

Documenting A Personal Thinking Language

Neal Shambaugh, West Virginia University, USA
Cindy Beacham, West Virginia University, USA

Abstract: A personal thinking language consists of a mix of verbal and visual means to transform ideas and perceptions to action in social and working settings. This verbal and visual interaction of images and language is influenced by one's personal history, cultural expectations, and professional practices. To document a personal thinking language, a visual guidebook is suggested. A visual guidebook is a generic label for a learning product which organizes objects, ideas, or experiences visually with supporting text. Visual guidebooks provide three benefits: examination of how one thinks and works, documentation of personalized thinking tools in professional settings, and a portfolio product for students in academic programs. A conceptual background identifies the role of personal, cultural, and professional influences; individual characteristics, and the nature of action in work. A personal thinking language is described by first relating the idea to other languages (e.g., design, private languages), the benefits of a personal thinking language, and identifying features. Recommendations for implementing a visual guidebook, documenting a personal thinking language, are provided for both academic and professional settings.

Key Words: Design languages, Design thinking, Design tools, Metacognition, Private languages, Thinking languages, Visual guidebook

Introduction

A personal thinking language consists of a mix of verbal and visual means to transform ideas and perceptions to action in social and working settings. The first section of this paper provides a conceptual overview of individual influences, individual characteristics, and workplace actions.

The personal thinking language is introduced in the discussion of individual characteristics as a feature of humans. The second section defines a personal thinking language, identifies three benefits, and compares it to related design language and private language. Categories of a visual guidebook to document a personal thinking language are identified and described with examples provided. The third section of this paper recommends how to implement a visual guidebook to document one's personal thinking language in both academic and professional settings. A visual guidebook is a generic term for a learning product where students visually organize objects, ideas, or experiences in some way. Part of the learning is establishing a category system for the collection of visuals, identifying candidates, and writing about the selections, and overall reflecting on the activity and how one learns from the process.

Conceptual Foundation

Figure 1 visualizes how a personal thinking language can be situated conceptually for an individual within professional work.

<i>Influences</i>	<i>Individual Characteristics</i>	<i>Workplace Action</i>
<ul style="list-style-type: none">• Personal history• Cultural norms• Professional practices	<ul style="list-style-type: none">• Bio-psycho-social traits• Verbal-Visual processing• Personal thinking language	<ul style="list-style-type: none">• Problem solving or problem-framing• Design decisions, revision, communication

Figure 1. Visual conception situating personal thinking language within the individual and workplace.

One's personal history, cultural norms and expectations, and professional practices provide influences as to how the individual makes sense of and acts within the world (column 1). Individual characteristics in this paper refer to one's overall bio-pyscho-social traits and how one integrates verbal and visual messages and develops over time a personal thinking language (Figure 1, column 2).

One specific purpose for this human processing system is to produce decisions, responses, designs, and other forms of action to address human needs (Figure 1, column 3). The type of workplace action may be driven in the professional setting as problem solving (science, engineering, computer science) or problem framing (design disciplines, creative endeavors, management). One aim for a visual guidebook is to assist the individual designer become more aware of how one thinks and processes new information into designs for clients.

Documenting one's personal thinking language creates a portfolio artifact that is both reflective and developmental, as well as a possible showcase artifact. A visual guidebook is proposed as a means to document a personal thinking language. The guidebook, which can be both digital and physical, provides a working document for one's personal use, a learning product in educational settings, as well as a potentially new component to a professional portfolio. The second section of this paper discusses related languages, identifies three benefits to documenting a personal thinking language, and provides sample categories and examples.

Personal Thinking Language

Language in general refers to a human ability to learn and use systems of complex communication, a unique feature that relies on social convention and learning. The complex structure of language provides a wide range of possible expressions and uses. This section first summarizes similar forms of thinking languages, second, the benefits of a personal thinking language, and third, identifies features of a personal thinking language.

Related Types

Related type of thinking languages exist, including design languages, problem solving languages, knowledge base maps, and private languages. Overall, the value of these thinking languages enables humans to think about things in a non-linear fashion as opposed to Western languages basic linear sentence construction.

A design language is a systematic approach to guide or communicate the design of products or plans. Some design languages may be rigorously defined, as in software object modeling, structure diagrams of organic and inorganic compounds, or architectural blueprints. Other design languages organize how one sees or designs in a general way such as a pattern language, architecture description language, or graphical user interface. Symbolic means of representing this design language is referred to as a notation system and provides a public system of communication, while the design language may be less explicit. Waters and Gibbons (2004) describe two types of dance notation systems, Sautton and Laban, of which the Sutton system bring up mental images of a dance and serves to connect to the sensory experience of movement facilitating understanding and application. As a communication tool, a design language serves to reveal unique variations in design approaches to others, while also providing the potential for a common form of language for disciplines to use, even the possibility of a meta-language (Beacham & Shambaugh 2011).

A second related type of a thinking languages address problem solving; however, it is useful to stand back and consider systems thinking as a way of dealing with the complexities of the world before attempting to problem solve. A systems language focuses on the interdependencies of entities within a collective whole. Systems thinking use of various forms of visual tools help to reveal, clarify, and document complex issues and still retain some level of precision (e.g., data flow diagrams in software engineering). A systems thinking language helps to address the common problem of unconsciously choosing a problem solving approach without considering options. Awareness of visual and verbal approaches provides two broad options before settling on a strategy prematurely, while many specific approaches exist, ranging from "associate" to "work backward" (McEver 1972). The key, according to Adams (2001), is to make people aware of these strategies and provide relevant examples. Furthermore people are rarely aware of the languages they think with, such as verbal, quantitative, visual, smells, sounds, touch and physical languages. Adams (1974) sees visual thinking as a very important alternate thinking language and consisting of perceptual imagery of the physical world, mental imagery, and graphic imagery (McKim, 1980). Other languages, according to Adam, include

those of the senses, which can lead one to innovative solutions, and improve the overall clarity of one's thinking and imagery.

Knowledge base maps enable one to map one's view of the knowledge created and valued by a discipline. Such an activity carries both a cognitive psychology perspective as well as limitations of understanding, a critical theory perspective. The practice of mapping depicts one's representations of the knowledge base and the contributors or players to this knowledge, as well as to help situate oneself within this map of scholarly activity. Maps are but one example of "devices that humans use to make public conceptions that are privately held" (Eisner 1994, 39). A limitation of mapping is that the map is a "snapshot" of one's current understanding and without ongoing scrutiny can become fixed and limited. The long-term value of a mapping exercise, if ongoing, prompts the student to re-appraise one's connections between knowledge, perspectives, disciplines, and the individuals who generate this knowledge.

Specialized private languages are developed in different occupations and settings, and they enable people to communicate efficiently with each other. Public school teachers use a specialized language of terminology and practices that may be foreign to non-teachers. The culture of the bowling alley is as distinctive as the laboratory (Latour 1986). The office provides the classic setting for private language and how work gets negotiated, done or not done (Fishman & Sullivan 2013). The purpose of organizations is to get work done, but workers spend a lot of time decoding the workings of the organization and making sense of multiple agendas and expectations.

Benefits

While the full scope of what might constitute such a private thinking language may be challenging to specify and bound, the idea of documenting these unique features serves three functions. First, the act of creating a visual guidebook prompts a personal examination of how one thinks and works. Thus, in the iterative developing of a visual guidebook one comes to think about and realize one's approaches to making sense out of information and how one processes that information, creating a metacognitive awareness. Second, the guidebook as a product not only documents but acknowledges the value of the individual in professional settings. Third, documenting a personal thinking language might assist new designers, specifically students in academic programs, to continually re-examine how thinking and working mutually benefit each other. Becoming aware of how one uses graphic design elements, for example, in the initial design of something, may speed up the design process by having access to ways of thinking and using these elements.

Components

The components of a personal thinking language include the following categories: graphic and symbolic language, study skills and time management, private and personal word language, and personal influences. Collectively these approaches to thinking and working can be documented as a personal thinking language. The general use of the term language refers to the cognitive ability to learn and use systems of complex communication.

Graphic and Symbolic Language

Graphic design is used to combine words, symbols, and images to communicate a specific message to an audience. Its uses traditionally have been in the areas of typography, printmaking, and page layout, but have expanded to visual arts design, online design, information graphics, interface design, and user experience design. The uses of graphics for communication build upon the fundamental design elements of line, color, shape, texture, space, and form. These elements are then applied into the following principles, which include unity; point, line, and plane; balance; hierarchy; scale; dominance; and similarity and contrast (Lidwell, Holden & Butler 2010).

Within a visual guidebook the above principles could be used as a category system, and the guidebook would then document how a designer has used these elements and principles within a designed product. However, for professionals who are not graphic designers this category system may not be useful or informative. Rather, examples could document how one uses symbols to convey schematic meaning, such as the use of circles and boxes in a flow diagram. The guidebook might include a list of symbols and what they mean to the individual. For example, one's use of an oval may represent a "process to accomplish something"

while a box may identify a product or artifact, something accomplished or built or archived in some way. Their inclusion in a visual guidebook is likely to be appropriated and mean something different. For example, a triangle symbol may be used by someone to mark a passage in a book and using the triangle to signal “questionable statement.”

A diagram, a map, and a painting are all examples of the use of the visual language. Its structural units include line, shape, color, motion, texture, pattern, direction, orientation, scale, angle, space and proportion. A guidebook may identify examples of how visual elements or how symbols were used, for example, in information graphics, to communicate history, profit, and distribution of data. Thus, a visual guidebook might be used to document how a person has used symbols in professional work and indicating a brand element to one’s approach or style. Specific sections of a personal thinking language could be incorporated into one’s professional portfolio – distinctive design features. The examples, however, could just be unique ways symbols have used privately.

Another use of the visual guidebook for this category would be to document the unique uses of a symbolic language for one’s profession, such as the proofreader’s symbols used to edit a document. Symbols for mathematical operations, statistical tests, and financial and actuarial use are extensive (Zwillinger 2011). Systems analysts use unique notation systems for data and process modeling (Rosenblatt 2014). Chemists require frequently-published handbooks to document the symbols used for physical and chemical quantities (Haynes 2013).

These symbols might become more complex in the case of personal metaphors. Examples here would include the personal meaning of images, such as flags or astrological signs. The key attribute here is how one or more symbols, images, or word use signal meaning to the individual and possible use in one’s personal or professional work. A bison, for example, might be seen by the user as signaling strength, presence, even stoicism. An astrological sign for Aries might be used by an individual to claim the features of that sign – adventurous and energetic but also impulsive and impatient – but also features of the mythology behind that sign (Dent 2012). See Figure 2 for additional examples and how they might be documented in a visual guidebook.

/	Acts as an apostrophe for long words, such as i/vention for intervention.
[.....]	Signals personal comments on handwritten or keyboarded documents.
*, #, □	Symbols that label words or paragraphs, which may need to be moved to a different location in a document.
@	Word shortcut to replace “at”, such as “I’m@a conference.”
→	Arrow implies or leads to or connects one idea/word/section to another.
↔	Bi-directional arrow implies mutual impact in some way and signals a possible need to label the arrow.
♈	Astrological sign for Aries. Symbol for adventurous and energetic, pioneering and courageous, enthusiastic and confident, selfish and quick-tempered, impulsive and impatient. May also signify meanings from mythology.
“the every other book”	Example of words which might mean to an author as “writing a fiction book for every textbook written”

Figure 2. Examples of graphic and symbolic language in a visual guidebook.

Study Skills and Time Management

Study skills provides a category to document specialized and unique ways of processing new information for personal and professional purposes. Examples in this category can document note taking strategies

(Shambaugh, 1995) for page organization, which may include the traditional outline, the split-page format, T-line format, and structured note page. Visualization note taking strategies include mind pictures, word pictures, and interactive study guides. A third category of note taking approaches include concept diagrams, such as concept circles, concept maps, graphic organizers, and the knowledge vee diagram (Novak & Gowin, 1984).

Study skills examples could document more elaborate forms of scholarly activity, such as the development of notes for a book or the management of physical or digital files. Professionals may use physical journal formats to record activities, thinking, experiments, or reflective entries. These journals tend to be idiosyncratic in choice and features, but common features may include dating of entries and the recording of information in specific ways on the left-facing and right-facing pages. Digital tools also exist to record and archive information conducive for retrieval and use. Organization of information also involves the organization of digital files and folders, both at one's remote device or online storage archive. How one organizes files and folders in terms of naming and organization can be noted in a visual guidebook. This activity could also be useful in a corporate setting where institutional style books and brand identity guides are supplemented by recommended or required file management policies. See Figure 3 for examples of study skills documented in a visual guidebook.

T-line	Note taking strategy: different categories of items on left side and right side of T.
Word pictures - ▲	Note taking strategy: Triangle = explaining symbol (e.g., cause, effects, conclusions)
Concept maps	Note taking strategy: Hierarchical connections of major and supporting concepts with both concepts and links labeled.
Journal – physical	Professional system for managing information and ideas. Examples of features: dated entries, specific information on left-facing and right-facing pages, summary pages.
Journal – virtual	Based on tool features, information of different media is stored online and retrieved.
Digital folders	Hierarchical structure and naming conventions standardized

Figure 3. Examples of study skills in a visual guidebook.

Examples of time management may be less visual but usually can be documented in terms of words, such as recommendations from authors (e.g., Allen 2001). The visual guidebook records not just what others have recommended but items that have been successfully implemented and may have been modified. For example, the recommendation that “Do the most important things first” (Lakein 1973) could be translated into the following quotation from a mentor: “If you can manage two hours of real thinking time each day, then you’re doing good.” Over time an individual might document unique forms of advice for others, such as “Challenge yourself to write something on something you know nothing about” or periodically document your accomplishments for the day including not only items crossed off from the “to-do” list but items of social consequence, such as meeting a friend, taking a break, trying out a new restaurant. Another visual guidebook item for time management might be places where one works, such as libraries, bars, coffee shops, or specific locations. One might include a photo from the location as a visual record. Over time one might document how one schedule’s one’s day, week, month, or year. For example, weekly scheduling may involve doing certain tasks on certain days, blocking out a specific length of time for different tasks. Monthly scheduling might involve scheduling in private time and errands as well as slack time to allow more flexibility in one’s time depending on the nature of the work. Another aspect of scheduling is a preference for physical scheduling

tools versus digital applications and devices. See Figure 4 for examples of time management documented in a visual guidebook.

Expert advice – Favorite quotations	“Do the most important things first” – “If you can manage two hours of real thinking time each day, then you’re doing good.”
Places of Work	Coffee shop
Time Scheduling	Scheduling in slack or private time

Figure 4. Examples of time management in a visual guidebook.

Personal Word Language

Word use, in particular, constitutes a private language that perhaps only one person is aware of, although this form of communication is most effectively used with one or more others in written or spoken conversation. Each field of practice, both personal and professional, benefit from this private language, as others in the same activity know what one is talking about. It is possible to further develop a private language with oneself or with selected others. This tactic can be effective when one cites references to one’s birthplace or one’s history, such as the use of events, music and media. Such references provide an “instant test” to see if someone is from that generation or native origin and can facilitate communication and trust quickly.

The use of metaphors is common in everyday speech and specific ones can become a part of one’s speech and actions, such as “It’s a two-barrel problem,” making reference to the metaphoric use of the phrase “putting a gun to your head,” signaling how one gets things done.

Acronyms have always been used as a short-hand to language. ITMA, which stood for “It’s That Man Again” was a British radio series during World War II. The modern age can be characterized with the use of acronyms in many professional fields, including governmental-speak or communicating with words that have no meaning (e.g., oversight, transparency, I’m sorry, I take full responsibility, paradigm). The Internet is full of acronym use (e.g., BFF, best friends forever) and may become a short-hand language for different generations as their use changes over time.

Acronyms may, however, become examples of private language if they are generated by oneself or trusted others, such as ABB, shorthand for “adults behaving badly.” Da Vinci used mirror writing as a form of private word use, but one can see personal word language openly used by people routinely on email or social media postings, sometimes as commentary (e.g., “I’ll let the universe know.”). The use of this language has become so commonplace that it’s tacit use is probably hidden from documenting. A reflective person who attends to self-examination would be able to document its use, particularly if its use is necessary in professional work. See Figure 5 for examples of personal word language in a visual guidebook.

Local mannerisms, idioms, historical events, media	“That’s all folks.” A catchphrase from the Merry Melodies cartoons from Warner Brothers.
Metaphors	“Put a gun to your head.” “Be happy or not be happy. You decide.”
Private Acronyms	ABB = “adults behaving badly.”
Social media	BFF = best friends forever, word usage about friends, babies, social situations Private communication: “The cave you FEAR to enter holds the TrEaSurE you seek.”

Figure 5. Examples of personal word language in a visual guidebook.

Personal Influences

Influences for a personal thinking language may include teachers, coaches, or mentors in the broadest of terms, from formal settings or non-formal educational settings. Influences may also include “distant teachers,” people that one may not have met or “teachers” that are the works of others, such as books, music, and other media. See Figure 6 for examples of personal influences in a visual guidebook.

Teachers – formal settings	Public school, college, professional development events.
Teachers – non formal	Parents, family members, community leaders, people one meets locally or from travel.
Distant teachers	Heroes and role models that one may have met or not met.
Media	Ideas, quotations from books, music, presentations (e.g., TED Talks).

Figure 6. Examples of personal influences in a visual guidebook.

Using A Visual Guidebook

A visual guidebook provides a personal guide to documenting one’s personal thinking language, which is not a visual language alone, but a mix of words and visuals, and ways of thinking and working with others, and the use of tools. A personal thinking language can be organized by categories, which could include graphics, color use, symbols, study skills and time management, private language with collaborators, and influences from real and distant mentors.

Educational Setting

A visual guidebook is a generic label for a learning product. Visual guidebooks can be used in any educational setting where ideas, objects, and experiences can be organized visually. Visual guidebooks can be used to document how visuals are used in content areas, such as how to learn mathematics. Any field, including chemistry, software programming, poetry, or history can be more fully understood by the visual representations used in the field, but also the very unique and personal representations on how one makes sense out of knowledge and expertise in that field.

Visual guidebooks are also useful to see how students make sense out of ideas, concepts, and information, and how they mentally archive concepts and ways of working for later retrieval. As an example, visual guidebooks can reveal how students characterize the metaphorical meanings of words, an activity useful in any writing or literature appreciation course, even courses in cognition and visual literacy. Consider the word “transition” and have students use visuals and text narrative to explain the meanings of this word in their lives. Student examples might include dry line, fence, grey, intermezzo, isthmus, pass, river, tide pool, twilight, valley, or wall. Gathered together, a visual guidebook could become a class product consisting of images and supporting text. Collectively, the product documents the different ways that students see the world providing a basis for discussion and appreciation of peers. Student representations provide the instructor with insight on how students view the content and how they view the instructor’s view of the content (Eisner, 1994). Novice representations, as documented in a guidebook activity, may carry insights into a concept or process that the instructor as expert may not be able to see.

Another educational example is to have students in a teacher education program develop visual guidebooks of the visual strategies used in content areas, such as mathematics, science, reading, social studies, and the humanities. These guidebook products provide a reference for teaching their content areas, helping students to “go visual” to better understand concepts and applications. Another variation in teacher education is to help future teachers see the value of developing self-awareness in students of how they learn and various study and note-taking strategies (Shambaugh, 1995). A visual guidebook might be more than text

and images but video, animation, hypermedia, ways that students tell the story of what they collect in some school project or personal interest.

A visual guidebook task requires instructional time to implement including clear rationale, procedures and policies, as well as an assessment system to evaluate student performance. For activities as personally relevant as a visual guidebook, student input into the assessment serves to invest students in the activity. Learning activities that have students identify, organize, and explain may serve as a model for other courses or across entire programs.

Workplace Setting

A visual guidebook for business applications may have somewhat different goals than personal or academic guidebooks, although many of the characteristics are similar. Visual guidebooks for business applications will generally be less reflective and more procedural, but may also provide opportunities for learning and reflection on processes if used in a thoughtful manner.

Each business has a unique culture and “face” that it presents to employees and to the public. Visual guidebooks can help to both define that “face” and provide consistency throughout an organization, aiding employees in understanding what is expected of them and how they are to handle specific situations. This consistency is important, and may become critical if there is reorganization or turnover within the business environment. With visual guidebooks defining and illustrating business practices, transitions between individuals with changing responsibilities becomes more efficient. Visual guidebooks may also provide a tool for communicating with stakeholders, customers, and investors by fostering transparency and sharing information in ways that are accessible and easy to understand.

There are obvious examples of visual guidebooks currently in use as discussed earlier in this paper such as the chemical formulas and representations of new discoveries that are communicated regularly through the use of visuals and narrative explanations. Numerous other examples exist and may be applicable to businesses currently without documentation. Visual representations of manufacturing processes (e.g. how a product proceeds through an assembly line) are important for product quality, efficiency, and employee understanding of their part in a larger process. Quality control expectations (e.g. applications of Six Sigma, TQM and others) may be easily and clearly communicated through the use of a visual guidebook, aiding both workers and stakeholders to understand benchmarks and goals. Businesses that use a more iterative process such as design-oriented environments could employ visual guidebooks to identify individuals involved in particular activities and how to engage them when needed during specific phases of a project. Design practices also work with visual guidebooks to communicate standard languages such as CAD drawing layer designations, common symbols used in design and construction drawings, and specification details for materials and furnishings.

Other businesses employ safety guides, use and care manuals, repair manuals, and client contact protocols within the context of visual guidebooks. Many companies have trademarked branding materials and visual guidebooks can provide well-defined options for proper use of these materials. Visual guidebooks may also provide a record of past performance in the form of portfolio documentation relevant to design organizations as well as other businesses interested in communicating their abilities to potential clients, stakeholders, and employees.

Conclusion

Documenting personal thinking languages is a way to transform ideas and perceptions into action in social and working settings. This paper discusses a conceptual premise for personal thinking languages, defined personal thinking language, identified benefits of using and documenting this language, and finally identified methods of documentation through the use of visual guidebooks in personal, academic, and business environments. Awareness of personal thinking language characteristics provides a powerful tool for reflection and exploration of new ideas and professional directions. Documenting that language provides a valuable resource for communication and preservation of information.

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ABOUT THE AUTHORS

Neal Shambaugh: Professor and Graduate Program Coordinator for Instructional Design and Technology, Department of Learning Sciences and Human Development, College of Education & Human Services, West Virginia University. Author of two textbooks on instructional design. Teaching areas include instructional design, design thinking, visual literacy, teaching models, and online programs.

Cindy Beacham: Associate Professor and Academic Chair for the Division of Design & Merchandising, Davis College, West Virginia University. Author of one textbook on professional practices within design fields. Teaching and research areas include design thinking, design process and application, creativity and design pedagogy.