Graphically Speaking: Expanding Landscapes of Scholarly Writing Using Sketchnotes

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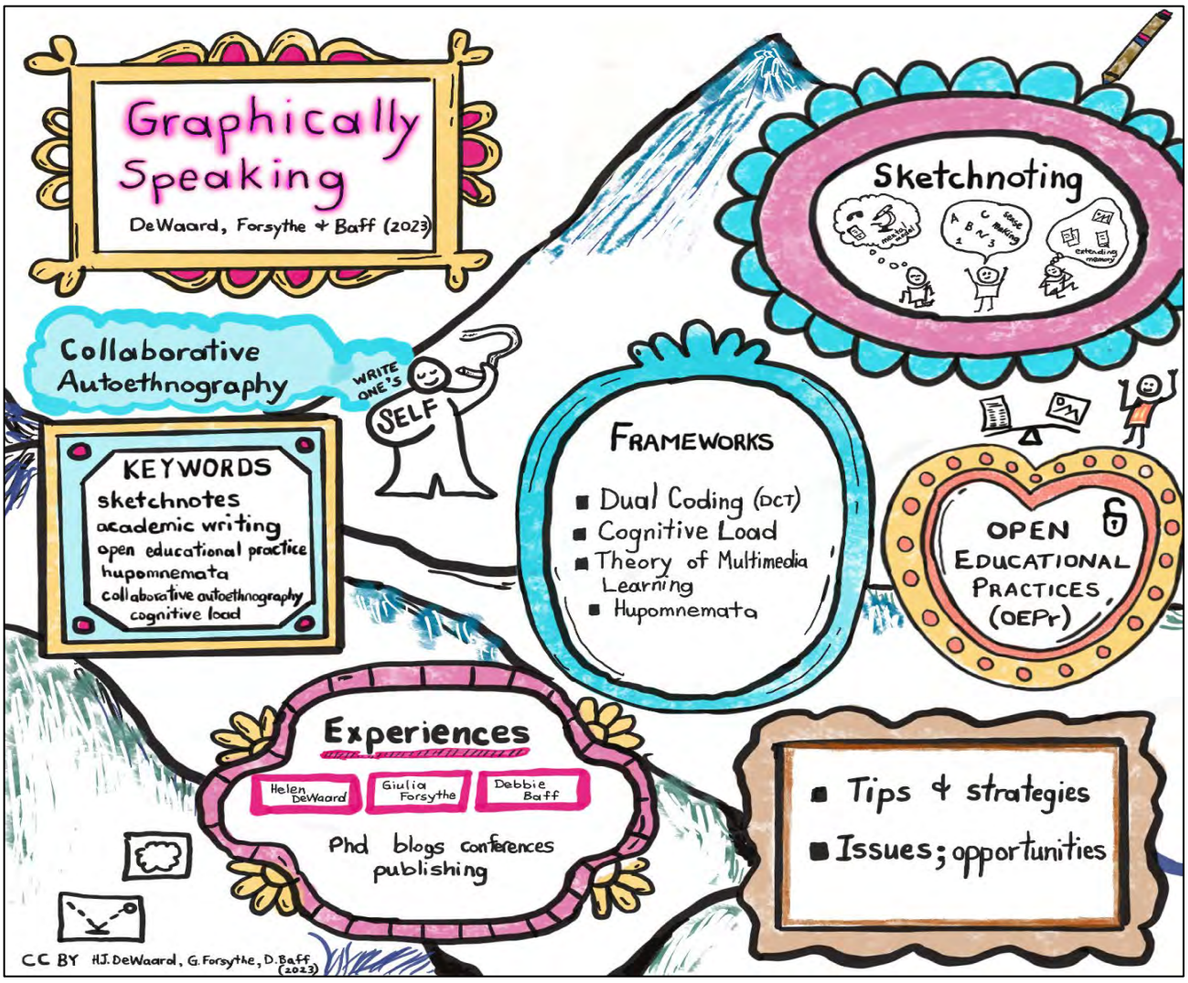
Abstract



Keywords: sketchnotes, academic writing, open educational practice, hupomnemata, cognitive load, collaborative autoethnography

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Note. Sketchnote created for purposes of rendering the abstract in graphic format. Created by the authors using Procreate on iPad. https://ideas.edudoodle.com/scholar/graphically-speaking/. CC BY.

Introduction

Scholarly writing for academic publication follows discipline-specific constraints where alpha-numeric forms of text are common modes of communication. While figures can be integrated into scholarly publications, graphics are required to fit specific style guides depending on the established criteria for the academic journal. When preparing teaching materials, constraints on communication and production can limit thinking and understanding. In this paper, we outline how we incorporate graphic creations called sketchnotes into our academic writing practices. Sketchnotes are one-to-two-page, free-form, image-rich documents focusing on a topic, concept, or presentation. For our purposes, academic writing is defined as not only peer-reviewed publications but also web-published scholarly works, including research outputs and writing relating to and including our teaching materials. With this definition, we hope to open up a model for expanding the landscape of academic writing, which supports our sketchnoting as part of an open educational practice. Our open practices using sketchnotes include peer-reviewed journal publications, open web publications on our blog sites, and the learning objects we have created as alternative readings of course content.

Converting alpha-numeric or verbal communication into graphic visualizations is a means of sense-making and boosting long-term memory (Camporro & Marquardt, 2020). Models of human memory suggest visuo-spatial and phonological mechanisms offer channels for the integration of information into long-term memory (Heathcote, 2016). The theories of dual coding (Sadoski & Paivio, 2000), cognitive load theory (Sweller, 2008), and the cognitive theory of multimedia learning (Mayer, 2002) suggested using cognitive mechanisms such as integrating pictorial-graphic information in teaching and writing practices as an alternative approach to engage memory, enhance understanding, and consolidate learning. Academic and scholarly writing can benefit from the integration of visual-graphic information (Ariga & Tashiro, 2022), which supports a writer's understanding and a reader's recall of information.

The application of visualization can be used by academic writers, researchers, and classroom instructors to illustrate mental models and support ideation, documentation, exploration, and discovery of complex themes and spaces (Lewis & Sturdee, 2022). Sketchnoting in educational contexts can "make thinking visible, welcome linguistic and non-linguistic representation, broaden student choice, strengthen memory, make annotation thinking-intensive, enhance focus, reduce stress, and embrace design" (Zucker, 2019, p. 97). Research into visual graphics are explored in fields of study such as: engineering, where sketchnotes were used for visual notetaking to lower barriers for thinking and increase retention; in traditional lecture-style teaching (Paepcke-Hjeltness et al., 2017); in science as a revision aid (Fernandez-Fontecha et al., 2019; Lee & Lee, 2022); in forensics when preparing for examinations (Tidy et al., 2022); in research of medical practices to summarize research literature and reduce cognitive load

(Martin et al., 2019); in second language learning to improve reading comprehension (Qi & Jiang, 2021); and in human-computer interaction design with programmers to improve thinking and outputs (Lewis et al., 2023; Lewis & Sturdee, 2022).

In this paper, we focus on our academic writing practice using alternative means of communicating ideas and concepts. We conclude with the role of sketchnoting in expanding the landscape of academic writing.

Defining

The use of visualizations and graphic information in academic writing has increased, but classifications are problematic (Ariga & Tashiro, 2022). We offer clarity by distinguishing sketchnoting from commonly used visualization techniques, such as infographics, mind maps (DeWaard, 2023a, 2023b), concept maps, flow charts (Cai & Gu, 2019), and comics (Barry, 2020). Concept maps and mind maps use branching and connecting structures, usually without graphics or iconography, thus differing from the free-form and image-rich formats used by sketchnoters.

Sketchnoting is defined as "a personal, hand-drawn document whose content reflects the ideas that resonate most" (Dimeo, 2016, p. 10) with the author/creator. Sketchnotes can put ideas and concepts together using verbal and nonverbal representations (Erb, 2012). They are sometimes analogous to visual notetaking. Sketchnotes are one-to-two-page documents that include: (a) text in various fonts, styles, sizes, and colours; (b) sketches of concepts or icons; (c) connectors such as arrows and frames; (d) containers such as banners, shapes, and shading; and (e) some form of organizational structure (Dimeo, 2016). Sketchnotes can be created in analogue format using paper, pen, markers, and paint or constructed using digital tools with specialized graphic production software (Camporro & Marquardt, 2020). Sketchnoting is described as a "fast, easy and resource-light method of communicating, iterating, prototyping, and illustrating our ideas and concepts [using a variety of] devices, surfaces and spaces" (Lewis et al., 2023, para. 1).

Sketchnotes vary in "scope, purpose, and design" (Baff, 2020b, p. 371) and are often recognizable from the author's design choices. Sketchnoting can be done in real-time during face-to-face events, lecture-style classes, or academic presentations as a form of live-scribing of key ideas. These can be shared with others to remember an event or bring understanding to complex ideas. From our experience, academic sketchnoting is a means of sense-making and reflection where the author renders complex concepts into understandable and memorable formats. When shared openly through internet-enabled locations such as Flickr or Padlet, sketchnotes have a life after an event or course of study (Sturdee et al., 2018).

As open educational practitioners, we share sketchnotes as a form of scholarly writing within formal and informal peer-reviewed publications, including a variety of openly available social media and web-accessible locations such as blogs, X (formerly known as Twitter), Instagram, Flickr, and Padlet. When defining open educational practices, we use the acronym OEPr to distinguish this concept from open educational pedagogies (OEP; DeWaard, 2023a, 2023b). We consider sketchnoting as part of a "broad descriptor of practices that include the creation, use, and reuse of open educational resources (OER) as well as open pedagogies and open sharing of teaching practices" (Cronin, 2017, p. 1). Definitions of OEPr vary, but for this collaborative autoethnography, we consider OEPr as both external actions or events as well as internal qualities that are contextual, complex, and individual (Cronin, 2017). Our sketchnotes are shared openly and can also be integrated into course materials, referenced in teaching events, and shared within conference presentations. Our individual and collaborative OEPr intentionally and strategically integrates sketchnoting.

OEPr frameworks support our academic and shared writing practices. Tietjen and Asino (2021) outlined five elements that are reflective of sketchnoting as catalysts for our open practices:

1. engaging a diversity of voices in knowledge-building;
2. emphasizing a participatory culture with contributions from around the world while also contributing to global knowledge;
3. applying a common and open licensing system, such as that offered by Creative Commons (Creative Commons, 2020);
4. connecting to non-traditional and informal learning spaces; and
5. building collaborative communities of practice that support others' understanding of complex concepts.

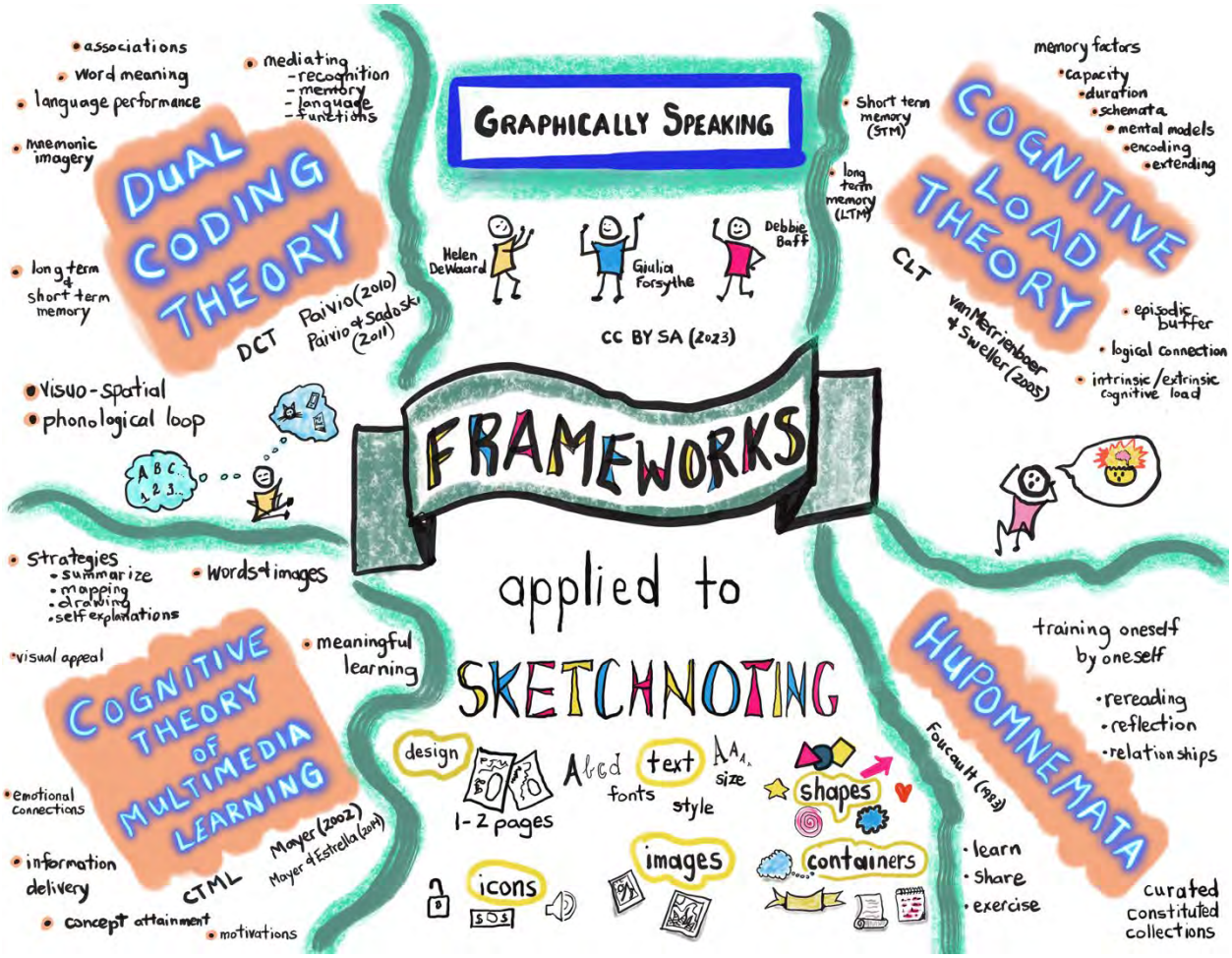
These elements are considered and incorporated into our OEPr when sketchnoting. We also apply Cronin's (2018) macro (Will I share openly?), meso (Who will I share with?), micro (Who will I share as?), and nano (Will I share this?) levels to the decisions we make. These decisions are often tacit and nuanced as we mediate where and when to share our sketchnotes openly.

Frameworks

Theories of cognition and learning provide insights into the reasoning for our sketchnoting practice, as these offer insights into how short-term memory and the integration of information into long-term memory are reliant on many factors (see Figure 1). Both phonological and visuo-spatial information are necessary when information is processed and remembered by the human brain.

Figure 1

Framework Applied to Sketchnoting



Note. Referencing research literature from Foucault (1983), Mayer (2002), Paivio (2010), Paivio and Sadoski (2011), and van Merrienboer and Sweller (2005). Created using Procreate on iPad, by DeWaard, Forsythe, and Baff (2023). https://ideas.edudoodle.com/scholar/graphically-speaking/. CC BY-SA.

According to Paivio (2010), dual coding theory (DCT) centres on mnemonic imagery traditions from over 2,500 years ago. DCT outlines the role of verbal representations involving audio, visual, motor, and haptic systems as well as mental representations, which "mediate performance in recognition, memory, language, and other functional domains" (Paivio, 2010, p. 209). DCT supports our understanding of why our sketchnoting practices emerged in our scholarship; we recognized the power of sketching our thinking, outlining associations within concept development, and communicating within graphic formats in supporting our understanding and recall of information garnered from both phonological and visuo-spatial formats.

Cognitive load theory (CLT) focuses on the impact of cognitive processes such as short-term and long-term memory on the instructional design of learning (van Merrienboer & Sweller, 2005). CLT suggests that the capacity and duration of the working memory of the human brain are limited, but that long-term memory, through the construction of complex and automated schemata, supports and extends working memory. We see sketchnoting as an externalized form of schemata construction of mental models that supports individual and social learning. Through visualizations and mental maps, complex conceptions such as schemata become encoded in long-term memory, thus aiding future short-term memory processes (van Merrienboer & Sweller, 2005).

Mayer's (2002) cognitive theory of multimedia learning (CTML) suggested deeper and more meaningful learning occurred when information was presented in both text and graphic formats. Mayer defined multimedia as the presentation of learning materials using words and pictures for the purpose of information delivery and knowledge construction. Five steps in multimedia learning include

> selecting relevant words from the presented text or narration, selecting relevant images from the presented illustrations, organizing the selected words into a coherent verbal representation, organizing selected images into a coherent visual representation, and integrating the visual and verbal representations and prior knowledge. (Mayer, 2002, p. 27)

This directly connects to our sketchnoting practices within both live sketchnoting of presentations and reflective sketchnotes from journal articles or book chapters. CTML research supports the use of strategies such as summarizing, mapping, drawing, and self-explanations for students (Fiorella & Mayer, 2015), which validates our use of sketchnoting in our academic writing practice.

Our frameworks include the conception of hupomnemata posited by Foucault (1983), as sketchnotes are revisited and reread, becoming reflections upon which we engage in a form of conversation with self and others over time. From this, we discern that our individual sketchnoting practices hold true to the notion that exercising our skills, fluencies, and capabilities as sketchnoters in academia occurs as a form of training the self by oneself. We individually exercise, learn, and share our sketchnoting in different ways and in varying academic landscapes, yet our graphic renderings serve as our hupomnemata, a constituted, curated collection of a "material record of things read, heard, or thought, thus offering them up as a kind of accumulated treasure for subsequent rereading and meditation" (Foucault, 1983, para. 5). At the root of our sketchnoting practice, we posit that the aim of hupomnemata is to make our "recollection of the fragmentary logos, transmitted through teaching, listening, or reading, a means of establishing a relationship of oneself with oneself, a relationship as

adequate and accomplished as possible" (Foucault, 1983, para. 8). Graphically speaking, our practice of sketchnoting supports the development of our academic selves (Swonger, 2006; Weisgerber & Butler, 2016). It is through the process of sketchnoting that our academic selves are rendered into visible form. It is by sharing our sketchnotes openly that our understanding, listening, and writing practice become parts of our expanded landscape of academic writing and identity.

Methodology

Chang et al. (2013) suggested collaborative autoethnography as being "simultaneously collaborative, autobiographical, and ethnographic" (p. 17). Our methodology began with the solo writing of our lived experiences, which we then shared with each other. This became the focus of our subsequent collaborative conversations as we drafted, wrote, and revised this document. Our autoethnographic, solo work is evident in the creative and evocative analysis of our sketchnoting experiences. The collaborative ethnography incorporates our shared understanding of the definitions, frameworks, and discussions of sketchnoting as academic writers and scholars.

Ellis et al. (2011) suggested that autoethnography researchers "retrospectively and selectively write about epiphanies that stem from, or are made possible by, being part of a culture and/or by possessing a particular cultural identity" (p. 4). As researchers, we analyzed and compared our personal experiences as well as made explicit connections to existing research literature. As collaborative autoethnographic writers, we attempted to aesthetically and evocatively describe our personal and interconnected experiences (Ellis et al., 2011). By revisiting and rereading our sketchnote collections, we reflexively noted the ways our writing practice and academic identities changed over time. We hope that the stories and experiences shared here offer true representations, coherent narratives, and believable possibilities while expanding the landscape of academic writing practices (Ellis et al., 2011) with sketchnoting. Graphically speaking, we gained greater understanding through our shared writing as we disclosed the benefits, issues, and experiences of our academic and scholarly sketchnoting practice.

As noted in the individual sketchnoting stories below, each of the authors creates and designs sketchnotes in unique ways using a variety of analogue and digital tools, based on experience, preference, and purpose. Preferences include decisions relating to analogue or digital devices, tactic and haptic feedback, expressiveness and cognitive load, latency and accuracy, flexibility, and editing toward perfection (Camporro & Marquardt, 2020). Each individual story in the next section reveals a process of self-writing, of hupomnemata, as we create our academic and scholarly writing through our sketchnoting practice.

Our Sketchnoting Experiences

"To write is thus to 'show oneself,' to project oneself into view" (Foucault, 1983, para 17).

In the next section, we show ourselves as we write and graphically share our individual lived experiences with sketchnoting. We reveal specific logistical exercises when sketchnoting, our academic and professional use of sketchnotes, and how we come to share sketchnotes in our open educational practices as scholars and academics.

Sense Making Experiences With Sketchnoting - Helen DeWaard

My sketchnoting experiences relate to my efforts to make sense of complex concepts but also to creating learning objects for my course designs. My practice emerged from my passion for creating concept maps to frame a topic of inquiry in my teaching as well as challenges with concept understanding when learning in graduate studies programs. As part of my process of sense-making and building understanding, I turned to sketchnoting to grasp complex concepts. This is particularly noticeable in productions for my Ph.D. dissertation, where I sketched out conceptual frameworks. My research benefits from increased understanding as I sketchnote challenging concepts.

My process often begins with paper, pencil, and sketchbook versions of draft models or mock-ups. I iterate the design over time. Most times, I use an iPad with the Procreate app. In this software, I can start a project with a standard set of layers for banners, titles, text, backgrounds, icons, and hand-drawn images. I include a base grid or graph-paper-style layer, which is hidden in the final export. This is used to orient and size elements on the sketchnote. Since Procreate allows for layers to be moved or hidden, this helps me build and shape the sketchnote as I draw and write, but can be problematic when I forget to check which layer is currently being used.

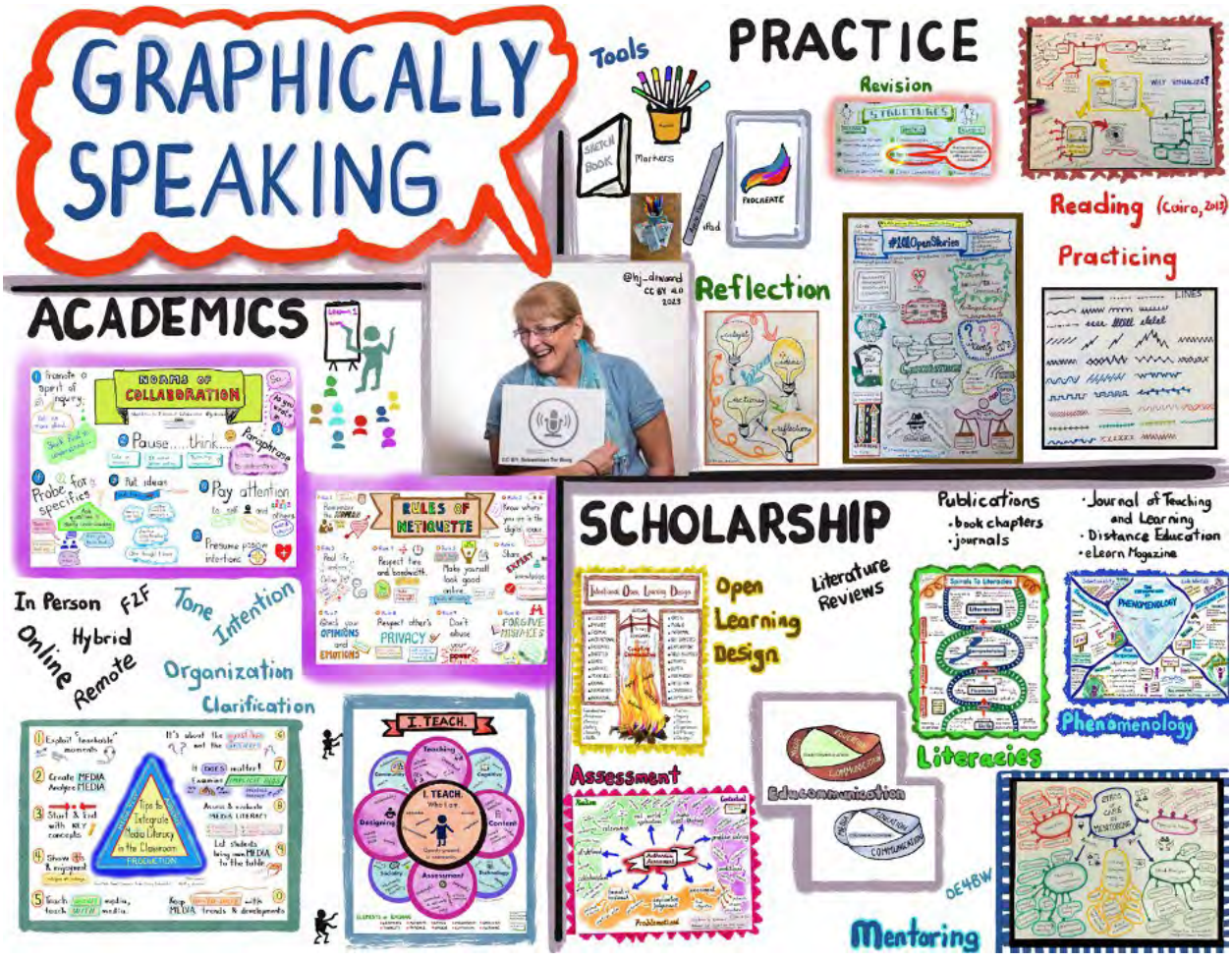
I sketch out complex topics, sometimes over months of reflection, integrating information from research literature. I move fluidly from the paper/pencil sketches on graph paper to the iPad version, while also dipping into graphic collections such as the Noun Project for ideas about simplified icons to use. I play with lettering styles, colour combinations, and pen and brush choices. Since my sketchnotes incorporate a full spectrum of colour, I frequently explore digital collections of hex codes on colour picker websites to ensure a blend of combinations that are compliant with web accessibility recommendations for all readers (DeWaard, 2016). I curate sketchnotes on a free Flickr account.

My sketchnotes are sense-making and meaning-making endeavours. As I reviewed sketchnotes I created when reading books on visualization design (Cairo, 2013, 2016), I was reminded of the challenges I faced in thinking in images rather than words, something I thought at the time

was as difficult as learning a second language. I became aware of the importance of the visual-brain connection and that sketchnotes, as representations of visual information, enabled deeper analysis, exploration, and discovery (Cairo, 2016) since my brain dictates what I pay attention to and incorporate into a sketchnote. I sometimes consider the design of a sketchnote with a metaphor or image that shares information within colours, layouts, text features, and icons woven into the graphic.

Figure 2

My Sketchnoting Within Academic, Scholarship, and Teaching Practices



Note. Compilation of sketchnotes created for purposes of academic instruction, scholarly reading and writing, and my reflective practices. Created using Procreate on iPad, by H. DeWaard, 2023. CC BY-NC-SA 2.0.

I create sketchnote graphics to connect ideas and concepts to my teaching as well as my own learning. In my work as a teacher educator, I explicitly share clarification of course concepts within a sketchnote. By integrating sketchnotes into course materials, I expand the landscape

for academic writing as I model alternative forms of media production for reading and writing for students in a faculty of education. My teaching focus is on media and digital literacies, so it is fitting that I apply varied and alternative media formats with my strategic and intentional inclusion of sketchnotes. Examples include the norms of collaboration, rules of netiquette, and the integration of media literacies into lesson plans (see Figure 1).

Although my use and inclusion of Creative Commons (CC) licenses have evolved over the years, it is now a standard item inserted into each sketchnote. I now also include a production date to support citation and referencing when using the American Psychological Association (APA) format for scholarly publication, as well as the text, author, source, and license (TASL) citation format commonly used for CC licensed digital objects. In this way, I expand the landscape of academic writing by highlighting and heightening awareness of copyright issues as I model open educational options for sharing under copyright and fair use permissions and protocols. I promote deeper thinking about ownership and authorship for educators with a view towards openly sharing education and learning material as a common good (Daviet, 2016; Paskevicius, 2021).

As part of my academic writing, I sometimes sketch a reflection of book chapters as a way of extending my understanding of what I read. This can be seen in my rendering of Mewburn and Thomson's (2018) writing "Towards an Academic Self," where I first encountered the notion of hupomnemata (DeWaard, 2019). I have successfully incorporated sketchnotes into peer-reviewed, academic journal submissions (DeWaard & Chavhan, 2020; DeWaard & Roberts, 2021) with varying degrees of difficulty. I tend to use colour as a key feature in my sketchnotes, so when required to recreate a sketchnote in a grayscale version to be included in one publication, I spent additional time duplicating and then removing colour from the graphic. For another peer-reviewed publication, I was challenged to ensure all references that were cited in the graphic were also included in the reference listing.

Sketchnoting Experiences and the Thinking Environment – Giulia Forsythe

My sketchnoting practice emerged from a combination of serendipitous interactions. As a young learner, I yearned for perfect note-taking skills, but I had difficulty writing notes using a linear method, as I believed that's what good note-taking looked like. Often, with great embarrassment, my pen would meander on the page, and I would end up doodling all over the page.

It wasn't until many years later that I was introduced to the notion of sketchnoting through online friends I had met in a massively open online course (MOOC) about digital storytelling, canonically known as #ds106 (DS106, n.d.). This open online course was like nothing I had ever experienced before or since. Through this network of people and collaborations, I discovered

the concept of visual practice. I learned that there were organizations and consultants that used graphic facilitation to support effective communication and strategic planning, such as Full Circle Associates (https://fullcirc.com/). The evidence of how impactful the use of imagery is in these in-depth conversations still astonishes me.

One of the collaborators of #ds106 spun up a freeform web-radio station (#ds106radio), which allowed anyone from anywhere to broadcast from their laptops and mobile devices. I was so enthralled listening to conversations, remixes of conversations, and lectures that I wanted to write down and document the ephemeral audio I was hearing. As I listened to lectures on my mobile device, I realized that I didn't need imagery to learn. I love listening. I just needed something to anchor my listening and help me maintain focus. It was the creation of imagery that helped me learn and remember. The drawings within the sketchnotes act as anchors in my memory. I'm often able to recall a very specific talk, concept, or phrase because my sketchnotes have supported my own learning. It has been my pure joy to see doodling in the classroom become normalized, but there is still a lot of work to do to allow sketchnotes to become a part of academic writing.

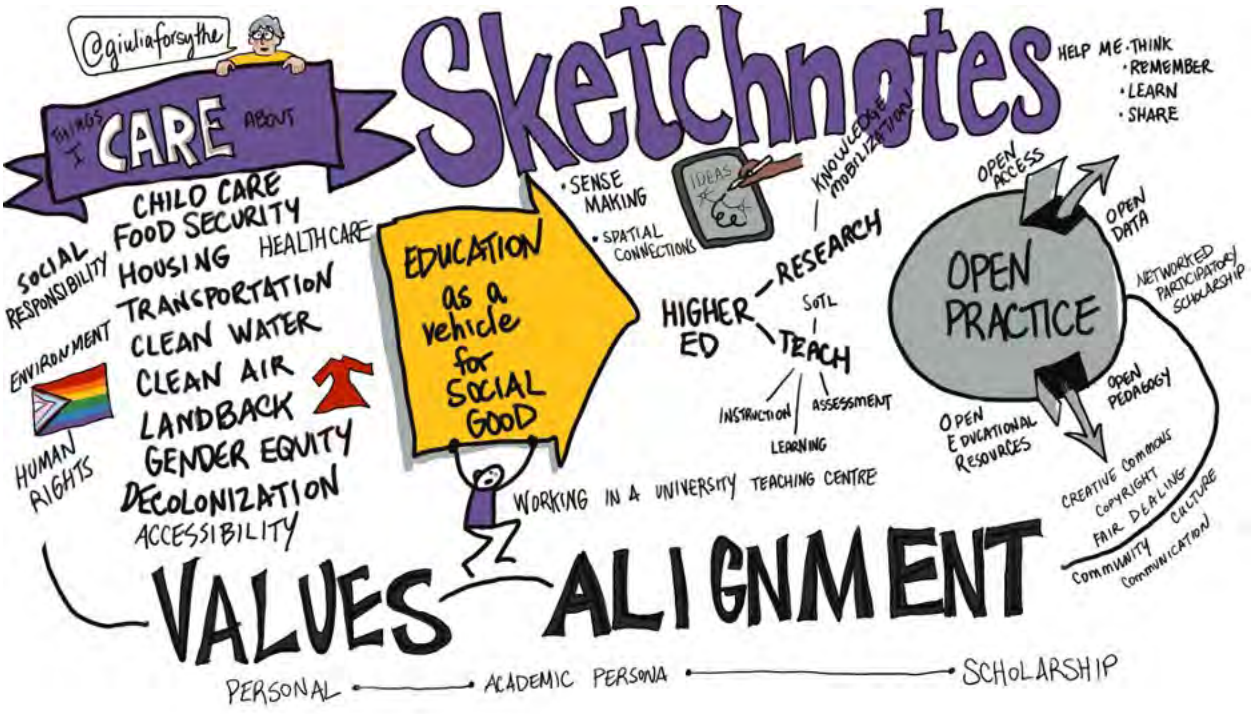
Over the years, I have created and curated, on a Flickr Pro account, over 470 sketchnotes from talks and conferences. I have given workshops and seminars to instructors and students on how to tap into their inner visual practitioner to learn, remember, communicate, and teach. I'm most proud of work that aligns with my values and speaks to why I have spent my career in teaching and learning in hopes that the work in a university can address many of the pressing issues of our time, as I've outlined in my sketchnote for this article (see Figure 3).

Most recently and most evidently, this can be found in my work with the Knowledge Equity Lab (n.d.) as their work aligns with my belief in epistemic justice as I question, "Whose knowledge are we privileging?" From my sketchnoting, I have come to understand that knowledge equity is intersectional and aims to decolonize education.

Expanding the horizons of what is considered scholarship has its benefits and challenges. Advocating for non-traditional forms of scholarship does come with many challenges, which is evident in this paper, where we are trying to redefine academic writing. Sketchnotes are one example of expanding ways of knowing and doing. I have found them exceptionally helpful to visualize thinking. This is especially beneficial when collaborating. In my work with the #FemEdTech network, I engaged with co-authors to co-create a "Thinking Environment" (Beetham et al., 2022; Bell et al., 2023). A thinking environment involves careful listening and turn-taking to speak without interrupting; therefore, I sketchnoted the recording of the conversations to facilitate careful listening and the collaborative writing process of an academic paper on the #FemEdTech experiences of care and justice in an OEPr (Forsythe 2023a, 2023b).

Figure 3

Values-Driven Sketchnotes



Note. Sketchnote outlining values, alignment, care, and practices when sketchnoting for personal, academic, and scholarly purpose. Created using Procreate on iPad by G. Forsythe, 2023. CC BY.

My sketchnotes are primarily digital, though I sometimes work on paper. I prefer digital for the flexibility that layers, zooming, and fast editing allow. I have tried a variety of different hardware and software over the years, as I like to remain technologically agnostic. Currently, I'm using Procreate on an iPad Pro. I begin with a black line drawing, which I will create at the pace of the speaker. When there are meanderings or less content-heavy discussions, I create a layer below the black line and begin the colouring process.

Early in my drawing process, I was given advice about constraining my colour palette to allow for maximum clarity and increased aesthetics, which is why you'll often see only grayscale and two complementary colours at most in my sketchnotes. I find the soothing process of colouring helpful to keep my focus and attention on what the speaker is saying. I have not found any other way to stay completely attentive for full-hour lectures.

I create sketchnotes from sources other than listening, for example, summarizing a reading or my thoughts, as seen in Figure 3, although that is not my preferred method because I tend to

overthink and overwork the notes. Creating drawings within the time constraints of a specific lecture is more gratifying for me to create.

As an academic administrator, I have found long-form writing difficult and unrewarding. My primary audiences for teaching and learning policy and support do not have time to read pages at length. Sketchnotes and visual accompaniments embody the principles we are trying to convey around supporting learners towards mastery (Forsythe, 2012). From my work with various audiences, I have found this to be true for all levels of learners, from K-12 to undergraduate and graduate students and faculty alike.

Doodling Experiences to Create Sketchnotes – Debbie Baff

I have always been what I call a doodle-scribbler. I find that I think better with a pen in my hand. Creating sketchnotes helps me see connections. While I have been creating and sharing my sketchnotes for nearly 10 years now, I have been playing with sketchnoting for a lot longer than that. My sketchnotes have meaning for me but have also been well received by others (i.e., in Padlet) in terms of general appreciation and inspiring people to take up sketchnoting. I use sketchnotes for both personal and professional parts of my life. The main benefit for me is that they help me think and make sense of things (Baff, 2020a, 2020b).

I used to use paper and pens to create sketchnotes, but these days I am more comfortable using my iPad to create and draw. While buying the iPad together with an Apple Pencil was eye-wateringly expensive, it was one of the best things I have done. Over the years, I have experimented with different apps such as Paper, Concepts, Procreate, Sketchbook, Inkflow, Tayasui Sketches, Autodesk Sketchbook, and Goodnotes. I found it challenging to use some of the more professional applications like Procreate, where you can have advanced aspects like layers, so I ended up gravitating back to other tools that just have one layer, like Goodnotes or Paper. Although my favourite for years was Paper, I have settled now with Goodnotes as I find this easier to use, I prefer the look and feel of the app, and it synchs more easily with my Google Drive.

At first, I didn't share my sketchnotes. I found it could be challenging to feel vulnerable by putting myself out there. It took a leap of faith to share them with anyone. With feedback from others about how my sketchnotes helped them make sense of things, I have grown in confidence over my years of sketchnoting. I am still finding and developing my academic voice, but I feel that a key benefit of creating sketchnotes is that they enable me to communicate more authentically. It allows me to be me, and, in this way, I feel I am able to contribute to the academic conversation. I fill my sketchnotes with things that matter to me. I share my sketchnotes on social media, Instagram (Baff, 2022), via my blog (debbaff.com), and curated on Padlet (Baff, 2020a, 2020b), as a record for my own reflections but also for others to review and

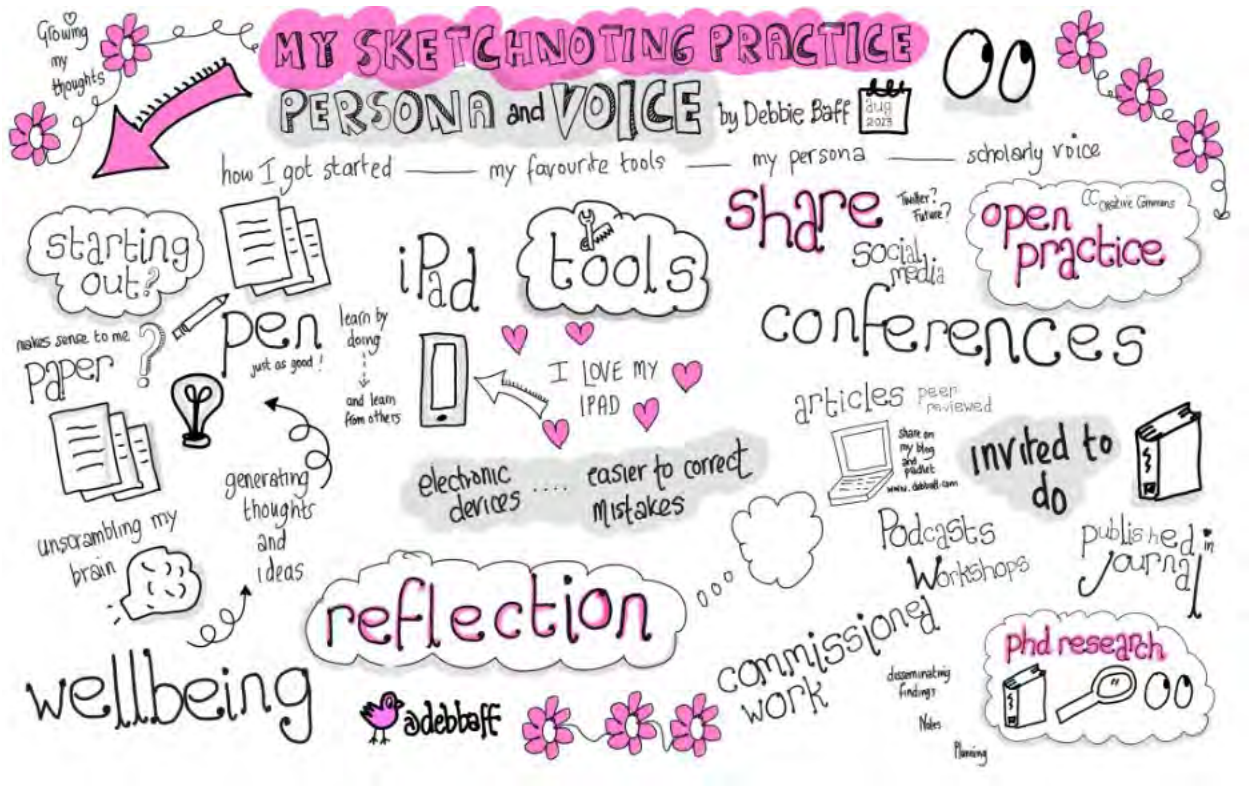
enjoy. I have been thinking about sharing them on LinkedIn as well. I have recently published some of my sketchnotes on the National Teaching Repository (NTR). Uploaded items automatically generate a digital object identifier (DOI) number, which can be used for citations and APA referencing. I hope to publish and upload more of my sketchnotes on NTR. I have published sketchnotes in a peer-reviewed journal as a reflective article outlining my sketchnoting journey, with specific reference to using them for my Ph.D. research (Baff, 2020a, 2020b).

In my Ph.D. research, I am using a heuristic inquiry-inspired methodology (Moustakas, 1990), as this allows me to incorporate creative expression through sketchnotes. I intend to "transform the data from its original format into a creative and aesthetic illumination" (Sultan, 2019, p. 154) to bring my research to life. I have used sketchnotes in my Ph.D. to make connections, to summarize journal articles, and to express my feelings. This is usually related to difficulties I have where metaphors spring to mind, such as not being able to see the wood for the trees or being stuck in a hamster wheel. I used sketchnoting to draw out my early thoughts for my Ph.D. proposal, which helped consolidate my thinking and share my plans with my supervisor.

I have taken part in sketchnote events such as World Sketchnote Day and #Sketch50 and have run workshops to help other people. Creating sketchnotes and sharing them on social media led to an opportunity to lead an introduction to sketchnoting workshop for doctoral research students, where I shared my experiences and encouraged participants to reflect on how sketchnotes could be used in their research. I have shared some of the resources from that workshop on my Padlet, including a set of handy Ph.D.-related icons that might be helpful. I was also commissioned by Dr. Sarah Lambert to undertake some sketchnotes to help portray the results of her Ph.D. research. I was delighted and privileged to do this, since Sarah is not only a fellow Global OER Graduate Network (GOGN) member but also a scholar of open education and social justice (Lambert, 2019). My sketchnotes are published on the Global OER Graduate Network blog (Lambert, 2021) with Creative Commons licenses (Creative Commons, 2020). I was invited to be a guest on the Sketchnote Army podcast (Rohde, 2021). I must confess to being completely starstruck when I met Mike Rohde, since his book *The Sketchnote Handbook* (Rohde, 2013) has been such a help to me over the years.

Figure 4

My Sketchnoting Practice, Persona, and Voice



Note. Sketchnote showcasing tools and technologies used when modeling persona and voice within sketchnotes for reflection, sharing, and open practice. Created using Goodnotes by D. Baff. CC BY.

Discussion

"Graphical excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space" (Tufte, 2007, p. 51). Each of our sketchnoting practices has evolved in uniquely individual ways. The crafting of our scholarly writing persona and presence is evident in the stories of our lived experiences and motivations when creating and sharing graphic writing. Sketchnoting is a form of memory-keeping, an extension of our cognitive capacities, a way of remembering events in academic conferences, and a recall of academic materials we read. We use sketchnoting as a form of sense-making to gain a deeper understanding. This is reflective of the research on dual coding (Paivio, 2010), cognitive load theory (van Merrienboer & Sweller, 2005), and the theory of multimedia learning (Mayer, 2002).

As part of our instructional practice, sketchnotes support the reduction of cognitive loads that occur in learning events. As suggested by van Merrienboer and Sweller (2005), sketchnotes within our course designs support students' mental capacity by providing a schemata or mental model relating to course concepts. This is reflective of the research cited earlier from diverse fields of study such as science, engineering, medicine, and forensics. As part of our instructional practice, we support the expanding opportunities for voice and choice in writing that are offered through the inclusion of sketchnotes as components of assignments. It is a reduction in cognitive load for both the instructor, who may be creating the graphic representation of complex course content, and the students who view, read, or create sketchnotes as part of their academic writing and reading practice.

We share our sketchnotes in different ways through open web publications such as blog posts, Flickr images, and Padlet collections. Shared sketchnotes are a form of thinking aloud and learning in public. Our sketchnoting practices in academic and scholarly writing are works in progress, as a form of hupomnemata revealing and developing ourselves as academics and educators, making sense of ideas, and crafting our sketchnotes.

There are issues when sketchnoting in an academic writing practice. During the collaborative conversations held while drafting, writing, and revising this paper, we reflected on gaps in our awareness relative to accessibility and our lack of efforts to ensure our skechnotes are web-accessible for all readers (Kamppari-Miller, 2022). Although each author understands that sketchnoting can be incorporated into choices and options under universal design principles, it was during the writing of this paper that we reflected on the essential work we must conduct to expand and enhance the accessibility of sketchnote graphics by following web content accessibility guidelines (World Wide Web Consortium, 2023), as modelled by Kamppari-Miller (2022). This is an area of challenge for academic writers as we consider how our sketchnotes can be accessed by all readers in open spaces.

The publication of sketchnotes in academic journals comes with issues for scholarship and writing within peer-reviewed publications, particularly as citations and references are required to follow procedural guidelines, such as those outlined by APA. When publishing sketchnotes in academic journals, Helen was reminded to include all references for sketchnote content in the reference list for final publication, as well as adjust from a full spectrum of colour to graytones in a sketchnote for a book chapter manuscript since the publication was intended primarily as a print copy, which makes colour inclusion in graphics a more expensive consideration. However, Debbie's manuscript with colourful sketchnotes and uniform resource locator (URL) links was accepted for publication since the journal was a web-version of the journal, making these elements readily available to readers.

One final consideration for sketchnoting in academic publication touches on issues relevant to equity, diversity, and inclusive contexts. When publishing visualizations and information communicated in graphic form that is shared through open web or journal publications, considerations should ensure that sketchnotes intended for wider academic audiences address issues of power and hegemony by honouring diverse voices. Deb's and Giulia's stories reference relevant examples with the Knowledge Equity Lab (Knowledge Equity Lab, n.d.) and Lambert (2021).

Recommendations

Sketchnoting is an art that takes practice. Graphically thinking and speaking is like learning a new language, so take time to explore, gain experience, and exercise what you learn. Developing a visual vocabulary and curating your preferred collection of icons and images are effective sketchnoting strategies. From our experience, we suggest starting slowly and building a graphic writing practice through reading, listening to graphic artists' stories, and viewing graphic writers in action, either live or through video and audio recordings (Rohde, 2021). We recommend opening and sharing your practice of sketchnoting and graphic rendering of ideas, conversations, and connections. Turn to the open educational communities where others share their sketchnoting practices and insights and where you can safely share your own learning (Fernandez-Fontecha et al., 2019). In an open blog post, we share additional information about our personal preferences, such as tools we like to use or techniques we apply when sketchnoting, and people to follow when looking for models and alternate strategies (DeWaard et al., 2023). To grow and develop your skills, fluencies, and competencies as a sketchnoter, take time to reflect as your sketchnoting practice emerges and as you create your identity as an academic and scholar.

Conclusion

We suggest that sketchnoting supports the expansion of what is considered to be academic writing. Our academic writing with sketchnotes includes web-published academic works, such as research outputs and teaching materials, as well as traditional peer-reviewed publications. Sketchnoting supports our ability to listen deeply during presentations (Giulia), plan and organize Ph.D. research (Debbie), make sense of complex concepts, and reflect on learning (Helen). We hope to expand the landscape of academic writing with our sketchnoting as part of an open educational practice. As a result of this collaborative autoethnographic study of how sketchnoting has helped us constitute our academic self through writing and crafting sketchnotes to communicate, we better understand how dual coding theory, cognitive load theory, and the cognitive theory of multimedia learning have shaped our sketchnoting practice.

As part of our authorship and scholarly publication practice, we suggest a good sketchnote is an instrumental addition and alternative form of academic writing for both publication and education. Sketchnoting can be a form of hupomnemata, as our sketchnotes sometimes become "raw material for the drafting of more systematic treatises" (Foucault, 1983, para. 5) while shaping an academic self as we think, remember, and craft our academic writing practice. This is modelled by Helen within her Ph.D. dissertation (DeWaard, 2023b). Sketchnotes become useful as OER and as contributions to a polyvocal, participatory, connected, and collaborative open educational practice (Tietjen & Asino, 2021). Sketchnotes are an engaging form of academic discourse, publication, and educational communication that honours voice and choice.

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