



Pre-Reflection-in-Action: Rethinking Schön's Reflective Practice through the 'Habits of Design

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Abstract

This article examines Schön's positioning of reflective practice in relation to design. Focus is directed in particular to his presentation of the acting-thinking relationship. Questioning this we turn to the work of the philosopher John Dewey, who acted as one of Schön's key inspirational sources. Here, we consider Dewey's presentation of *thought-in-action*, *artistry* and importantly, *habit*. We argue that a wider referencing of this material, most especially the art-habits relationship, holds the potential to expand the Schönian presentation of design, providing the field with a more nuanced modeling of what it means both *to design* and *to become* a designer.

Keywords: Schön, Dewey, Habit, Reflection, Design

Pre-Reflection-in-Action: Rethinking Schön's Reflective Practice through the 'Habits of Design Artistry'

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Introduction

Forty years ago, Donald Schön's *The Reflective Practitioner* provided design with one of its most compelling and, to date, enduring theoretical reference points—the concept of 'reflective practice'¹. Reflective practice offered an alternative to the then-prevailing models of professional action as a form of applied theory. For Schön, rather than applying theory, the expert professional was simultaneously acting-thinking through the complex dynamics of their situation—a process referred to as 'reflection-in-action'. At the same time, they were also gradually refining their practice through careful, attentive ongoing inquiry, enabled by a complimentary 'reflection-on-action'.

As Schön himself acknowledged, the idea of reflective practice and its core terminology (e.g., terms such as 'inquiry' and 'situation') were derived from the work of the classical pragmatist philosopher John Dewey (1859-1952)². Over the years, however, a number of scholars have identified flaws in this Deweyan referencing, with some arguing that reflective practice offers only a narrow, reductive interpretation of Dewey's work. For example, it has been claimed that Schön overlooks Dewey's special characterization of experience³ and downplays his emphasis on the embodied, social nature of action.⁴

Despite such criticisms, the *The Reflective Practitioner* remains a 'cornerstone' text for design⁵, with many authors citing Schön to justify special methodologies or conclusions.⁶ In contrast, in this article, we seek to open up a space in which it becomes possible to relook

¹ Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action*. USA: Basic Books.

² Schön's PhD was on Dewey's theory of inquiry and he described his notion of 'reflective practice' as his own version of Dewey's 'reflective thought', and *The Reflective Practitioner* as his attempt to 'make my own version of Dewey's theory of inquiry'. See Donald A. Schön "The Theory of Inquiry: Dewey's Legacy to Education". *Curriculum Inquiry* 22, no. 2 (1992): 119–139.

³ See e.g., Vasco D'Agnese "The Essential Uncertainty of Thinking: Education and Subject in John Dewey". *Journal of Philosophy of Education* 51, no. 1 (2017): 73–88.; Harvey Shapiro "John Dewey's Reception in 'Schönian' Reflective Practice". *Philosophy of Education* (2010): 311–319.

⁴ Inger Mewburn "Lost in Translation: Reconsidering Reflective Practice and Design Studio Pedagogy". *Arts and Humanities in Higher Education* 11, no. 4 (2012): 363–79. See also Yanow, Dvora, and Haridimos Tsoukas "What Is Reflection-In-Action? A Phenomenological Account". *Journal of Management Studies* 46, no. 8 (2009): 1339–1364.

⁵ Peter Galle "Foundational and Instrumental Design Theory." *Design Issues* 27, no. 4 (2011): 81–94.

⁶ Jordan Beck, and Laureline Chiapello "Schön's Intellectual Legacy: A Citation Analysis of DRS Publications (2010–2016)". *Design Studies* 56:May (2018): 205–224.

at Schön's offer in the context of design. This is not a disavowal of the value of his work but rather a critical examination of the reflective practice concept. We hold that such an examination is important because the analytical concepts we use to study phenomena, in this case design practice, direct our attention and guide our understanding of these phenomena.

In our examination, we will argue that the reflective practice proposal misses powerful ideas in Dewey's work that might enrich and better position our understanding of design in the context of the twenty-first century. Here, we direct focus to Schön's presentation of the acting-thinking relationship and, against this, trace an alternative vision, which takes reference from Dewey's discussions of art as well as his broader concept of habits.

The article will proceed as follows. First, we will examine Schön's positioning of reflective practice and design and, in this, problematize his presentation of the latter, focusing specifically on his understanding of the acting-thinking relationship. From this, we then move to examine Dewey's work directly. Firstly, exploring his distinct approaches to *thought-in-action* and *artistry* and, thereafter, his broad, important concept of *habit*. We then argue that a wider referencing of this material, most especially the art-habits relationship, holds the potential to expand the Schönian presentation of design, providing the field with a more nuanced modeling of what it means both *to* design and to *become* a designer. Lastly, we offer a sketch of what we see to be the potential of a future 'design habits' perspective.

Reflection-in-action and Schön's Concept of Design as a Reflective Conversation with the Situation

In *The Reflective Practitioner*, Schön presented reflection-in-action as a form of 'experimentation' in which acting and thinking are *fully* integrated, with one's 'doing' (i.e., one's means) and one's goals (i.e., one's ends) adjusting to the situational demands as necessary.⁷ Design, in turn, was presented as a particular *pattern* of reflection-in-action.⁸ Selecting a linguistic metaphor, Schön defined it as 'a conversation with the materials of the situation'. This metaphor extended into the detailing of the process itself. For example, we are told that when the designer acts, the 'situation "talks back"'. The claim was that, at its best, this conversation will be 'reflective', with the designer examining their assumptions and strategies.⁹ Here, Schön focuses in on the idea of 'problem setting' where, early on, the designer must convert 'a problematic situation to a problem'. Problem setting, he explains, is central because this is where the designer decides on a focus for the rest of the process. It is 'a process in which, interactively, we *name* the things to which we will attend and *frame* the context in which we will attend to them'.¹⁰

In order to give this proposal proper form, Schön presents the well-known case of a tutorial between the architectural student Petra and her tutor Quist, surfacing the dynamics of the pair's actions-interactions as they explore Petra's proposed plan for a school building.¹¹ The design-as-a-conversation metaphor is threaded through the whole—talking, drawing and the use of spatial actions are seen to come together to form what Schön refers

⁷ Schön, *The Reflective Practitioner*: 68-69.

⁸ Ibid., 268.

⁹ Ibid., 78-79.

¹⁰ Ibid., 40.

¹¹ The case is based on a protocol study conducted by another researcher and essentially functions as a situated discourse analysis.

to as a '*language of designing*'. It is through the use of this language—i.e., by combining talking, drawing and spatial action—that the core process of design experimentation is seen to advance.¹² Here, Quist, as an expert designer, is found to engage in a series of tentative design moves as he seeks to resolve the problematic aspects of Petra's plan. These tentative moves are gradually tested, leading eventually to the adoption of a firm strategy. This moving-testing-adoption is, in turn, positioned as a process of reflecting-in-action on the situation's back-talk.¹³ From here, Schön proceeds to claim that such reflection-in-action can be seen as a form of artistry, a 'performance', which relies on the 'selective management of large amounts of information, [the] ability to spin out long lines of invention and inference, and [the] capacity to hold several ways of looking at things at once'.¹⁴

Despite the apparent neatness of the above, we note a tension between the supposed *immediacy* of the artistry described and inherent *mediation* of conversational metaphor. How is the conversation-with-the-situation immediate and felt? How is it non-immediate and representational? Schön attempts to resolve this predicament by casting reflection-in-action as an 'internal strategy of representation', which allows practitioners to 'describe' the 'intuitive understandings' underpinning their artistry.¹⁵ This however is ultimately unsuccessful as such a proposal is more in line with the modeling of professional action he sought to replace (i.e., practice as applied theory) than the Deweyan alternative he was aiming to trace out with its notional conceptual *integration* of the thought *within* action—with 'internal strategies of representation', acting and thinking remain apart.

There is thus an inherent contradiction in Schön's concept of reflective practice and, within this, his presentation of design. On the one hand, it is notionally grounded in an artistry that is characterized by an *immediacy* of improvisation and creativity, especially in problem setting. On the other hand, it advances only by a process of *representing*, which precludes a proper treatment of the immediate and felt on its own terms.

This demands attention as, in the end, it's a question of how we model design; how we qualify its phenomenological character, giving form not only to the experience of *designing* but also what it means to *be* a designer. The issue here centers on the *relationship* between immediacy of artistry and mediation of representation. Is the immediacy of artistry only meaningful via representation? Or can both be seen to form a non-hierarchical continuity whereby, alongside the representation of reflection, insight may arise through action and take different, non-representational forms?

Schön's work on its own cannot provide an answer here as his foregrounding of reflection and 'internal strategies of representation' institutes a dualist separation of the immediate and the mediated, thought and action. Accordingly, we believe that it is necessary to return to his original source point in Dewey, whose offering can be shown to seamlessly combine thinking, action and, indeed, artistry into direct and meaningful relation.

Thinking-in-Action in Artistry as Embodied and Qualitative

¹² Schön, *The Reflective Practitioner*: 80.

¹³ Ibid., 102-103.

¹⁴ Ibid., 130.

¹⁵ These strategies of description are themselves said to be describable, though Schön acknowledges that there is a 'gap' between artistry and what is described, see Ibid., 276.

Dewey's¹⁶ pragmatism can be distinguished by a deep resistance to all forms of dualism (i.e., binary separations), whether related to the division of subject and object, mind and body, or, indeed, *thought* and *action*. This, of course, links back to Schön's claim regarding the necessary integration of thought and action in the context of reflection-in-action. Dewey however held a distinct understanding of thought—*in*—action, particularly in relation to notions of art and artistry; one which, we believe, diverges markedly from the representation-centric model of the reflection-in-action account above.¹⁷

It begins with the body. For Dewey, rather than a purely mental phenomena, thought was to be understood as being *of* the body, which, in turn, was to be understood as being *of* the environment. In this envired embodiment, we are said to experience things in primarily *qualitative* as opposed to representational terms.¹⁸ The situation we find ourselves in—i.e., the situation in which we are acting—will hold an inherent quality (e.g., calm, fractious), which we as envired, embodied beings will respond to qualitatively (e.g., calmly, cautiously). The meaning of such pervasive guiding qualities 'is felt before it is known'; it is such feelings which give rise to any later abstractive distinctions we become aware of in experience.¹⁹ Thus, thought properly integrated *within* action is a matter of undergoing the immediate unfolding of situational-ideational qualities not *representing*—it is in essence '*pre-reflective*'²⁰.

This links directly to Dewey's understanding of art and artistry. On his account, art was 'a process of doing and making'²¹ centered upon *qualities* and guided by the pursuit of a 'qualitative whole'.²² He contrasted this with strictly intellectual work (e.g., theorizing in science), which was said to deal in *signs* and *symbols* with no intrinsic quality of their own, i.e., words or numbers standing in for qualities. The difference in terms of practice is enormous as artists are said to 'think directly' in terms of *relations* of qualities (i.e., they do not take the detour via words or numbers). Artists' 'unusual sensitivity to the qualities of things' is said to enable one of most 'exacting modes of thought'.²³ This, in turn, was seen to direct their actions,²⁴ with thinking, feeling and doing coming together as one. In other words, for Dewey, artistic action or artistry is guided by *pre-reflective* as opposed to reflective thought or, indeed, any 'internal strategies of representation'.

This gets us some of the way towards the distinct positioning of Deweyan thought and how it relates to action or, indeed, could relate to action via the unique perspective afforded by art and artistic practice. However, to properly understand the thinking-action relationship, we need an analytical concept that can better accommodate the pre-reflective phase of thinking noted above. We suggest Dewey's conceptualization and positioning of *habit* offers an appropriate lens.

¹⁶ The first Classical pragmatist, and Dewey's most critical sources of influence, were Charles Sanders Peirce (1839 - 1914) and William James (1842-1910). Together with George Herbert Mead (1863-1931) Dewey constitutes the second generation. In recent years the social activists and philosophers Jane Adams (1860-1935) and Mary Parker Follett (1868-1933) are also acknowledged as part of the classical pragmatists.

¹⁷ This is not to say that reflection and reflective thought is not a crucial concept within this broader corpus. It undeniably is—we see it positioned as a key reference within important investigations of education, science, art and the character of knowing, to name but a few. However, reflection alone cannot capture the whole of what thought means and, indeed, *is* for Dewey.

¹⁸ John Dewey "Qualitative Thought", in ed. Jo Ann Boydston, *John Dewey, Later Works, 1925-1952, Vol. 5: 1929-1930* (Carbondale, IL: Southern Illinois University Press, 1988): 243-262.

¹⁹ Johnson, Mark. 2015 "The Aesthetics of Embodied Life", in *Aesthetics and the Embodied Mind: Beyond Art Theory and the Cartesian Mind-body Dichotomy*, ed. Alfonsina Scarinzi. Contributions to Phenomenology 73. Dordrecht: Springer Science Business Media.

²⁰ See Thomas M. Alexander *John Dewey's Theory of Art, Experience & Nature: The Horizons of Feeling* (Albany: State University of New York Press, 1987) for a more in-depth discussion of Dewey's understanding of thought as pre-reflective.

²¹ Dewey, *Art as Experience*: 47

²² *Ibid.*, 66

²³ *Ibid.*, 45

²⁴ *Ibid.*, 49

Habits as 'Vital Art'

Though the term 'habit' is not especially prominent in Dewey's key works (e.g., *Logic*, Schön's primary reference), it is, nonetheless, a highly significant concept in his overall corpus.²⁵ In the context of the present article, a particularly useful definition can be found in *Human Nature and Conduct* where we are told that habit can be understood to refer to 'an ability, an art, formed through past experience'.²⁶ This ability or art does not refer to 'mechanical routine' or 'repeating past actions' but, instead to a 'mastery of the conditions which *now* enter into action'.²⁷

As such, to remain relevant, habits cannot stand still; they must evolve. For Dewey, this is managed by an awareness of and responsiveness to what he refers to as 'impulse', which, if acted upon, gives 'new direction' to old habits and, in turn, changes their quality.²⁸ Habits here connect to the *imagination*, which enables a rehearsal of the potential consequences of responding to impulse. In this, we are said to experiment through a process of imaginative deliberation. There is no pausing of action, no 'internal strategies representation', but rather imaginative deliberation is itself a type of action; we play through a change in the specifics of an habitual undertaking while undertaking it.²⁹

Such responsiveness to impulse can itself be seen as a habit, one which is socially engendered by the culture in which we participate. Through it, habit becomes a 'vital art' that gives rise to a form of thought that 'notes obstructions, invents tools, conceives aims, [and] directs technique'.³⁰ Conceived this way, habits become the foundation for all effective, expert action (e.g., in relation to a given practice such as design).³¹

We see this borne out in a series of sketches offered by Dewey.³² For example, we are told that an effective teacher will remain open to the 'emotional and imaginative perception of what he is doing'. Here, action is 'not so fluent as to exclude elements of resistance and inhibition necessary to heightened consciousness.' This is the point at which impulse may intervene to break a failing or ineffective habit. Returning to Schön it is notionally the moment when reflection-in-action occurs too. However, again, it is not primarily a matter of representation and description, it is a matter of imaginative horizons and trajectories of possibility; it is a matter of *qualities*. The quality of any experience is central to Dewey, not only because of its immediate effects, but also because of its influence on later experiences for 'every experience lives on in future experience'.³³

Here we link to the related idea of growth, another key concept within the Deweyan lexicon. In setting upon a certain course, whether to become either as Dewey suggests a 'teacher, lawyer, physician, [...] stockbroker' or, as we would have it, a designer, one

²⁵ This is most apparent in relation to his educational work and his ethics. It is also a critical concept in pragmatism generally, notably the work of C. S. Peirce and William James.

²⁶ John Dewey, ed. Jo Ann Boydston, *John Dewey, The Middle Works, 1899-1924, Vol. 14: 1922, Human Nature and Conduct*, (Carbondale, IL: The University of Southern Illinois Press, 2008): 48.

²⁷ *Ibid.*

²⁸ *Ibid.*, 67.

²⁹ *Ibid.*, 133.

³⁰ *Ibid.*, 118.

³¹ Michael D. Cohen "Reading Dewey: Reflections on the Study of Routine." *Organization Studies* 28, no. 5 (2007): 773-786.

³² These appear mostly in *Art as Experience* and in *A Quest for Certainty*. It is worth noting that these glimpsed practitioners-in-action align closely to Schön's later reflective practitioner archetype. For example, in one instance, we are introduced to a scenario in which a physician is tending to a patient. They do not deal with the raw sense data as they examine their patient, i.e., noting symptoms in isolation; rather the experience is taken in as a 'whole'. Their knowledge is situated. They move through a series of ideas in order to arrive at a final judgment. See John Dewey, ed. Jo Ann Boydston, *The Later Works, 1925-1952, Vol. 4: 1929, The Quest for Certainty*, (Carbondale, IL: The University of Southern Illinois Press, 2008): 139.

³³ John Dewey, *Experience and Education* (New York: Simon & Schuster, 1938): 27.

renders oneself 'more sensitive and responsive to certain conditions'.³⁴ We are set along a path of development which, if successfully pursued, lines up as a process of *continuity* in which artful ability advances through a habitual looping. Here, impulse appropriately managed leads to imaginative deliberation, which, in turn, leads to reconstruction, i.e., new and better habits, a reformed practice. Habits thus become historically-bound, positive and expansive moving outwards.

Having completed our tracing of Dewey's work on thought, artistry and habit we will now turn to consider how all this might be drawn together in order to respond to the opening problematic regarding whether we might model design in relation to artistry (i.e., immediacy) and, in this, enfold representation (i.e., the mediated), as opposed to having the two split apart. In other words, can we link what we now term the 'pre-reflective' to the reflective?

The Habits of Design Artistry

Through Dewey, we have now traced a grand arc linking up the ideas of: pre-reflective thought as primarily a matter of embodiment and qualities; art as founded upon a special sensitivity to qualities; qualities as a notional guide to artistic action or artistry; and, critically with regard to the thought-action relationship, habits as consolidation of artful ability developed through emotional-imaginative perception and deliberation, which is refined over time, forming a continuity that, in turn, leads to growth. It is our proposal that an appropriate modeling of design activity, one which seeks to meaningfully integrate thinking *within* action without separation, would bear all of this out.

Here we suggest that conceiving of a 'design artistry' via habit offers a means by which such a model can be achieved. Here, because thinking-feeling-doing come together as one in artistry, design can be seen as primarily grounded in the *immediacy* of improvisation and creativity. Habit, in this context, provides a means for the pre-reflective to be accommodated next to a progressive understanding of action, i.e., an understanding which enfolds development over time. Designers who apply habit-as-a-vital-art (i.e., engage in emotional-imaginative perception and deliberation while practicing) will *grow* as practitioners.

In seeking to give form to a notional design artistry via the habit concept, we propose that such an artistry be understood as relying on habits of thought, which seamlessly draws together *pre-reflective thought* (as per Deweyan artistry) with reflective thought to form a continuity. Here, through habit, the pre-reflective can be seen to both ground and, crucially, *progress* artistry. Next to this, there is the complementary mode of reflective thought (as per Schön's reflection-in-action). Here, we readily acknowledge that designers will often think and, of course, talk in representational terms. Thus, the practice of design can be seen as regularly involving conversation (with one's self and others). We do not, however, believe it *is*, first and foremost, *a* conversation.

Leading on from this, we propose two key interweaving habits ground the pre-reflective-reflective coupling; habits of perception and habits of the imagination.

Habits of perception relate to one's *perspective*. For Dewey, artistic perception entails attending to qualities *in relation* to each other (as opposed to focusing on parts in isolation).³⁵ Here, whether in education or beyond, designers must work to continuously

³⁴ Dewey, John, ed. Jo Ann Boydston, *John Dewey, The Later Works, 1925-1952, Vol. 12: 1938-1939, Experience and Education, Freedom and Culture, Theory of Valuation, and Essays*, (Carbondale, IL: The University of Southern Illinois Press, 2008): 20.

³⁵ Dewey, *Art as Experience*.

hone their qualitative sensitivity by actively paying attention to the relational aspects of experience and values at play therein.³⁶ In practice, common techniques to support this might include embodied activities such as sketching and modeling, which draw continual reference from the surrounding environment.

Sitting beside the idea of habits of perception as a matter of perspective, *habits of imagination* are *prospective*, relating to a capacity to develop new meanings within a process of deliberation (as noted above). For Dewey, imagination pervades moments of potentiality. Imaginative activity, he claimed, relied on sense, emotion and meaning coming together to form something new.³⁷ As outcomes cannot be known in advance, one must here submit to uncertainty. Designers learn to handle uncertainty by applying techniques which focus attention in the present and offer a sense of order, e.g., prototyping. Over time, the application of such techniques can be seen to support the development of an ‘adventurous attitude’ wherein an awareness of and responsiveness to ‘impulse’ can be nurtured (e.g., by noting when a particular strategy is unsuccessful and testing another). This, in turn, will lead of course to the eventual development of habit-as-a-vital-art (see Figure 1).

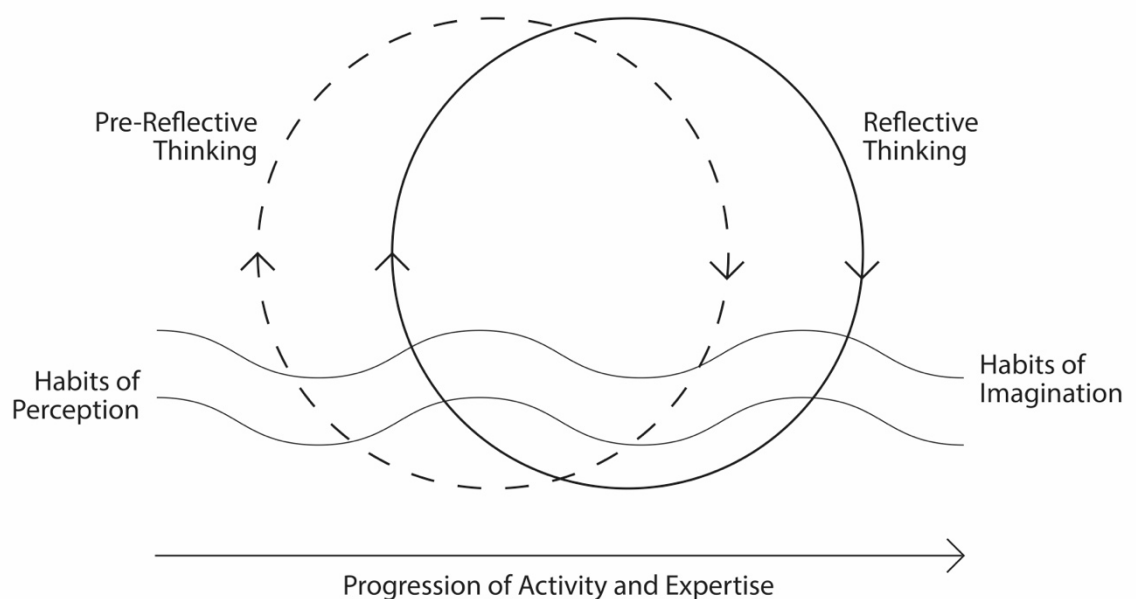


Figure 1. The interrelationship of reflective, pre-reflective thinking and habits (Brian Dixon).

To illustrate how these habits play out in design practice we now turn to consider a short vignette which will allow us to gain a sense of the potential applicability of the habits concept as a means of understanding the process of being (and becoming) a designer.

Pre-Reflection-in-Action: Sketching Silently Together

³⁶ See, e.g., Ariana Amacker, and Anna Rylander Eklund “Arts-Based Techniques in Process Research”, in Barbara Simpson and Line Revsbaek, eds. *Doing Process Research in Organizations* (Oxford, UK: Oxford University Press, 2022): 39–58.

³⁷ Dewey, *Art as Experience*: 267

The following description is of a professional design studio in the early phases of a project for a client.³⁸ The objective of the project was to develop design concepts for a home technology product.

The situation. *As per their usual practice, the project manager suggests they have a first sketching session where they just sit and sketch together. His brief is deliberately vague to allow the designers to take unexpected directions. The purpose of the session is to come up with design ideas that they may take forward later on in the process. The five designers involved in the session sit down around a large oval table and immediately start sketching. Everybody works individually on their own sketches. The atmosphere is calm and relaxed, pleasant, yet people are concentrated, focused on their task. They sometimes talk, but rarely make explicit comments on each other's sketches, avoiding negative comments or offering advice to other designers. The talking is much more general, sometimes related to the project context or the product, sometimes taking the character of social talk.*

There are of course many differences between this case and Petra and Quist. While sketching is a central activity in both— it allows for the communication and progression of design ideas—the participants in this case clearly hold different aims; they are *generating* ideas, not *reviewing* them. They also hold an equal status and role, i.e., there are no hierarchical relationships at play. Equally, unlike the Petra and Quist case, here was very little *verbal dialogue*. Indeed, there was almost no talking and rarely, if at all, with reference to the sketches.

In follow up interviews, the designers explained that while appearing outwardly calm, they felt a predominant sense of ‘chaos’ and ‘anxiety’. This, they noted, was inevitable in such an early phase of a project when there are no methods to hang on to in order to ‘come up with an idea’. However, the act of sketching, they explained, helped them focus and stay in the present moment. As a result, they were able to attend to the pervasive quality of the situation, *integrating* thought and action as they sensed and intuited their way forward through sketching; ‘letting the subconscious do its work’ as one designer put it. This also related to their lack of dialogue.

In terms of the enactment of habits then, we can say that, unlike Schön’s presentation of the Petra and Quist’s review situation, this case centers upon *pre-reflective thinking*, i.e., the non-representational modes of engagement underlying our design artistry proposal of the last section. Here, the designers are thinking-feeling-doing through their sketching; they are not, on their own account, relying on any internal strategies of representation as they sketch. This, in turn, points to their underpinning habits of perception. Their immersion in the act of sketching means that their focus was predominantly directed towards the qualitative and immediate. Evidence of habits of imagination emerge as the designers note their feelings of the chaos and anxiety and how this was overcome through sketching. Sense, emotion and meaning are here acting as guides as they seek to come up with an idea in sketching. A final crucial point must also be

³⁸ The description is constructed by one of the authors from field notes from a case study.

made in relation to the *shared* aspect of this described activity. This is a collective event. Though individuals may be sketching they are doing so together by agreement, within the context of a shared task (i.e., early idea generation for a home technology product). Their habits are socially situated and socially engendered (e.g., via education and/or prior professional experience). As such, in their sketching, participants can be seen as *sustaining* a particular *culture* of design habits.

In order to contextualize the above and draw the whole together, we now move to close by offering a sketch of what we see to be the potential of a future ‘design habits’ perspective.

Design Habits: Rethinking How Designers Think in Action through the Arc of their Careers

Since the 1980s, Schön’s reflective practice proposals have provided the field of design with a paradigm which it can recognize, one grounded in the complex situational realities of practice as opposed to abstract theory. In doing so, Schön not only offered a powerful alternative to notions of practice-as-applied-theory, but also established a firm point of connection between design studies and the work of John Dewey. This connection stands as a gift, one which scholars continue to draw on as they explore the multifold dimensions of being and becoming a designer.

As noted at the opening, the argument presented here is not positioned as a disavowal of the general value of Schön’s work, but as a critical examination of the structuring of his reflective practice concept. Our attention was directed, in particular, to Schön’s definition of design as a conversation-with-the-situation and the *representational* focus this implies. Such a focus, we argued, prevented a proper treatment of the immediate and felt on their own terms and resulted in a narrow modeling of design. By returning to Dewey on pre-reflective thought, artistry and habit we have sought to build outwards from what was originally achieved³⁹. The outcome is a proposal for a model of design artistry linked to *habits*. Artistry, in this case, is directed activity, relying on a deep sensitivity to qualities and aiming towards holism. Next to this, habits ground the qualitative sensitivity and action of artistry, at the same time as giving form to the culturally-bound process of emotional-imaginative perception and deliberation that allows for long-term growth, i.e., habits-as-a-vital-art.

As has been outlined, this proposed model (see Figure 1) is based on a cycle which integrates pre-reflective thought alongside reflective thought, with the interweaving habits of perception and imagination grounding the whole. The key point here is pre-reflective-reflective continuity. Such a continuity honors the felt-immediacy upon which all ‘reflection’ is necessarily based. A focus on *representing-as-thinking* cedes to a focus on the wholeness of experience. Following on, design is thus recast as an *embodied, performative* and *social* process, where qualities, activities and cultures are central reference points. Equally, the necessary temporality of design expertise, i.e., its long-term processual character, opens up as the past-present-future of being and becoming of the designer are seen to form a continuum via habitual action.

³⁹ In the last 30 years, cognitive scientists have validated Dewey’s ideas of ‘pre-reflective’ thinking as well as its critical role in inquiry and creative practice. For example, see Mark Johnson *The Meaning of the Body - Aesthetics of Human Understanding* (Chicago: The University of Chicago Press, 2007). Johnson explores the connection between Dewey’s original ideas on qualitative thought as embodied and imaginative and contemporary cognitive science. See Elliot W. Eisner *The Arts and the Creation of Mind*. (New Haven, CT: Yale University Press, 2002). Eisner outlines how Dewey’s qualitative thought is supported by cognitive science in the specific context of arts education. See also Stephen T. Asma *The Evolution of Imagination*. Chicago: Chicago University Press, 2017) for an account of imagination as improvisational, embodied, and social as suggested by Dewey.

All of this, in turn, leads to a number of implications for design research, practice, and education. Most immediately, there is now an opportunity to explore practice from the perspective of habits, drawing in the ideas of artistry, pre-reflection, perception and imagination, as well as Schönian reflection. In the context of research, the aim would be to trace qualities and notions of qualitative sensitivity across situations and over time, noting the patterns and forms of design artistry as they emerge. Methodologically, this demands a deep register of the direct, lived dimensions of practice, as well as a willingness to explore extended trajectories, looking not just to the singular situation but to extended experience, meaningfully locating past-present-futures within cultures. Inspiration might be drawn from established qualitative approaches such as ethnographic or auto-ethnographic methods. Equally, an immersive form of participatory action research might aim to advance the habits of practice from within. Either way, the point is to surface a sense of design artistry in its own terms, following it wherever it goes.

In the context of practice, we propose that habits may afford novel approaches in the areas of design advocacy, co-creation and behavior change. With regard to design advocacy, there is an opportunity to centralize the concept of habits when articulating the value of design expertise to non-design audiences. Here, reference to the coupling of the embodied-performative-social with extended experience would allow for an avoidance of any notions of formal method or systematic action, while still offering a useful framework by which the complexities of practice may be understood. In relation to co-creation, the habits lens can provide an opportunity to reinterpret the social, non-expert aspect of practice. Here, rather than defining co-creation in relation to the application of particular methods or techniques in particular situations, co-creation can be understood as an extended learning process wherein particular groups are introduced to design habits through situated, embodied action—the group gains an insight into design artistry as they engage with co-creative approaches.⁴⁰ Finally, regarding behavior change, there is an opportunity to scope a novel position in relation to how human behavior can be both understood and designed for. In this vein, habit's focus on the embodied-performative-social as well as the temporal, offers a positive alternative to the otherwise depersonalized, functional horizon of behavioral science—a horizon which is increasingly referenced within practice.

In the context of education, lastly, the habits perspective may allow for a vigorous repositioning of traditional pedagogies, most especially in relation to the studio. By centering habits, it becomes possible to conceive of the pedagogic design studio not simply as a creative environment but also as a space in which the habits of design artistry are both enacted and developed. On this account, the studio culture's shared values and norms,⁴¹ as expressed through project work and critiques, can be seen to progress students' habitual knowing over time. This 'culture of design habits' idea, noted above in relation to the vignette, equally applies to professional contexts, where groups come together in shared activity or in relation to shared agendas. Habit also opens a longer-term pedagogic vista; with a habit lens, timelines would extend beyond periods of academic enrollment and point instead towards the attainment of an eventual design expertise, potentially many years

⁴⁰ There is a clear parallel with this proposal and the theory of communities of practice, which is also informed by pragmatism and the concept of habits. See, Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (Cambridge: Cambridge University Press, 1991).

⁴¹ Anna Rylander Eklund, Ulises Navarro Aguiar, and Ariana Amacker "Design Thinking as Sensemaking: Developing a Pragmatist Theory of Practice to (Re)Introduce Sensibility." *Journal of Product Innovation Management* 39, no. 1, (2022): 24–43.

hence. The ultimate goal thus becomes an engendering of habit-as-a-vital-art, ensuring that design learners learn how to learn habitually.

In the end, held together across research, practice and education, it is possible to claim that a habits of design artistry model would ultimately establish a new way of seeing in design. This new way of seeing would offer a pathway out of the mediated-versus-immediate quandary noted at the opening. The prize for design in this instance is a richer, more confident positioning, one which doesn't complicate practice by letting practice way. Any loss which might result from a rebalancing of the emphasis given to representational strategies, is more than compensated for in the honoring of the 'improvisation' and 'vital creativity' so central to Schön's original reflective practice proposal.⁴² After all, on reflection, practice can only be known in practice.

⁴² See back cover of *The Reflective Practitioner*.

