a bureaucratic requirement. Reflective writing assignments that ask students to analyze their own processes further deepen their capacity for self-learning.

Creating dialogic spaces transforms the social context of the learning process. Traditional studio critiques often position the instructor as an authoritative judge and students as defensive advocates for their work. While this format can generate valuable feedback, its hierarchical structure may inhibit open, exploratory dialogues that support genuine learning. In contrast, dialogic feedback cultures engage students in conversations about their intentions, discoveries, and dilemmas. They position students as active sense-makers rather than passive recipients of judgment, treat uncertainty as a resource for inquiry rather than a deficiency to be concealed, encourage multiple interpretations rather than seeking the "right" reading, and build learning communities where students learn from peers as well as instructors.

As bell hooks [34] argued in *Teaching to Transgress*, "To teach in a manner that respects and cares for the souls of our students is essential if we are to provide the necessary conditions where learning can most deeply and intimately begin." This care extends to creating classroom environments in which students feel safe enough to take risks, share uncertainties, and engage in genuine intellectual exploration. Peer dialogue sessions, in which students present their processes, not only their outcomes, and listeners are asked to describe what they see and ask questions, can transform the affective economy of a studio.

Reflection-in-action, or thinking while making, represents the most sophisticated dimension of process-oriented practices. Schön [23] described this process vividly: "The practitioner makes sense of a situation he finds puzzling through a kind of inquiry he calls 'reflection-in-action.'... He does not keep means and ends separate but defines them interactively

as he frames a problematic situation." This is the distinctive intelligence of design: a thinking-through-making that generates new understanding in the midst of action.

Foundational education can cultivate reflection-in-action through learning experiences that integrate thinking and making rather than separate conceptual development from execution, create opportunities for in-process dialogue where students articulate emerging insights, teach observational skills that enable them to notice what is happening in their work, and develop a vocabulary for describing design processes and decisions. The goal is not to replace intuition with analysis but to bring intuitive knowing into reflective awareness.

Questioning assumptions is a critical aspect of reflective practice. Every design project begins with assumptions about users, context, materials, problems, and possibilities. Some are explicit and examined, while many more operate implicitly, shaping outcomes without being brought into awareness. Teaching students to identify and interrogate these assumptions is central to developing critical judgment skills.

In this regard, critical pedagogy tradition, particularly Freire's work [35], offers valuable resources. Freire's concept of *conscientiza ção* (critical consciousness) involves learning to perceive social, political, and economic contradictions and to take action against oppressive elements of reality. Applied to design foundations, this means teaching students to identify assumptions embedded in design briefs and project parameters, recognize cultural biases in supposedly universal design principles, question problem definitions inherited from clients or precedents, and consider alternative framings that might generate different design possibilities that are more inclusive. As Terry Eagleton [36] observes, "Not to question the given is to be complicit in its reproduction." Design education that fails to cultivate critical questioning risks producing graduates who unconsciously reproduce existing inequities and unsustainable practices.

Learning from unexpected outcomes completes this pedagogical approach. In the linear, rationalist model inherited from Ulm, unexpected outcomes are typically treated as errors or deviations to be minimized or eliminated. In a more complex and adaptive understanding, they become valuable sources of learning, revealing aspects of the situation that were not initially understood. John Dewey's [37] philosophy of experience provides theoretical grounding: genuine learning occurs when experience generates consequences that provoke reflection and revised understanding. Unexpected outcomes are not failures but opportunities for inquiry. In studio practice, this means treating "mistakes" as data about materials, processes, or contexts; encouraging students to follow emergent possibilities rather than rigidly adhering to plans; creating opportunities for productive serendipity in which chance discoveries can be recognized and developed; and teaching students to distinguish between outcomes that reflect their intentions and those that reveal something new.

The shift from outcome-centered to process-oriented pedagogy does not represent a diminution of standards but their

expansion. By valuing reflection, experimentation, and learning from failure, design educators prepare students not only to produce well-crafted artifacts but also to navigate the uncertainty, complexity, and emergence that characterize contemporary design practice. Foundational education initiates students into a world; the question is what kind of world we invite them to inhabit. One of the fixed rules and predetermined outcomes? Or is it an ongoing inquiry, critical reflection, and adaptive learning? The choices we make shape not only their education but also the future of design itself.

6. Conclusion: Foundations for Futures Yet Unknown

Basic design education is at a critical crossroads. While its historical contributions remain valuable and its emphasis on perceptual development, material engagement, and formal understanding retains relevance, the uncritical continuation of narrow modernist pedagogies risks producing designers who are ill-equipped for the complexities of contemporary life. The stakes are not merely academic in nature. As design becomes increasingly implicated in shaping our collective futures—from the products we use to the systems we inhabit, from the technologies we develop to the ecologies we transform—the question of how designers are formed becomes increasingly urgent. Design education that privileges formal optimization over ethical reflection, treats cultural context as decoration rather than substance, and ignores its own historical and political situatedness may inadvertently contribute to the very problems it claims to solve.

As design educators, we bear the responsibility not only to transmit skills but also to shape ways of seeing, thinking, and acting in the world. This shaping process begins in the foundational year. Reimagining basic design as a dynamic, ethical, and complexity-oriented foundation allows it to remain relevant—not as a fixed canon of timeless forms, but as an evolving pedagogical space where students learn to engage thoughtfully with uncertainty, work respectfully across differences, and imagine and enact intentional change in a world that desperately needs it. In doing so, design education can better prepare graduates not only to solve problems but also to participate responsibly in shaping the future. The foundation we build today will determine the future.

Abbreviations

HfG (Ulm)	Hochschule für Gestaltung Ulm
IDC (School of Design)	Industrial Design Centre

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Arun Mascarenhas: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing

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Biography



Arun Mascarenhas works at the intersection of creative practice, pedagogy, and critical inquiry. His career began in 2007 as an assistant toy designer after he graduated as a sculptor with a university gold medal. Subsequently, he assumed the role of designer after his master's degree in contemporary sculpture (2009), a point of departure that signals sustained engagement with the form, materials, and poetics of play. Between 2009 and 2010, he was a visiting faculty member of Sculpture at the College of Art, New Delhi. From 2011 to 2013, he assumed a full-time teaching position in Indian Central Schools (KVS), gaining concrete experience in teaching and pedagogy (drawing and art education). He later held design professor roles at NIFT Kannur and IIT Hyderabad before joining IIT Bombay in 2018, where he actively contributed to design programs, practices, research, policy debates, and pedagogical discourses.