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A Review of Graphic Facilitation in Organizational and Educational Contexts

Heidi Hautopp and Rikke Ørngreen

Graphic facilitation is a growing practice in organizational contexts and is slowly emerging in educational contexts. However, as the review in this paper shall demonstrate, there is a shortage of research in the field. The purpose of this paper is to illustrate the practical application of graphic facilitation with the aim of outlining a suggestion for future research in relation to educational and organisational settings. Based on our review, we turn to related research areas, in particular design sketching, but also social learning theories and problem-based learning. We describe and exemplify how these related research areas can expand research perspectives on graphic facilitation, its use, processes, and outcomes and the roles of the participants involved.

Introduction

Graphic facilitation was initiated in the 1970s by David Sibbet and Geoff Ball, who used graphics to support group processes in organizations. In the 1980s, Ball (1999) stopped working with graphic facilitation, while Sibbet continued the practice in his company The Grove. Graphic facilitation is often used to describe what professionals do when visually representing group processes (Sibbet, 2001; Tyler, Valek and Rowland, 2005). The method was initially inspired by the ways in which designers and architects utilize visualizations and sketching with clients (Sibbet, 2001, 2008). In the field of graphic facilitation, analogue drawing techniques are referred to as the typical way of doing graphic facilitation, whereby the facilitator draws on large pieces of wallpaper while involving participants and using their utterances to visualize and organize what is said (e.g., Sibbet, 2001; Tyler et al., 2005; Valenza and Adkins, 2009). Often, practitioners who utilize graphic facilitation refer to a process whereby, as facilitators, they carry out the graphic illustrations in-situ, combining words and pictures based on the participants utterings during the facilitation process (as shown in **Figure 1** below). Thus, graphic facilitation is interpretive, as the graphic facilitator listens to the story in the conversations, translating verbal and nonverbal inputs into visual forms that serve to synthesize and integrate individual and group thinking so as to focus and direct group processes (Tyler et al., 2005). Leading Danish consultants in graphic facilitation emphasize that interactions between participants as well as with the graphic material produced during the sessions constitute the core of graphic facilitation (Nielsen et al., 2016).

As this paper seeks to demonstrate, graphic facilitation is a growing practice, but research-based knowledge on the method's application, steps, and effects remains scarce (Nielsen et al., 2016). The aim of the paper, therefore, is to present a review of the existing literature in order to point to potentials and barriers in graphic facilitation processes and future developments of the method, particularly as it relates to the field of design and learning in organizational and educational contexts. Through this review, we found various factors at play and conclude that there is a need for more systematic empirically based research that focuses on how to use graphic facilitation as support for learning, reflection, and knowledge creation in groups, with a particular focus on digital possibilities.

Graphic facilitation – Application in practice and as a research field

Graphic facilitation is derived from practices by consultants who have deployed designs and other creative methods as problem-solving strategies in business (Sibbet, 2001). Since its initiation in the 1970s, the method has expanded globally, but it is still a relatively new phenomenon in Scandinavia (Nielsen et al., 2016). In 2003, graphic facilitation was introduced in Denmark by Ole Qvist Sørensen, a former employee at David Sibbet's company The Grove, who had returned to Denmark to start his own company Bigger Picture (Qvist Sørensen, 2017).

In the Scandinavian context, and inspired by David Sibbet and Ole Qvist Sørensen, the book by Nielsen et al. (2016) was authored in collaboration between

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Figure 1: A graphic facilitation process seen from the position of the participants (source: photo by author R. Ørngreen, of author H. Hautopp in an ongoing facilitation process).

organizational consultants from the company Attractor, part of Mannaz and New Stories. Madsen and Frank's (2014) work is another Danish publication that targets facilitators focusing on graphic facilitation in education and team collaboration. Thus, methods within graphic facilitation are deployed in different organizational and educational contexts. Both publications focus on practices and exercises based on the consultants' own experiences. Therefore, they do not represent research-based knowledge, in the sense that the experiences are not collected as empirical data that consider the full body of experiences and are not scientifically analyzed, cross-related, etc. They do, however, rely on theories of visual thinking (Horn, 1998; Hyerle, 2009) and systemic facilitation practices, which are a leadership practice applied, for example, within coaching, where the concepts of observing relations and communication patterns in groups are at play (Moltke and Molly, 2009). Likewise, various international hands-on books have been published within the field of graphic facilitation, e.g., *Visual Meetings* (Sibbet, 2010), *Visual Teams* (Sibbet, 2011), *Visual Leaders* (Sibbet, 2012), *The Graphic Facilitator Guide* (Agerbeck, 2012), and *The Art of Business Communication* (Shaw, 2015) as well as practice descriptive papers (Kelly, 2005; Valenza and Adkins, 2009).

It seems that the publications in-use about graphic facilitation are primarily in the form of practitioner guides, and only few research-based studies exist. In order to get a broader insight into the field of graphic facilitation, we conducted a more systematic literature review search using Harzing's Publish and Perish software (Harzing, 2010: 135–146) and employed the queries: "graphic facilitation" OR "graphic facilitator" for the period 1988 to 2018. This led to 682 results. To be more specific, we only addressed publications that explicitly applied the terms "graphic facilitation" and "graphic facilitator."

Literature review searches are often filtered through journal papers, as opposed to grey research, as books, anthologies, and conference proceedings and searches are filtered according to the number of citations, as opposed to the Google Scholar relevance link (e.g., in the review of design-based research in educational design in Anderson and Shattuck, 2012). In order to acquire a picture of which literature is in use, there is a need to investigate the body of literature referenced by others. However, omitting grey literature (e.g., conference papers, anthologies, and books) and research with fewer citations can prove to be overly limited, as the criticism of the otherwise much-cited Anderson and Shattuck (2012) review shows (McKenney and Reeves, 2013). In our situation, with an apparently small literature base, and even fewer scientific journals, we argue for the use of the Harzing software (which is based on a Google Scholar database), as scientific databases (Web of Science, etc.) can limit journal results. Furthermore, to qualify for the review, we have added a backward and forward snowballing approach (Wohlin, 2014), that is, investigating which references are used in the much-cited literature and then conducting a search of who else has used the same references.

Of the 682 results generated, 128 have been cited more than 10 times and 44 more than 50 times. In the list, many entries turned out to be either related to medical use, where facilitation was about aiding patients, or about language learning, where graphic facilitation was about learning from pictures rather than or as a supplement to the written words, or, for example, learning Chinese

signs. Neither of these is related to the method of graphic facilitation discussed in this paper. Therefore, we have systematically worked through the complete list and paid particular attention to papers that have been cited more than 50 times. This left us with 20 papers and books (and other materials), 7 of which were journal papers. However, through our snowballing process, we found additional papers and identified the much-cited practice research, some of which have already been introduced at the beginning of this section.

In **Table 1** below, we have outlined the reviewed materials based on their genre and their focus on either education or organizational contexts.

Two significant findings can be observed in **Table 1**: 1) *empirical foundation* and 2) *graphic facilitation in relation to the research area in design.*

Empirical foundation

The review shows that graphic facilitation is a novel research area, with only 12 research-based studies, seven of which mention either the term graphic facilitation or graphic facilitator, but do not demonstrate how the method is used. The other research papers refer to concrete cases and empirical findings, but do not explicitly elaborate on the method, data collection, and analysis, with the only exception being Van der Lugt (2000). In this paper, the sketching and graphic facilitation sessions were videotaped, transcribed into protocols, and further analyzed based on the linkography method inspired by Goldschmidt (1996). Furthermore, research on graphic facilitation is only represented in relation to its inclusion in elementary school (Eppler, 2006). Likewise, graphic facilitation is mentioned for its inclusive role in relation to intercultural communication between employees/adults in organizations (Tyler et al., 2005). However, from a practice-based perspective, some studies emphasize the potential of the use of graphic facilitation at all levels of education (Madsen and Frank, 2014; Margulies and Maal, 2002). These insights call for more empirically grounded studies in both organizational and educational settings. It has become relevant for both settings to investigate the relation between concepts of learning and graphic facilitation in order to explore graphic facilitation as a boundary object and process of meaning making in the facilitation of learning processes. Here, other approaches to facilitation in various learning situations may shed further light on this relation, e.g., Savin-Baden's (2003) contemplation of the facilitation of problem-based learning (PBL).

Graphic facilitation in relation to research area in design

As mentioned earlier, graphic facilitation was inspired by the ways in which designers and architects utilized visualizations and sketching methods (Sibbet, 2001, 2008); however, there is only a mere mention of the relation, without further elaboration. Other papers link the relation between sketching and graphic facilitation in a process in which design teams brainstorm with an external graphic facilitator, who provides a collective graphic memory for the designers (Van der Lugt, 2000), and where the use of extreme sketching is combined with graphic facilitation workshops in organizations (Hautopp and Nørgaard, 2017). In this paper, we will further explore these connections with inspiration drawn from the use of sketching in design processes (Buxton, 2007; Olofsson and Sjölen, 2007), pointing to areas of research in this field and what needs to be addressed when contemplating sketching in graphic facilitation.

Table 1: Overview of the reviewed material.

Genre	Examples from education	Examples from organization
Research paper that applies graphic facilitation/graphic facilitator	Prosser and Loxley (2007) *Elementary school – focus on inclusion*	Hautopp and Nørgaard (2017) Tyler et al. (2005) Van der Lugt (2000) Van der Lugt (2002)
Research paper/chapter mentioning graphic facilitation/graphic facilitator, *but does not illustrate how it is used*	Cockell and McArthur-Blair (2012). *Higher education* Eppler (2006) *Higher education* Nissley (2002) *Higher education*	Bason (2016) Crane (1993) McCarthy and Eastman, (2013) Nelson and McFadzean (1998)
Practice guides (books and how-to papers and reports)	Madsen and Frank (2014) *Elementary schools* Margulies and Maal (2002) *All levels of education*	Agerbeck (2012) Atlee and Zubizarreta (2010) Bunker and Alban (2006) Justice and Jamieson (2012) Kaner (2014) Kelly (2005) Margulies and Maal (2002) Nielsen et al. (2016) Schuman (2005) Shaw (2015) Sibbet (2008, 2010, 2011, 2012)
Papers addressing the history of graphic facilitation (non-research paper)		Sibbet (2001) Valenza and Adkin (2009)

Bernstein (1996) developed the concept of *reconceptualization* to describe how "discourses" originating from one social site are reshaped to fit with the social givens of the new site, for example, in organizational and educational settings. This means that discourses are moved from the originating site of production to a pedagogic site (Bernstein, 1996). From this perspective, we are interested in how sketching practices are *reshaped* and used in graphic facilitation settings and how the reconceptualization can be further developed. In order to understand this relation between sketching and graphic facilitation, the current practice of *graphic facilitation* as well as the role of *the graphic facilitator* are outlined on the basis of the reviewed material.

In the following section, the results from the literature review are presented in three themes:

1. Graphic facilitation: analogue drawing techniques, icons, and models
2. The graphic facilitator: roles, responsibilities, and dominant concepts
3. Design sketching as a concept in graphic facilitation

Based on the themes, it became relevant to look at graphic facilitation in respect to learning, which will be followed by a proposal for new digital possibilities. The paper ends with an outline of a suggestion for research that draws on these related areas through reviews, empirical investigations, and organizing interventions that apply graphic facilitation to support learning processes in organizational and educational settings.

Graphic facilitation – Analogue drawing techniques, icons, and models

As mentioned in the introduction, in the field of graphic facilitation, analogue drawing techniques are referred to as the typical way of doing graphic facilitation, whereby the facilitator draws on large wallpaper while involving participants and using their utterances to visualize and organize what is said (e.g., Tyler et al., 2005; Sibbet, 2001; Valenza and Adkins, 2009). Visuals and drawing techniques are applied as tools that direct the process, which place demands on the techniques so that they can be quick and easy to draw (Nielsen et al., 2016). Icons help make abstract phenomena more concrete. They are characterized by being simple to draw, having a symbolic significance, and being familiar to both the facilitator and participants, while also ensuring that the communication at hand is addressed (Madsen and Frank, 2014). In every practice guide from the literature review (see **Table 1**), there were example of icons, templates, and how-to guides on how to develop a visual language when working as a graphic facilitator. Graphic facilitation is not about depicting reality; instead, it is about representing ideas and icons in relation to other ideas illustrated in real-time on the basis of participants' contributions (Valenza and Adkins, 2009). Graphic facilitation relies on known models and icons, e.g., "Group Graphics Keyboard" (Sibbet, 2008: 121), which contains familiar representations of icons and templates. These icons and templates are organized from simple to more complex graphic illustrations, which represent generic purposes that the facilitator can actualize (Sibbet, 2008). Qvist Sørensen from Bigger Picture developed "7 elements of graphic facilitation," which also contain simple icons that can be used to illustrate: "*people, places, process, speech, text, colour, effect*" (BiggerPictureVideo, 2013). Working in this field in the Danish context has made it clear that almost everyone who has participated in a course in graphic facilitation has learnt to draw Bigger Pictures' icons for a man by using a star icon – the so-called "star man" (see **Figure 2** below), which is inspired by Sibbet's star man (Sibbet, 2010; Kaner, 2014: 71). Likewise, several papers and how-to guides explicitly refer to Sibbet's work and models (e.g., Nielsen et al., 2016; Kaner, 2014; Schuman, 2005). Thus, these models and elements have gained widespread recognition among practitioners. The practices in these guides may be easy to grasp and learn (see, e.g., the large number of YouTube movies on templates and icons, such as Ullersted, 2015, and the aforementioned BiggerPictureVideo, 2013), but are not easily created in-situ. Icons and drawing techniques have to be learnt prior to the processes (Nielsen et al., 2016), which points to the competencies and roles of the facilitator, which we discuss in the next section.
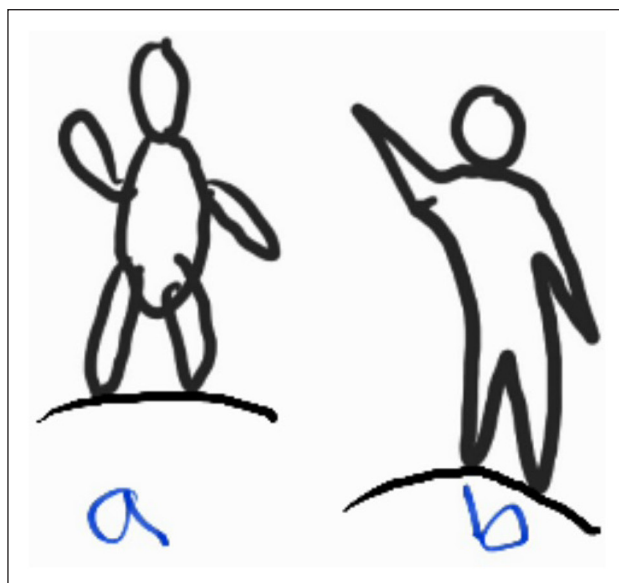
Figure 2: This figure illustrates two ways of drawing quick visualizations of a human. The first **(a)** is the classic abstraction of using symbols as a circle for the head, eclipse for arms, etc. However, even such an abstraction takes time to carry out in the very rudimental way shown, in particular, as it requires the drawer to lift the pen. The second **(b)** uses a different iconic solution, the "star man," which illustrates a human in a star-like shape. This is drawn quickly and can be done in one pen stroke, with the added possibility of giving the human different postures, movements, etc., faster than in the other version.
(Source: figure drawn by author R. Ørngreen).

The graphic facilitator – Roles, responsibilities, and dominant concepts

In the literature review, several papers and books refer to graphic facilitation as a concrete tool among other facilitation techniques, with the main focus being on facilitation (e.g., Justice and Jamieson, 2012; Schuman, 2005). Others use graphic facilitation as the main focus of their publication. In what follows, we shall especially highlight perspectives from the latter. In the papers by Tyler et al. (2005) and Valenza and Adkins (2009), there is a particular focus on the role of the facilitator in visually transcribing and documenting the process of a meeting or workshop, where participants are invited to comment on drawings during breaks and at the end of the sessions. On the basis of the definition by Nielsen et al. (2016), one may emphasize that the facilitator contributes by capturing significant bullet points from the process, based on his/her own interpretation at the moment, but plays a more passive role in the dialogue with the participants during the process. Thus, the process can be characterized as *graphic recording* (Nielsen et al., 2016: 25). When doing *graphic facilitation*, visual notes are used as an active and integral part of the process, e.g., during the workshops and in debriefings with participants (p. 26). In graphic facilitation processes, the participants have a more explicit influence on how processes are visualized, but typically, they are not actively drawing on their own. Nielsen et al. (2016) recommend exercises in which participants draw keywords as part of the process in order to be aware of the facilitators' *definition power* with the pen at hand (Nielsen et al., 2016: 220).

From this perspective, it would be relevant to look for other examples in which visualizations have been used, with professionals reflecting on their own practice (Nevgi and Löfström, 2014; Espiner and Harnett, 2016). A case study by Nevgi and Löfström (2012) investigated how academics at university use drawings to reflect on their roles as teachers. The authors emphasize that drawings paved the way for a space in which the academics were motivated to see new perspectives and to explore a limited understanding of their own teacher identity.

The above-mentioned perspectives point towards new research on how other research areas, concepts, and models can inspire new ways of working with graphic facilitation processes whereby distributions of the roles of participants are viewed as a significant part in which graphic facilitation is used to support reflection and learning processes.

Design sketching as a concept in graphic facilitation

Graphic facilitation is inspired by methods from architects and designers (Sibbet, 2001, 2008) who give shape by drawing, as seen in the practice of design sketching. Sketching is used both as an individual method (Goldschmidt, 2003; Schön, 1983) and as an applied method in design teams (Buxton, 2007; Olofsson and Sjölen, 2007). Olafsson and Sjölens (2007) delineate four purposes of sketching: *investigative*, *exploratory*, *explanatory*, or *persuasive.* From a graphic facilitation perspective, it would be interesting to study whether such purposes or modes could be implemented to the process as well as the consequences it

would have for the process, the graphic product, and the participants.

As established earlier, the widespread practice in graphic facilitation is the use of icons and models to visualize processes (e.g., Group Graphic Keyboards and 7 elements). Thinking about deploying graphic facilitation in an exploratory mode opens for a discussion on whether specific icons and models are conducive to idea generation. Twerky and Suwa (2009) emphasize that both models and hand-drawn sketches are crucial in design development processes; however, sketches have greater potential than models in the preliminary idea generation phase because sketches: "*can represent incomplete objects as blobs, or incomplete connections as wavy lines, so that a designer can consider general configurations before committing to particular connections and specific shapes. Models demand completeness*" (p. 2). Similarly, Nørgaard (2012) points out that the overly strict application of framed icons in graphic facilitation reduces innovative thinking. Nørgaard utilizes what she calls *extreme sketching* together with SMEs (small and medium-sized enterprises), and through humor and provocative drawings, she challenges companies to rethink, e.g., their visions and business models.

From a learning perspective, it would be a valuable input to research the balance between scaffolding for participation in which icons do not have a constraining function (Nørgaard, 2017). Instead, in graphic facilitation, they can function as access to the edification of knowing in action (Schön, 1983), which can be helpful for participants who would otherwise be reluctant to draw as part of academic practice (Hautopp, 2017). Christoph Wulf (2017) emphasizes that when handling and using pictures and visuals in present-day society, it is important to stay in the iconic character of the image by memetic recreation of images. Wulf underlines that we learn through imitation and that this process enhances innovative thinking. While this is not only an imitation of pictures and images, it is a creative and productive action (Wulf, 2017).

These perspectives illustrate the need for further research on varying approaches to the function of icons in graphic facilitation and how they relates to learning, reflection, and creation in different modes and with different purposes.

A pragmatic approach and social learning perspectives in graphic facilitation

In order to explore the distribution of roles between the facilitator and the participants, it becomes necessary to look at which learning perspectives discuss facilitation and how facilitation is viewed. The above-mentioned sketching field is based on pragmatic approaches originating from, e.g., John Dewey (see, e.g., Goldschmidt, 2003; Schön, 1983; Twersky and Suwa, 2009) and from studies in which sketching, utilized as part of collaborative design events, gained currency. In these settings, participants do sketches as part of idea generation (see, e.g., Hansen and Dalsgaard, 2012; Mitchell and Nørgaard, 2011). These authors emphasize the productive role of material design artefacts in stimulating collaborative group reflection and dialogue (Hansen and Dalsgaard, 2012). Thus, there is a specific focus on participants' own production of drawings

and visual materials. Schön (1983) developed a conceptual framework on reflective practice, which focuses on practitioners' reflective processes when scrutinizing their own practice, e.g., *knowing in action, reflection in action, reflection on action*. Reflective practice can be seen as an important tool in practice-based learning where people learn from their own experiences rather than from formal learning or knowledge transfer. As such, it would be interesting to challenge the typical way of doing graphic facilitation whereby participants, for the most part, participate in oral dialogues and not in the actual visual productions.

For example, in PBL, students work in teams from an early identification of a problem space. Here, graphic facilitation can be used as a shared method in group processes. Aalborg University applies a PBL pedagogy, and in almost all semesters, there is a larger problem-oriented project work, on which the students (often in groups) are examined. Some identify teachers as facilitators in PBL (Donnely and Fitzmaurice, 2005: 12; Savery, 2006: 15), others as supervisors in project-based learning (Savin-Baden, 2003: 18). The majority of the learning processes are addressed in terms of their potential in rendering a high degree of practice–theory relation, addressing both reflection in and on action (see, e.g., Shepherd and Cosgrif, 1998). However, there are also challenges such as group dynamics and identifying and designing the problems at hand (Hansen and Jensen, 2004; Knudstrup, 2004). There are several suggestions in terms of integrating design processes into PBL focusing on a sketching phase (e.g., Knudstrup, 2004). Notably, the empirical evidence or efficiency of such approaches remains wanting, and the relevant questions are how graphic facilitation can be used in PBL and project work in education and whether teachers can facilitate a number of groups working on their own PBL projects.

Another feature of PBL is that students work in collaborative groups (see, e.g., Hmelo-Silver, 2004), where they identify what they need to learn in order to solve a problem, engage in self-directed learning, apply their new knowledge to the problem, and reflect on what they have learned. In order to support this self-directed learning process, graphic facilitation can be used as a tool for the students to externalize their ideas, which can spur further dialogue and group reflection.

Wenger (1998: 62) refers to Schön's conceptual framework when he emphasizes the relation between theory and practice as complex and interactive. Together with Lave, he takes a point of departure in an understanding of learning as a social phenomenon (Wenger and Lave, 1991), whereby learning happens through participation and is established through the participants' interrelations. The role of the teacher or facilitator is to scaffold a space and practice that encourage participation, but also where participation takes on various forms, some more active, some more observant, etc. (Wenger and Lave, 1991). In PBL activities, there is a need for the teacher to avoid the role of "expert" and, instead, take on the role of a coach or adviser in order to make space for students' independence (Donnelly and Fitzmaurice, 2005). For the teacher to avoid the role of "expert," we recommend the distribution of the *definition power* (see earlier example, Nielsen et al., 2016)

to students by letting them draw processes and ideas themselves in order to explore the problem space for their projects. An investigation into whether presentations of typical icons (as an introduction to graphic facilitation) and the act of drawing can further students' academic practices needs to include research on icons and their affordances from a learning perspective. Which typical icons are conducive to students' processes and when do they play a constraining factor, e.g., according to Olofsson and Sjölen's (2007) four purposes of sketching: *investigative, exploratory, explanatory,* or *persuasive*?

Graphic facilitation and digital possibilities

As previously mentioned, the materials applied within graphic facilitation typically consist of a pen used on large wallpaper (e.g., Sibbet, 2001, 2008; Tyler et al., 2005; Valenza and Adkins, 2009), and several practitioners have emphasized the analogue line as the strength of the method (e.g., Madsen and Frank 2014; Nielsen et al., 2016; Valenza and Adkins, 2009). We therefore propose an exploration of the interface between analogue and digital possibilities when working with graphic facilitation.

Sibbet (2001, taken from Nielsen et al., 2016: 36) argues that new digital media such as digital cameras, digital drawing tablets, and drawing apps pave the way for new advancements in graphic facilitation. Meanwhile, at the summer 2018 international conference for visual practitioners, one of the workshops was called "Digital tools for the visual practitioners. From pain to possibilities," which focused on the transition from working on a large paper-based surface to a smaller digital surface (EuViz Conference, 2018). There appears to be potential and interest in combining graphic facilitation with digital visualization tools in practice, but research on the possibilities and barriers remain scarce (Nielsen et al., 2016). Looking at the related area of design sketching, we also see a growing interest in exploring visual-sketching techniques in relation to digital possibilities, e.g., animation-based sketching (Vistisen, 2016), designing with video (Yhirisku and Buur, 2007), and video sketching (Ørngreen, Henningsen, Gundersen & Hautopp, 2017). We therefore advocate for similar explorative approaches and formative interventions in relation to graphic facilitation.

Recently, various digital drawing tools have entered the market to support visual production, e.g., VideoScribe, which enable you to make your own Doodle videos utilizing prefabricated icons or your own hand drawings. In this case, the process is audio-visually recorded and documented, which results in digital videos. Furthermore, with the use of Livescribe Pencast, handmade drawings can be captured and digitally transmitted. Several of these tools connect analogue and digital drawings, but research on possibilities and barriers remain scare. Access to new technologies cannot themselves define new forms of practice. Digital tools do not in themselves change a practice; instead, they and constituted within practice (Stahl, Koschmann and Suthers, 2006). Moreover, the implementation of digital tools in the field of graphic facilitation demands empirically based interventions where these new constitutions can be examined.

In order to investigate digital possibilities and the barriers in the field of graphic facilitation, it is poignant to distinguish between *digitization* and *digitalization* (Manovich, 2001). Digitization involves reshaping analogue products into digital *products*, e.g., when a picture of the final wallpaper is taken and later distributed to participants attending the conference, meeting, etc. Digitalization has more to do with digitally reshaping the graphic facilitation *practice*, e.g., when the graphic facilitation is accomplished on digital drawing pads or tablets, e.g., distributed live on a big screen (e.g., Livescribe Pencast). This could potentially alter not only the process of facilitation by digitalization, but also the context of facilitation, as this process would, for example, allow for multi-site graphic facilitation, where participants are present at two or more locations, as in two different departments in an organization or at two campuses in a distributed educational setting. Graphic facilitation might also be used in online learning settings where participants are participating from their individual place: at work, at home, during travels, etc., still working collaboratively with the distributed visualizations. Another possibility is the use of other dedicated programs, such as VideoScribe, where prefabricated icons can be combined with one's own drawings in Doodle videos, which would alter the form—from graphic facilitation, resulting in still images, to graphic facilitation of videos, animations, etc.

These new modalities and processes resulting from digitization and digitalization need not only be examined rigorously, but also in relation to the questions of how they change graphic facilitation, the roles and responsibilities, and the competences needed to use graphic facilitation.

Conclusion – A suggested research design
The above sections identified graphic facilitation as an area with a significant number of experiences from practice, though with sparse research. In the review, we described the outset of graphic facilitation (history, processes used, icons, etc.) and provided insights into the roles, responsibilities, and dominant concepts of the graphic facilitator. Design sketching was presented as a related research area, which could lend inspiration to how graphic facilitation may be understood, investigated, and developed. The review demonstrated the need for empirical studies of participants, the forms of interaction and role distribution, as well as studies of digital possibilities in graphic facilitation aimed at supporting collaborative learning and reflection processes among employees and students.

In conclusion, there is a profound need to investigate graphic facilitation in a rigorously research-based manner. When systematic analysis is lacking, there is uncertainty around which types of techniques and processes support which types of reflections and learning processes—just as the casualties and dynamics in the relation between the participants and the graphic remain uninvestigated.

As future steps in qualifying empirical research, interventions can be designed and tried iteratively, with continuous theoretical reflection aimed at analyzing their applicability to practice. This would mean:

1. Various designs involving graphic facilitation and digital possibilities applied to practice and re-designed;
2. Observations and analyses of interactions between employees or students, the facilitator, and the (digital) materials;
3. Qualitative interviews or auto-ethnographic materials, where employees or students reflect on experiences with graphic facilitation interventions, conducted both immediately after and repeated after a given time (ranging from, e.g., three months to one year) to give a more solid long-term perspective on the effects of graphic facilitation.

Such approaches can provide a scientific backdrop of the changes or experiences implied in the method (if any) and the effects of using graphic facilitation in organizational and educational settings.

Competing Interests

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