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Documentation as a practice-led research tool for reflection on experiential knowledge

Abstract

Practice-led research has been under debate for three decades. One of its major issues concerns how the researcher, who is also the practitioner, documents and reflects on her creative process in relation to a research topic. This article reviews and discusses the processes of documentation and reflection in practice-led research through three cases of doctoral dissertations that were completed at Aalto University in Finland. Through these cases, the article examines the role that the documentation and reflection of creative processes and products performs in these studies. The article concludes that documentation in the context of practice-led research functions as conscious reflection on and in action. Any means of documentation, for example, diary writing, photographing or sketching, can serve as a mode of reflection.

Keywords: case studies, documentation, experiential knowledge, practice-led research, reflection.

Introduction

In the past three decades, practicing artists and designers have adopted an innovative position as practitioner-researchers in academia by conducting academic research through their own practice. The notion of *research through practice* can be traced back to the separation made by Christopher Frayling (1993), one of the early contributors to examine the role of art and design, in relation to research practices. He divides design research into three different categories, depending on the focus and mode of the task at hand. He uses the term *research into art and design* to imply that art and design is the subject of inquiry and a phenomenon to be studied from the outside. The term *research through art and design* proposes that creative production can be understood as a research method. Through the term *research for art and design*, he refers to a kind of research in which the end product is an artefact, which embodies the thinking that leads to its making (Frayling, 1993, p. 5; see also, Scrivener, 2009, p. 71). The development of knowledge partly through the creation of artefacts has added a new dimension to design research, as the practitioner-researcher creates an artefact and also documents, contextualises and interprets it along with the process of making it.

This process of creation allows practitioners to elicit reflection in and on their working processes (Schön, 1991), which can be considered as new knowledge gained in action. According to designer Owain Pedgley (2007), the main motivation of these practitioners is to “elicit and communicate new knowledge and theory originating from their own design practice. Its pursuance of course requires that the researcher is also a skilled designer and is prepared to combine the two roles of scholar and designer” (p. 463). As design researcher Mark Evans (2010) points out, the researcher’s practice employed in a research project can provide rich contextual data that would not be possible to collect using any other means.

This form of acquiring knowledge sheds light on the development of art and design research to include the traditional basis of the field that is the creative practice, with a focus on the sources of knowledge—the making process and the maker. Research with the inclusion

of creative practice can be interchangeably labelled as *practice-based*, *practice-led* and *artistic research*. In this article, we use *practice-led research* as an umbrella term that includes on-going discussions around these different terms. The research approach labelled with the various terms has evolved, been discussed and criticised by a broad international academic and artistic community, including practitioners, educators and theorists (Hannula, Suoranta, & Vaden, 2005; Nimkulrat & O’Riley, 2009; Elkins, 2009; Biggs & Karlson, 2011; Candy & Edmonds, 2011; Wilson & van Ruiten, 2014). The core concept of this research approach is the relationship between the researcher, who is simultaneously an artist or designer, with the artistic process and the production of artefacts as the target of the reflection.

Design researcher Ilpo Koskinen (2009, p. 11) reminds us that research in social and so-called ‘hard’ sciences has shown for more than 40 years that its basis is practice. In this regard, the notion of *practice-led* or *artistic research* is not new—the new element is rather the connection between the art practice and the university institution. What is essential concerning this article is that the result of this connection is a new actor to appear on the stage—a *practitioner who reflects upon her own practice and systematically documents it within academia*. Stephen Scrivener, who has discussed the relationship between art and design practice and research in several writings, argues for design research wherein research and design are coupled, and he calls the foundation for such practice *research-in-design* (Scrivener, 2000, p. 392). This corresponds to social scientist Donald Schön’s notion of reflective practitioners (Schön, 1991). According to Schön, our knowing is in action, often in a tacit form, and implicit in our patterns of action. *Reflection-in-action* may indicate a process in which practitioners encounter an unusual situation and have to take a different course of action from that which they usually do or have originally planned (Schön, 1991, pp. 128–136). On the other hand, *reflection-on-action* may include an analytical process in which practitioners reflect on their thinking, actions and feelings in connection to particular events in their professional practice (Schön, 1991, pp. 275–283).

Scrivener (2000, p. 392) emphasises that in each *research-in-design* project, systematic documentation and reflection-in-action play a crucial role as they support the practitioner’s critical thinking and bring greater objectivity to the whole project. Critical thinking and objectivity in the practitioner’s actions may be called *critical subjectivity*, the term used in action research. This can be explained as follows:

We do not suppress our primary subjective experience, that we accept that our knowing is from a perspective; it also means that we are aware of that perspective and of its bias, and we articulate it in our communications. Critical subjectivity involves a self-reflexive attention to the ground on which one is standing (Reason, 1994, pp. 326–327).

Scrivener (2000, p. 392) also stresses the importance of the final reflection, or *reflection-on-action* in Schön’s terminology, and that it should reflect not only on the project as a whole in relation to the issues explored but also on the goals attained and the reflection-in-action and the practice itself. The reflection conducted at different stages of the project may provide the primary material for communicating and sharing the experiences related to the project. Scrivener (2002, p. 25) stresses an important aspect regarding documentation, which, according to him, can assist in capturing the experiential knowledge in the creative process, so that what the practitioner learns from within her practice becomes explicit, accessible and communicable.

Nigel Cross (1982, pp. 223–335, 1999, pp. 5–6) discusses knowledge intertwined in the practice itself. He argues that the knowledge of design resides in people, processes and products. Part of this knowledge is inherent in the activity of designing and can be gained by engaging in and reflecting on that very activity. According to Cross (2001, pp. 54–55),

knowledge also resides in the artefacts themselves, in their form and materials. Some of this knowledge is also inherent in the process of manufacturing the artefacts, gained through making and reflecting upon the making of these artefacts. Thus, the triangle of maker-making-artefact seems to provide a useful means through which it is possible to approach practitioners' ways of knowing (Mäkelä & Routarinne, 2006, pp. 21–22; Pedgley, 2007; Nimkulrat, 2012; Ings, 2014).

This article discusses the role of documentation as it is related to reflection in practice-led research, exploring the possibilities of capturing and understanding experiential knowledge. The article aims to illuminate how documentation can (1) assist in communicating and sharing experiences in the creative process as reflected by the practitioner-researcher; (2) portray the practitioner's ways of knowing through the making of artefacts and the artefacts themselves; and (3) function as a research tool for capturing the practitioner-researcher's reflection *on* and *in* action. The article is based on three case studies of published doctoral research projects completed at the Aalto University School of Arts, Design and Architecture, Finland. At Aalto, formerly named University of Art and Design, Helsinki, the Doctor of Arts degree has been offered since 1983, and the opportunity to create products as part of the dissertation began in 1992 (Ryynänen, 1999, p. 13). This means that one part of the dissertation can be in the form of art or design production. As all the studies undergo a scientific evaluation process, the written component of the study is therefore expected to meet academic requirements.

The article adopts cognitive scientist Robert K. Yin's (2003) case study methodology, because it focuses on answering a number of 'how' questions about documentation, but it cannot manipulate the behaviour of the practitioners in their creative processes that are documented. According to Yin (2003, pp. 9–13), a case study strategy can be used when (1) a study asks 'how' and 'why' questions; (2) the researcher cannot manipulate the behaviour of the participants in the study; (3) contextual conditions are relevant to the phenomenon under study; or (4) the boundaries between the phenomenon and context are not clear. The multiple-case design (Yin, 2003, pp. 46–54) was particularly called for due to its potential to compare and contrast ways in which documentation is related to reflection in various practice-led research projects. In this way, we are able to provide three different insights into the individual creative process. In this article, a comparison is made between the three cases that consist of creative processes and artefacts—it does not address the analysis of the cases' aesthetics but their social organisation (Becker, 1982, pp. x–xi).

The three selected cases are among the first practice-led doctoral research projects completed in their respective fields of ceramics, glass and textiles in Finland. As Finland is one of the pioneers in practice-led research in art and design, the studies are also among the first studies in their fields internationally. The next section will examine the three cases in order to gather insights and understand the role of documentation as a research tool for reflection on the creative processes conducted and the resulting artefacts produced in the field of practice-led research. As each of the cases includes both creative processes and exhibitions, we will focus on the creative process and ways in which each practitioner-researcher documented, reflected and contextualised her own creative process. The first and the third cases are of the authors themselves and we are thus able to provide descriptions of their steps and core ideas.

Case Studies

Case 1: Maarit Mäkelä—Clay Pictures as Female Representations

Ceramist Maarit Mäkelä graduated as a Doctor of Arts in 2003 with her study *Memories on Clay: Representations of the Subjective Creation Process and Gender* (Mäkelä, 2003). The practical methods employed in this study were exhibitions and the creative working processes

related to them. The research was carried out in the form of three exhibitions entitled *Mirrorplay I-III*, which were on display at the Gallery Laterna Magica, Helsinki, in 1996, 1997 and 2000 (Figure 1). The female body is the theme of the artworks, all of which were made during the research process, as well as the main focus of the theoretical discussion used for contextualising and making sense of these artefacts.



Figure 1. Exhibition *Mirrorplay III* at Gallery Laterna Magica in 2000. Photograph: Rauno Träskelin.

In this study, Mäkelä connected art with research by following certain routes that informed her experience as a female artist and as a feminist researcher. Thus, the speaker in this study is the artist-researcher who reflected on and reviewed her intuitive work process. The research proceeded as a dialogue between ceramic art and feminist research (Mäkelä, 2003; 2006). The inquiry began with making the artefacts through hands-on actions with clay, which were then arranged in the form of an exhibition. The artistic making process and research process were repeated three times.

To be able to reflect on the overall process, Mäkelä utilised two means of documentation. First, a professional photographer documented the exhibitions and each exhibit. Second, she kept working diaries throughout the creative process especially carried out as part of her study, wherein she collected various textual and visual materials related to the topic. In some parts of the diary, she developed her ideas through sketching. She also reflected on her creative process in the diaries by making notes, clarifying her thoughts and developing her ideas in a written format. In her case, the content of the notes is connected closely to the idea of self-reflection, a mode of reflection wherein the author scrutinises and clarifies her thoughts and conceptions related to her own actions through writing (see, for example, Anttila, 2006, p. 78). While working in the studio, Mäkelä noted the following:

Physical work has begun—apparently with a slow process during which I take the material into my possession both physically and mentally. The process has a meaning like a ritual... I use as simple tools as possible and touch the material a lot... This is a rite, an initiation rite during which I move from the level of (logical) thinking to an intuitive and physical mode of working (Extract from working diary, 9 January 1996; see also, Mäkelä, 1997, p. 64).

In Mäkelä's case, all the documentation served as data for the written dissertation that consists of three main chapters, each focusing on one of the three exhibitions and creative processes related to that exhibition (Figure 2).

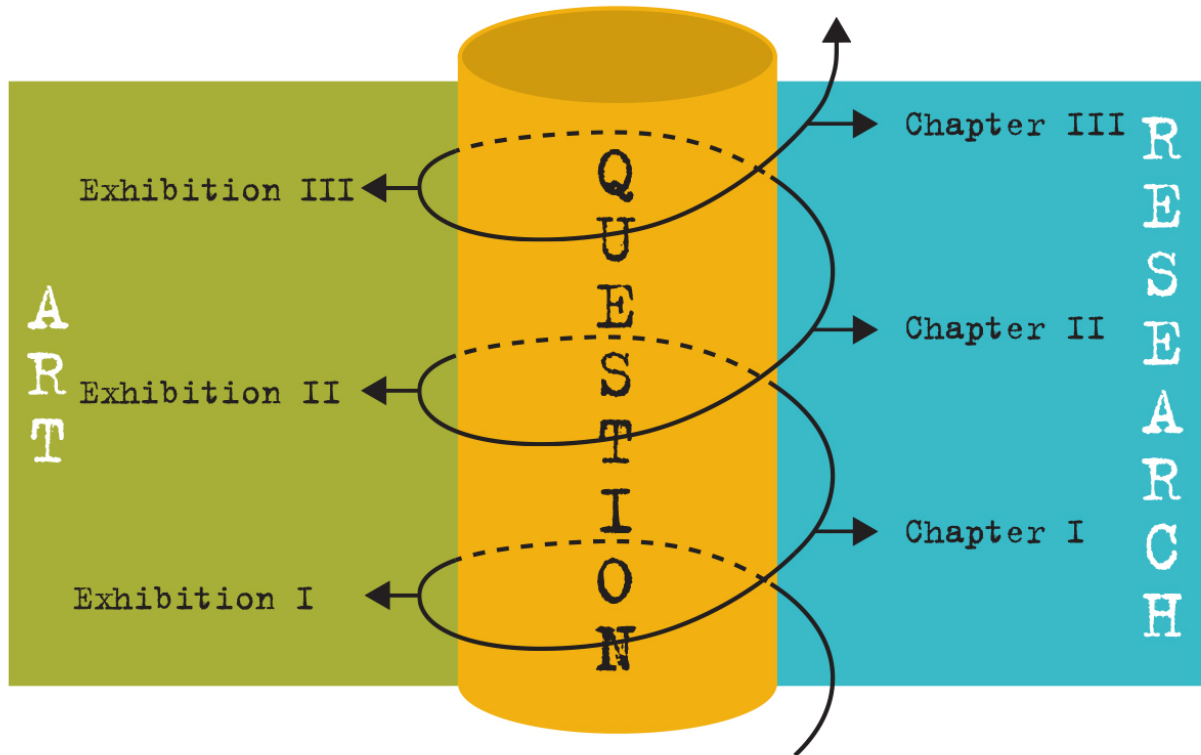


Figure 2. Iterations of the artistic and research periods (Mäkelä, 2006, p. 73). The diagram shows the interaction between art and research in Mäkelä's (2003) dissertation.

During the study, the artist-researcher updated cultural representations of femininity. By playing with existing female representations and printing them on clay, Mäkelä brought them into a new context and participated in their reproduction and re-contextualisation. For example, in the first exhibition, she interrogated the experience of femininity by using the post-modern device of loaned images. In the series of clay pictures entitled *Monthly Bleeding* (Figure 3), a photograph of Marilyn Monroe is used as a starting point of the work (Green, 1956).

When applied to the rough earthenware, the sister figures of Monroe continued the complex representations of femininity as the outlines of her body were strengthened with rugged, scratchy marks that were carved into the wet ceramic surface. The smooth feminine shapes thus acquired new lines, which were partly atop the original lines and partly pushed under the original ones. Even though its serial nature was one of the central features of this work, each plate was also meaningful on its own, embodying different representations of femininity.

According to art historian Griselda Pollock (1988, p. 6), representation bears the wider meaning of analysing something or some phenomenon, giving it meaning and making it understandable in relation to other representations. As a concept, representation emphasises the meaning-producing nature of saying, presenting, thinking and knowing. When understood in this way, the ceramic representations of women produced during the research process have a central meaning—not only do these works preserve the female experience but also analyse and comment on it. In this way, personal experience has been woven in as an integral part of the study.



Figure 3. Mäkelä's work *Monthly Bleeding*, 1996, silkscreen and painting on Finnish earthenware. Photograph: Rauno Träskelin.

Thus, the artistic production in Mäkelä's case operated as a reflector with which she was able to explore her theme of femininity in depth. The result of this process was clay pictures, which were then shared via three exhibitions. The documentation consisted of photographs taken of the exhibitions and each exhibited artwork. The related creative processes were also reflected in the working diary. The final reflection took place in the pages of the dissertation, when all these documents served as data for further discussing and contextualising the topic with the aid of relevant literature.

Case 2: Outi Turpeinen—Installations as Test Spaces

The glass artist Outi Turpeinen graduated as a Doctor of Arts with her thesis *A Meaningful Museum Object: Critical Visuality in Cultural History Museum Exhibitions* (Turpeinen, 2005). Her study consists of three exhibitions and a written thesis, which examines the relationship between a cultural history museum exhibition and the objects on display, especially the formation of the meaning of the exhibition.

For her study, Turpeinen visited several cultural history museums and analysed their exhibitions. Some of these museums displayed exhibitions presented in collaboration with artists. In these cases, Turpeinen examined how artists changed the exhibition design and how this brought new meaning to the museum objects. Based on these experiences and studies, she created sculptural glass works as fictional museum objects and used them to construct three installations in the museum context. All the installations were exhibited in Finland: *Imprisoned Setting* at the Design Museum, Helsinki, 2000; *Memories from a Curiosity Cabinet* at the Vantaa Art Museum, 2001; and *A British Noblewoman's Collection from 19th Century India* at the Kiasma Museum of Contemporary Art, Helsinki, 2003.

In Turpeinen's case, documentation is related to the study in two phases. The first took place while visiting several museums of cultural history. During these visits, she documented the exhibitions through photographs and maintaining a diary of notes and sketches (Figure 4).

This kind of experimenting and documenting went on during the whole study process. For Schön (1991, pp. 80–81), the verbal and non-verbal expression is analogous—drawing and talking are parallel ways of designing and together make up what he calls the ‘language of design’. The drawing reveals qualities and relations unimagined beforehand and, thus, the movements of the hands are able to function as experiments. Therefore, the graphic world of the sketchpad can also function as a medium of *reflection-in-action* (Schön, 1991, pp. 157). Accordingly, the sketches Turpeinen made while visiting the museums collectively formed a visual reflection on the theme being explored.



Figure 4. Outi Turpeinen makes notes in her diary at the Thalang Museum, Phuket, Thailand, December 2003. Photograph: Rauno Rönning.

Physicist and scientific historian Peter Galison (2002, pp. 300–308) discusses the role of visualisation in discovery. According to him, only pictures can develop within us, whereas the intuition needs to proceed towards abstraction. Pictures act as steppingstones along the path to real knowledge, which is supported by intuition. In this light, Turpeinen’s visits and documentation in the museums played a central role, serving as an expression of intuitive knowledge, background and inspiration for her installations. Through them, she reflected on and developed certain themes and ideas further and, in this way, tested her ‘research findings’ in concrete spatial constructions. For example, the sketches and diary notes made in the British Museum (Figure 5) were used as a starting point when making the fictional museum artefact *Stupa* (Figure 6) for her third installation.

The installations were exhibited in three art museums, where they functioned concurrently as test spaces for the study that enabled Turpeinen to experiment and develop her research themes further. The second phase of documentation took place in relation to each artistic process of setting up each installation. In this phase, Turpeinen photographed the final

installations and their spatial construction (Figures 7 and 8), individual exhibits and the process of setting up the exhibitions.



Figures 5 and 6. Left: Outi Turpeinen's sketches made in the British Museum; Right: her fictional museum artefact *Stupa* in her installation at the Kiasma Art Museum, 2003. Photographs: Otto Karvonen and Minna Kurjenluoma.



Figures 7 and 8. The worksite hut functioned as the construction of the installation *Memories from a Curiosity Cabinet* at the Vantaa Art Museum in 2001. Left: Outside the cabinet; Right: Inside the cabinet. Photographs: Jefynne Gimbel.

The documentation facilitated Turpeinen's reflection and analysis of the test spaces after the event had ended. Thus, after the 'test', she was able to contextualise her artistic process and discuss her 'findings' with the help of relevant literature. In this way, the related artistic process functioned as one of her main research methods and, on the other hand, also as the result of the research. Turpeinen visualised her research process in the form of an amoeba—an interplay that consisted of different activities such as literature survey, museum visits and her own artistic production, from which experiential knowledge can be achieved (Figure 9). According to Turpeinen (2005, p. 40), the aim of this kind of practice-led study does not lie in one singular or objective truth. Rather, it is to open up the creative process related to the study and analyse the process of meaning making.

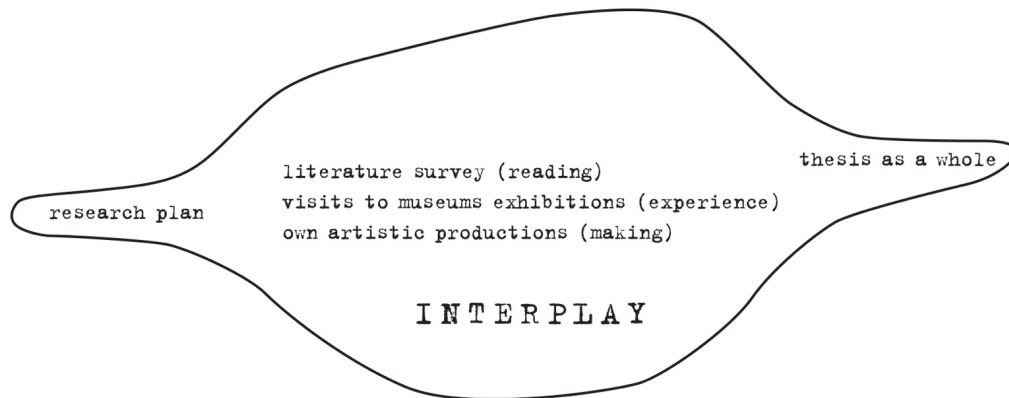


Figure 9. Interplay of research activities in Turpeinen's dissertation (2005). The diagram shows how a research process evolves from a research question to diverse activities, resulting in a coherent thesis (Turpeinen, 2006, p. 119).



Figure 10. Exhibition entitled *Seeing Paper* at the Gallery Johan S. in Helsinki in 2005. Photograph: Maj Lundahl.

Case 3: Nithikul Nimkulrat—Paper as Expressive Material

The textile artist Nithikul Nimkulrat received her Doctor of Arts Degree in 2009 with her dissertation entitled *Paperness: Expressive Material in Textile Art from an Artist's Viewpoint* (Nimkulrat, 2009). The thesis aims at understanding the influence of a physical material on the formation of the artist's ideas during the creative process. The primary material used in this study is paper string, which was used to create two art series and exhibitions—*Seeing Paper* (2005) and *Paper World* (2007; Figures 10 and 11). These exhibitions together with a written thesis were the combined result of the research. The creation of artworks was the main

vehicle for the research, whose structure was divided based on the periods of the art productions and the exhibitions into five phases (Figure 12).



Figure 11. Exhibition entitled *Paper World* at the Gallery Gjutars in Vantaa in 2007. Photograph: Phakphum Julnipitawong.

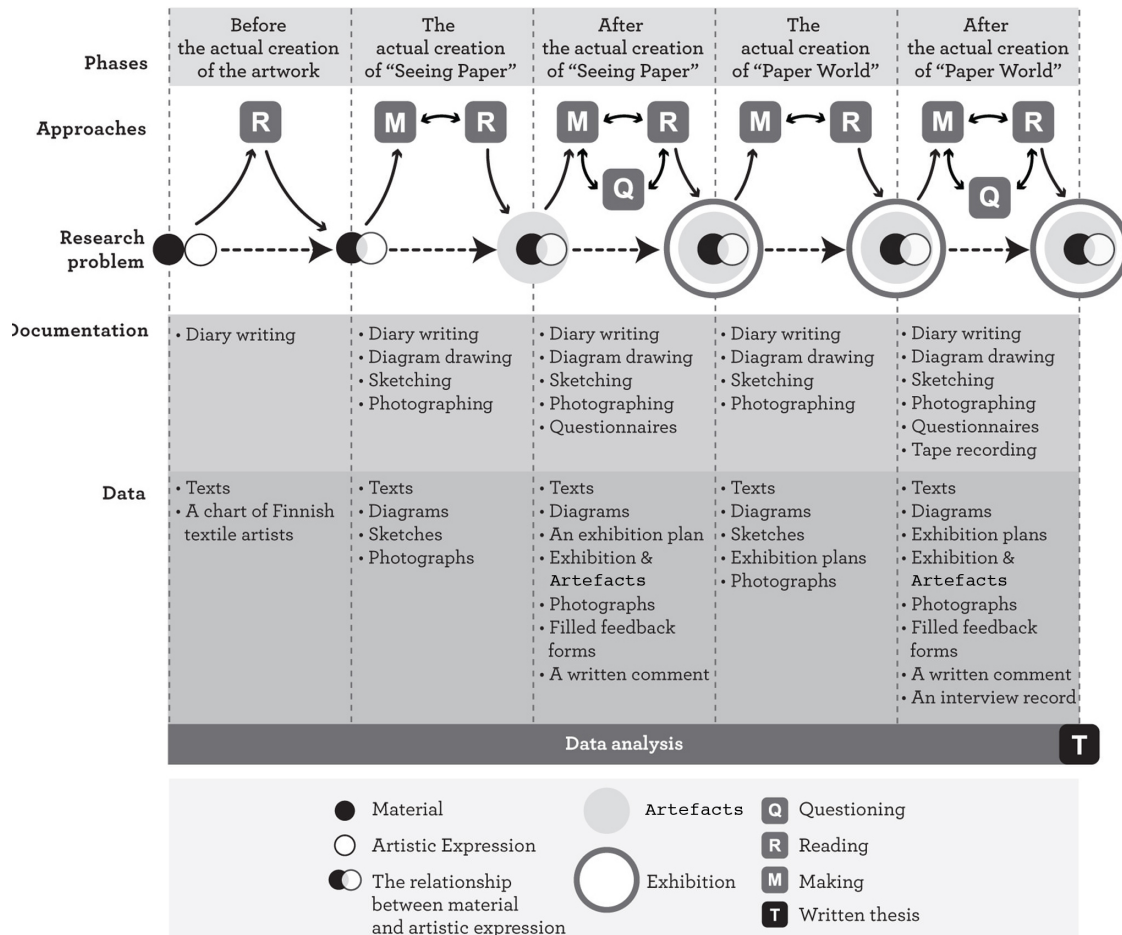


Figure 12. Five phases of the research process (Nimkulrat, 2009, p. 57).

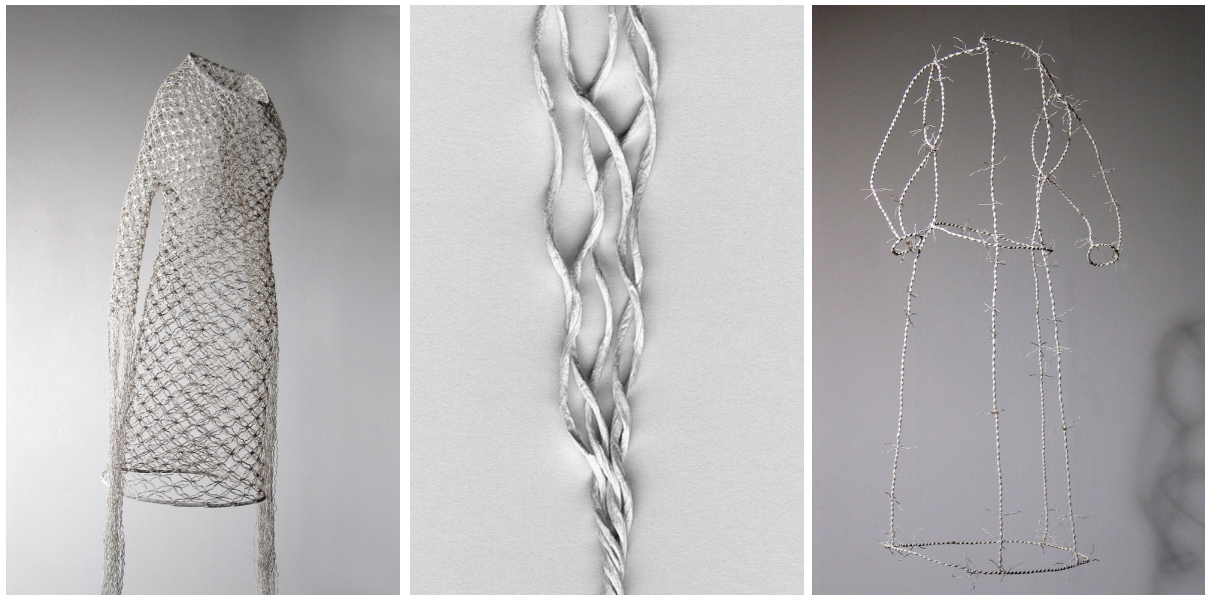
Throughout the research process, documentation was conducted both visually and textually in various forms, such as diary writing, photographing, sketching, diagram drawing and questionnaires. These means of documentation were used not only during the creative processes and exhibitions but also when studying theories related to the research topic (Nimkulrat, 2007). Nimkulrat photographed the process of making her artworks for the two exhibitions as well as the completed artworks displayed in the exhibition spaces. These photographs together with her diaries facilitated the *reflection-on-action* of her creative practice (Nimkulrat, 2012). In her case, any insight gained through this reflection was used as the starting point of her second art production. Furthermore, this documentation served as research data that she revisited and reflected on when preparing the written thesis.

Nimkulrat's daily diary writing enabled her to record her actions and experiences of the creative process, from conceptualising to manipulating the material to executing the artworks. She noted both factual and tangible aspects, such as the choices of material and the reasons for selecting them, and less concrete ones, such as her emotions when handling a material. In her case, diary writing was a reflective process evolving correspondingly with the situations she stumbled upon in the artistic process. This facilitated her self-awareness of cumulative thoughts, intentions and decisions in the action or *reflection-in-action* (see Schön, 1991, pp. 128-156). Some writings about thoughts or actions, which seemed trivial in the creative process, shed light on the overall process after it was completed. An example can be seen in a diary entry made during the making of *Get Sorted* (Figure 13), an artwork in the *Seeing Paper* series:

Life is in a mess because one makes it messy, like I did with the neat twisted paper yarn... I have to control not only the messiness of the strings but also my pulling strength. If I pull the strings too hard, I may break some strings... if I pull them too gently, the knots are too loose... I have to add new strings at several places where the old strings are broken. I hide the broken strings very neatly. (Extract from working diary, 28 March 2005; Nimkulrat, 2009, p. 115)

The above note shows not only her intense experience with a type of paper string (Figure 14) but also her feelings towards it in relation to the material's physical qualities, such as being weak and difficult to sort out. As the paper string she used was untwisted from a strong, straight and smooth type, the experience with its weakness and messiness was unexpected to her and influenced her thoughts about the on-going work. When the work was finished, the note led to the title *Get Sorted*. Then, Nimkulrat associated the experience of the rough textured and easily broken strings with her earlier experience of something else—barbwire (see also, Nimkulrat, 2010, p. 69).

To be able to understand this experience and its association with her previous experience, she turned to philosopher Maurice Merleau-Ponty's (1962) phenomenological thinking. In Nimkulrat's case, the experience of making came first, and its link to theoretical knowledge emerged through a literature review. According to Merleau-Ponty (1962, p. 369), a tactile phenomenon is effective only when it finds a resonance within the person doing the touching. The material's association with barbwire thus shows the way in which the artist-researcher's tactile experience sought connection with consciousness and recalled the memory of prior experiences. This association became the input of her creative process of a subsequent artwork using the same material, namely *Private Area* (Figure 15). She knew that she could represent the association and made the material's qualities visible as the key feature of the work through forceful pulling to break the strings.



Figures 13, 14 and 15. Left: *Get Sorted*; Middle: Material used to create *Get Sorted* and *Private Area*; Right: *Private Area*. Photographs: Maj Lundell and Minna Luoma.

In Nimkulrat's case, the creation of the artefacts was performed as the *reflection-in-action* of her previous creative process. Through the interaction between different research approaches (i.e. making, reading and questioning), the research problem regarding the relationship between material and artistic expression was developed and tackled accordingly. Documentation has proven crucial for conducting practice-led research. Without the documentation of the artistic process, artworks produced in the process may not be adequate to provide data for analysis and to generate reflection (Nimkulrat, 2007). The documented visuals and texts became data, which was later organised, reflected on and articulated. Documentation makes the implicit artistic experience attainable and debatable in the context of disciplined inquiry.

Discussion and Conclusion: Relationship between Documentation and Reflection

In this article, we have reviewed the role of documentation in relation to reflection through three cases of published practice-led doctoral research projects. We focused in particular on how documentation potentially captures experiential knowledge. The three cases demonstrate various ways of documenting research and creative practices. They exemplify how documentation functions as a research tool for capturing the practitioner-researcher's reflection *on* and *in* action. Documentation also supports the communication of the practitioner-researcher's reflective experiences in the creative process and reveals the practitioner-researcher's ways of knowing through the artefacts and their making. In summary, in order that the practitioner-researchers of the three cases were able to reflect *in* and *on* action, they utilised two modes of documentation: (1) documentation *of* making the artefacts and (2) documentation *for* making the artefacts (Table 1).

The first mode—documentation *of* making artefacts—takes place at the same time as the artist-researcher gradually transforms material into artefacts. This mode of documentation can be carried out visually and textually, as both Mäkelä and Nimkulrat did throughout their creative practices. The textual documentation can be conducted in the form of diary writing. Some texts in Mäkelä and Nimkulrat's diaries reveal how their thoughts and emotions evolved during their encounters with their materials, techniques and tools. The proceeding thoughts and emotions once recorded can serve as significant data for discussing the research

topic when writing up the thesis. In this way, the recorded texts and visuals illuminate the artist-researcher’s ways of working, thinking and knowing in their action.

Table 1. Summary of the three case studies.

Case	Field of Practice	Aims	Documentation Methods		Outcomes
			Documentation of Making Artefacts	Documentation for Making Artefacts	
Mäkelä (2003)	Ceramics	To explore the female body as the theme of the artworks made during the research process and as the main focus of the theoretical discussion	Diary writing (notes and sketches) to reflect on the creative process		Clay pictures as representations of women displayed in three exhibitions Dissertation as the final reflection
Turpeinen (2005)	Glass	To examine the relationship between a cultural history museum exhibition and the objects on display		Diary writing (notes and sketches) and photographing while visiting cultural history museums	Installations in three art museums functioning as test spaces Dissertation as the final reflection
Nimkulrat (2009)	Textiles	To understand the influence of a physical material on the formation of the artist’s ideas during the creative process	Diary writing (notes and sketches), photographing and diagram drawing to reflect on the creative process	Diary writing (notes) when studying theories related to the research topic and questionnaires during the exhibitions	Two art series exemplifying the expressivity of the materials featured in two exhibitions. Dissertation as the final reflection

The second mode—documentation *for* making artefacts—arises before the actual creation of the artefacts, when the practitioner-researcher is still searching for inspiration for her creation. This mode of documentation can be conducted visually and textually. As in Turpeinen’s case, visuals and notes from her museum visits in her working diary served as the basis for developing the themes of her installations. Similarly, in Nimkulrat’s case, notes made in her research diary when reading theories related to the research topic along with questionnaires collected during the exhibition that assisted in conceptualising the subsequent artistic production and exhibition.

These cases reveal how the two steps of reflection termed by Schön as *reflection-in-action* and *reflection-on-action* take place in the actual creative process. *Reflection-in-action* functioned as an inherent method for collecting information about the creative process. In Mäkelä and Nimkulrat’s cases, *reflection-in-action* was made possible by various means of documentation, such as diary writing, photographing and diagram drawing. In Turpeinen’s case, *reflection-in-action* took place when she made sketches in her diary during the museum visits. *Reflection-on-action* served as a method of analysing information collected about the creative process. In the later stages of all three cases, when connecting the information about

the creative processes with the relevant research literature, *reflection-on-action* provided insights on and understanding of the entire study.

It can be concluded that in the context of practice-led research, documentation can function as a research tool for capturing reflection *on* and *in* action. When practitioner-researchers document their practice-led research processes, they consciously reflect on the experiences during the process (*reflection-in-action*) and on the documented experiences after the entire process (*reflection-on-action*). This does not mean that documentation is the foundation of research or theory construction (Friedman, 2008, p. 157). Rather, documentation makes reflection explicitly articulated in a form available for the practitioner-researcher to revisit and analyse in order to gain and develop understanding around her own practices.

This article has argued that documenting and reflecting on the creative process are necessary for the conduct of doctoral practice-led research in art and design. Practice in a research context enables access to the process of making, and the documentation of this process provides data for further analysis. By doing so, experiential knowledge becomes explicit, which may be an area for further research. Through documentation, the experiences and knowledge generated within the practice can be shared between practitioners in the field and beyond. It also allows the practitioner-researcher to revisit her own thinking and creative process for future practice.

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