Drawing as Process, Drawing as Creation

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Background
Before I examine the different pedagogical approaches for drawing and sketching by two Swiss professors, one from the school of architecture, and the other from the school of business, I would like introduce a unique alternative vocational model that exists in Switzerland, where pupils, instead of going directly to college from secondary school, pursue a Berufsausbildung, known as apprenticeship in the rest of the world. This model is well established in Switzerland where 40% of employers offer apprenticeships, and two-thirds of high school graduates participate in them. An apprenticeship takes two to four years, depending on the required skills and ranges from handcraft (mechanic, carpenter, baker, hairdresser etc.) to office (secretary, bookkeeper, IT specialist etc.) and many other occupations. The apprentice will be trained at a company or organization, while simultaneously attending vocational school one or two days a week; they are also highly regarded and well paid throughout the apprenticeship.

This Swiss educational model is so fundamental that it plays an important role in Swiss culture. This apprenticeship model drives all pedagogical thinking and initiatives through the setting of high standards and expectations at all levels: associates, bachelors, masters and doctoral curriculum. For the profession of draughtsman, the Swiss Society of Engineers and Architects creates standards that provide recognized and indispensable regulations for planning and construction in Switzerland. These standards and the corresponding codes of practice and documentation are drawn up on the basis of parity by planners, building owners, contractors, suppliers, public authorities, universities and colleges (Fig. 1).

Figure 1. Triple educational model consists of business, subject-oriented introductory courses and vocational school. Source: Überbetriebliche Kurse, Kurskommission, Kanton Aargau, Switzerland, 2009.
Table 1. Characterization of the Swiss Society of Engineers and Architects draughtsman working documentation

<table>
<thead>
<tr>
<th>Goals</th>
<th>Function</th>
</tr>
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<tbody>
<tr>
<td>Training of spatial projection</td>
<td>Performing as communication device</td>
</tr>
<tr>
<td>Training to see and sketch simultaneously</td>
<td>Detailing developing methods</td>
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<tr>
<td>Promoting integrated thinking</td>
<td>Recording impressions</td>
</tr>
<tr>
<td>Recognizing concepts holistically</td>
<td>Recording self-reflection</td>
</tr>
<tr>
<td>Encouraging constant sketching and note-taking</td>
<td>Recording trial and error</td>
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For this paper the standard SIA 1073/1 Anhang zum Modell—Lehrgang für Hochbaumeister/ Hochbaumeisterinnen—Erklärung zum Arbeitsbuch is important (In English it would read as the standards of working documentation for apprenticeship as a draughtsman). (1) In this particular case the standard explains sketching as an important part of the Swiss educational mission for a draughtsman. Its goal to produce extensive compilations of concepts as explained in Table 1.

In this context, the work of Peter Jenny, a Professor Emeritus and Chair of Visual Design at the Swiss Federal Institute of Technology (ETH) and Martin Eppler, a Professor of Media and Communication Management at the University of St. Gallen needs to be recognized (2, 3). Both educators practice teaching methods for creative thinking, underlined by techniques of representation through drawing and sketching. In this paper the terms drawing and sketching are used interchangeably as tools for knowledge construction and sharing.

What is Peter Jenny’s teaching concept?

Professor Peter Jenny believes one shouldn’t teach only drawing skills, but also visual perception and the joy of experimenting and using one’s imagination. In his two volumes Bildrezepte (Image Recipes, 1996) and Bildkonzepte (Image Concepts, 1996) Jenny explains the aim of reasonable and free association in the process of organizing, forming and interpreting content, as well as engaging the senses through the process of motive assemblage (4, 5). Based on these initial volumes, he created a series called “Learning to See”, which offers a mix of inspiration, encouragement, and easy-to-complete exercises designed to build confidence through rapidly filing the pages of the participant’s sketchbook. Each pocket-sized volume begins with a short introduction, followed by twenty-two exercises that help readers discover their own individual art-making style. In the first book The Artist’s Eye (2012) Jenny teaches the reader to discover art in everyday objects (6). In his second book, Drawing Techniques (2012), Jenny explains how actions such as gesticulating, touching, feeling, doodling, and moving become the starting points for putting pen to paper (7). His third book, Figure Drawing (2012), focuses on the archetypal presentation of the human figure (8). Jenny’s fourth book, Unlearning to Draw (2015), looks to the art of children and outsider artists for inspiration, advocating a return to carefree, untrained drawing and a renewed focus on the joys of making rather than on the end result (9). In fifth and last book of the series, The Kitchen Art Studio (2015), Jenny turns the old adage “Don’t play with your food,” on its head by encouraging readers to discover the creative energy hidden in their pantry (10).

In a 2006 exhibition entitled “Metaphors of Perception”, held in the architectural foyer at the Swiss Federal Institute of Technology, Jenny’s emphasis was not on the creation of an object as the primary goal, but rather on freely practicing drawing instead of creating art. Whether one’s mind wanders while sitting on a plane, or looking into a refrigerator, a piece of the world can always reveal itself, even if it requires a second glance. Even banal objects can be perceived in multiple ways. Jenny’s primary goal is not to teach drawing skills, but to develop the enthusiasm and imagination to overcome preconceived societal understanding of what an object is. Jenny espouses creating new associations by placing objects out of context in order to form a personal relationship, which in the end becomes intimate authorship. This idea was exemplified in his combined exhibition and books, where objects are not simply objects; they can be formed, independently and constructively, through the eye of the beholder, into different associations from the original object.

What is Martin Eppler’s teaching concept?

In Eppler’s first book with Roland Pfister Sketching at work: A Guide to Visual Problem Solving and Communication (2010), the emphasis is on individual thinking as an interpretative process through articulating essential conventions, stimulating different viewpoints, and extrapolating trends into the future (11). His second book with Pfister and Friederike Hoffmann, Creatability (2014), explains the commonality of creativity as an innovative method in the development of ideas in teams (12). In his third book, with Sebastian Kernbach and Roland Pfister, Dynagrams—Denken in Stereo (2016), they present...
the 30 most important interactive charts for analysis, diagnosis, creativity, decision-making, planning, coordination, communication and presentation (13).

Professor Eppler's team at the Media & Communication Institute of the University of St. Gallen explores the downsides of using PowerPoint and pre-printed handouts as collaboration tools in meetings. What generally occurs when facilitating a meeting using PowerPoint slides, is the team immediately swings into presentation mode, instead of the appropriate discussion mode needed to solve a problem. PowerPoint is a presentation tool, not a collaboration device. With the introduction of his Sketching at Work, Eppler explains new sketching concepts that can stimulate systematic, collaborative and creative thinking in meetings.

Within such meetings, the participants learn to identify the problem and its root causes, then use arrows to connect the causes to the problem. Commonly, all participants are standing in front of a whiteboard or flip chart easel and are involved in the process. Using the visual language allows for more creativity, out-of-the-box thinking, and motivates all participants to play a part in the discussion. As a result, they become more confident regarding the outcome and they also feel more committed to their final decisions, as they were reached in a collaborative and engaged manner.

Discussing and capturing ideas with sketched visuals is an unusual, but highly effective way of supporting the joint sharing and integration of knowledge in teams. Using this approach does not require sophisticated design know-how, nor does it have to rely on a costly infrastructure. Sketching offers a natural "third way" to replace static, one-way slide presentations and/or unsystematic, fleeting conversations. Participants are able to combine the simplicity and immediacy of drawing with the clarity and richness of visual slides.

A comparison application of sketching
The differences in the application of sketching and its outcome between Peter Jenny and Martin Eppler become even more clear when compared to the typical approach and understanding of sketching. An empirical table presents and discusses sketching as a framework for teaching and learning in the context of drawing as process and drawing as creation (Tab. 2). It also represents the main purposes and primary functions that are the outcomes using either Jenny's or Eppler's approach.

Both Swiss educators believe that through drawing our observations, we can discover the conceptual nature of design solutions, which in turn becomes the basis for our own creative inquiries into a record of thoughts, ideas and visions. It may sound simple, but it's actually quite complex, because the act of drawing and sketching varies according to an individual's personal style, visual thinking and imagination, and is also related to one's context and culture. Both educators see sketching as a form of auto-reflection that encourages the mirroring of events that may not be noticed by the conscious mind, and daydreams that occur frequently in different working and life settings. Within this commonality, differences still exist in Jenny and Eppler's approaches to teaching, driven by the understanding that architecture and business strategies and techniques are not inherently treated in a similar fashion.

Four theses were developed from the comparison table to provide specific examples of Jenny's and Eppler's approaches to sketching and drawing; both are a representative and nonconventional form of pedagogy. The first thesis addresses how to overcome an emotional threshold to restart, even as adult, drawing and sketching. Most adults don't believe they have any talent in drawing. The second thesis is about the collaborative nature of sketching that facilitates the communication of ideas between others. The third thesis discusses the discovery that occurs through sketching as an essential activity, which is the opposite of training. The fourth thesis explains Eppler's definition and application of CARMEN as an instrument of questioning one's own beliefs and assumptions, and through active engagement with the perspectives of others (11).

Thesis 1

Table 2. A selected comparison of a typical, Peter Jenny's and Martin Eppler's application of sketching

<table>
<thead>
<tr>
<th>Typical application of sketching</th>
<th>Peter Jenny's application of sketching</th>
<th>Martin Eppler's application of sketching</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Idea generation</td>
<td>• Relearn to think visually</td>
<td>• Guide discussion</td>
</tr>
<tr>
<td>• Concept generation</td>
<td>• Creation of cultural commodities</td>
<td>• Organize information</td>
</tr>
<tr>
<td>• Problem solving</td>
<td>• Break rules</td>
<td>• Facilitate planning</td>
</tr>
<tr>
<td>• Graphic representation</td>
<td>• Explore the language of images</td>
<td>• Aid analysis</td>
</tr>
<tr>
<td>• Sketches as notes</td>
<td>• Accept unreliable information</td>
<td>• Encourage participation</td>
</tr>
</tbody>
</table>

Communicating SPECULATIVE and CREATIVE Thinking
"Unlearning to draw? Ignoring perspective? Scrawling, scratching, scribbling? Refusing to differentiate between a 'right' and 'wrong' way to draw is likely to provoke consternation and raised eyebrows, but refusing to fulfill expectations is precisely the point here, since raised eyebrows generally signify readiness to ask questions" (9).

Thesis 1 features Jenny's origin for the twenty-two exercises in Unlearning to Draw, in which he urges readers to de-familiarize themselves with characters and objects that surround them and then to explore more transformative and interpretative meanings that broaden our horizons (9). He asks the reader to put aside pre-existing emotional connections that images create in the mind and reassess an impression with fresh eyes and a sense of detachment. There is a chance one will see a great drawing possibility that's being overlooked, or a not so convincing convention being favored. The well-known idiom, "one man's trash is another man's treasure" means that what makes sense to one is nonsense to another. Inherently, sketching is the ideal form of freedom of interpretation and articulation that provokes thinking or changes in thinking, and is emphasized by both Swiss educators (Fig. 2).

Thesis 2

"Sketches serve as an easy referent for words and gestures, so deictic expressions like here and there and this part and that way simultaneously make communication easier and more precise" (14). Thesis 2 refers to the work of two psychologists, Tversky and Suwa, who have extensively researched the topic of sketches that promote collaboration. Eppler builds on their work by promoting the idea of sketching at work as a collaborative communicative tool (Fig. 3). In the collaborative setting, sketching drives to build concentration and ensure all members of the group are considering the same thing. It helps to streamline the communicative process using gestures, such as pointing and tracing, to convey spatial information clearly and immediately and to facilitate proposing, comprehending, and revising routes that can occur without judgement. This supports a common ground for conducting a meeting, coordinating a project team, selling a product or service, analyzing a problem, negotiating a contract, improving a business process, planning a project, task or event, and can apply in many other contexts as well.

Thesis 3

"A successful drawing is never the result of the expression of a single sense—it emerges when one is able to supplement what is missing using another sense. (The senses are social: should one fail, the others will come to its aid.) In drawing, the word right is thus synonym for meaningful. These observations seem to refer to a withdrawal into the corporal—to simply rely on one’s senses. By itself that would be too little, however. Drawing also means opening up by communicating something" (7).

Thesis 3 discusses Jenny's claim that if anyone who sketches and draws replaces the word "teach" in his/her vocabulary with the word "discover", it will tell us more about the originator's character, preferences, and artistic personality. The sketcher will notice more speculative and utopian features in the work that go beyond personal background, talent, or cultural inheritance, to include a reflection of one's desire to change the world. It reveals that all of our senses can inform how and what we draw by using our ears, our fingers, our nose, and our tongue (Fig. 4). Thesis 3 also includes references to Paul Klee’s Pedagogical Sketchbook that couldn’t have been written as an academic textbook because his mind is so in flux and sensitive to intuitive insights that only a sketchbook can translate and represent Klee’s inductive vision (15). He relates the natural object not
primarily as a rendering of two-dimensionality but as how it should be seen: through "räumlich" (spatial effects) as it relates to physical and intellectual space concepts (16).

**Thesis 4**

"Captivating: The moment you start drawing, people give you all of their attention. Automatic: Simple sketches are automatically understood, even by a diverse audience. Revisable: Sketches invite modifications and thus support creative group work and rapid improvement. Memorable: Sketching creates memorable experiences—sketches are remembered much better than bullet points. Energizing: Drawing activates people’s creative and analytical potential and keeps them focused and engaged. Natural: Everybody knows how to draw simple sketches and can thus participate in sketching or extend an existing one" (11).

Thesis 4 explains Eppler’s acronym CARMEN, a teaching method that uses gestures such as pointing, labelling, connecting and tracing to convey verbal information clearly and immediately, and to facilitate proposing, comprehending, and modifying paths (11). Gestures (using our hands as we speak) are important and are used to explain, illustrate, support and emphasize opportunity. Drawing in the air can translate meaning into symbols, forms, circles, pyramids, paths, letters and other fragments in various sketching configurations, for example the argument sketch (Fig. 5). Eppler’s Sketching at Work contains thirty-five templates: a causal map, an evidence pyramid, a funnel, a goal chart, paths to success, and a strategy canvas, among others, for application in five categories: planning, meeting, selling, analyzing and communicating (11).

**Translation from Thoughts into Visual Articulation**

As presented, the four theses examine the different educational approaches between two Swiss professors, one from the school of architecture, and the other from the school of business. One commonality that exists in all four theses is that drawing and sketching depend heavily upon learning to be able to see and observe fully, as well as upon translating and transposing those visual perceptions onto paper. The ideal platform for sketching is where thoughts are translated into visual articulation. During that process, mistakes, changes and discoveries have equal merit as the final product, i.e.: the drawing itself. This is especially important in the application of shared sketching, which promotes collaboration in multiple ways. In a collaborative setting, sketches represent the ideas of each member of the group and not any individual, and they are based on the visual cues of sequences, including timing, hesitations, returns and re-drawings.

In essence, through the process of remembering what he/she thought was relevant and irrelevant in a sketch, every participant becomes committed to the final outcome. A precursor for both professors is Le Corbusier’s 1960 book, Creation Is a Patient Search, subtitled A Self-Portrait, in which he describes drawing as a continuum: observing—discovering—inventing—creating (17). In other words, both Swiss professors teach that thinking is best described as developing a sensitivity for, and awareness of, visual

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**Figure 5. Variations of argument sketch, 2016**

Source: Author
Drawing as Process. cues, communicative articulation, and relationships. The emphasis here is on the word relationship, which indicates that a position has been taken, while providing a measure against which decisions and conclusions can be evaluated and alternatives weighed. Both educators see sketching as a generative tool in which the contributors can test their conceptual notions and visions in relationships to a set of goals or parameters. Embedded within sketching is the seed for the continuing development of the study and project, which in a sense, is pregnant drawing.

To that end, I have chosen the term *Beziehungsgeflecht* (relational network) to summarize the pedagogical thinking and influences of Peter Jenny and Martin Eppler (Fig. 6). I am using the term to refer to the re-contextualization that occurs in sketching through representing the social, psychological and aesthetic dimensions. First is encouragement—if you’ve got a hand, you can draw. Secondly, shared sketching is an effective device for enhancing collaboration, both on an abstract as well as concrete level. Third, sketching functions as a laboratory for exploring the relationship between our senses and the free association of visual stimuli (19). Finally, even sketching driven by a directive such as templates, provides a point of departure that promotes dialogue as well as facilitating memory, reasoning, and insights. The four theses presented in this paper should not be seen as a single application, but rather as an opportunity for combination and further investigation by envisioning alternative futures in sketching. Both educators believe in sketching and drawing as a visual form that does not focus on the familiarity of the observer with sketching or drawing, or on his or her previous experience with it. In addition, one should not rely on a prior positive or negative exposure to a graphic representation to determine expectations and attitude, but instead should see sketching as an avenue to holistic thinking and understanding of an object and/or finding a solution for a problem. In the end, the pedagogical goal is to ask participants to be very flexible and diverse in their approach to sketching and drawing, since most work and life problems we encounter require specific solutions. However, there are still issues that can be further explored and researched on the application of visualization hybrids as a form of sketching and drawing. This may also apply to different contexts, such as: mapping and tracking information randomly, organizing and categorizing information into not yet known regularities; or as decision-making tools that can act as a repository for random ideas.

References and Notes
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2. Peter Jenny was born on May 16, 1942 in the canton of Glarus. He attended the legendary Zurich School of Design which emphasizes the Bauhaus tradition of education. From 1955–1972 he worked in the cultural field as a designer. During the same period, he was an editor for the cultural monthly magazine “Du”. Early on he conducted lectures on visual communication, developed teaching concepts for different types of schools, and created international exhibitions. Starting in 1975, Jenny became a lecturer in the Department of Humanities and Social Sciences at the ETH on the subject of experiments in the pictorial representation of people. Peter Jenny has inspired generations of architecture students at ETH Zurich to draw. From 1977 to 2007 he was a professor of Visual Arts and from 1990–1993 Head of the Department of Architecture. Since his retirement, Jenny has worked as a designer, author and advisor to cultural foundations and universities.
3. Eppler received his Master’s in Management from

Figure 6. Diagrammatic relational network involving sketching, 2016. Source: Author.
the University of St. Gallen in 1996, and had also studied at Boston University and the ESCP Europe. In 1998 he received his PhD in Management from the University of Geneva with the thesis entitled "Informative Action: An Analysis of Information Overload in Management." Back at the University of St. Gallen he received his "habilitation" for Management, with an emphasis on Information and Communication Management, in 2003. Soon after, Eppler was appointed Professor of Information and Communication Management at the University of Lugano, and since 2009 he has been a Professor of Media and Communication Management at the University of St. Gallen, and is director of its Institute for Media and Communication Management.

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