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Visual Literacy Defined – The Results of a Delphi Study: Can IVLA (Operationally) Define Visual Literacy?

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Abstract

A relatively new approach to visual thinking and the grammar of imagery is visual literacy. Visual messages have existed before text-based messaging in the forms of prehistoric pictured communications and other symbols, however, a definition of visual literacy that enjoys the consensus of the visual literacy scholarly community does not exist. The purpose of this study was to solicit a first generation definition of visual literacy as a result of a Delphi study. Inconclusive results lead the authors to challenge the International Visual Literacy Association (IVLA) to construct and adopt an operational definition of visual literacy.

Visual Literacy: The Concept

The concept of visual thinking is mature, but a common definition of visual literacy remains absent. A vision for a taxonomy of visual literacy begins with a definition of visual literacy. This is a report of the results of a Delphi study to derive a consensus definition of visual literacy. The theories and applications set forth are intended to be the beginning of an

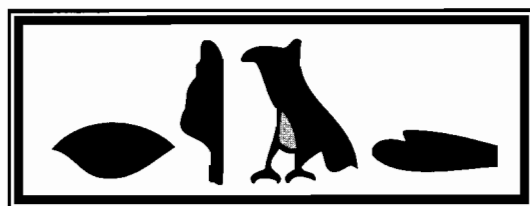


Figure 1. Hieroglyphic for *Read*

established rubric for operationalizing the grammar of visual literacy. The assumptions are that: images communicate meaning, and literacy means being able to read and compose. *Read* (Figure 1) is defined here as to receive or take in the sense of letters or symbols, especially by sight or touch. Compose is defined here as a way to juxtapose so as to create a message communicating perception or expression.

The language of visual messaging encompasses communicating concepts through the use of visual cues to communicating expressions of vicarious forms. Both visual cues and artistic expression represent near ends of a continuum of symbols and, therefore, become the foundation for a visual language formed by symbol systems. There is a need to discuss and debate the merits of a genuine grammar of visual literacy.

Before continuing with a presumption that a need exists for a definition of visual literacy, it is important to first identify the current status of visual learning development. Moore and Dwyer (1994) compiled information about visuals, which is broad, comprehensive and represents a variety of disciplines, interests and functions. Because visuals transmit data, information, knowledge, and emotion that is inclusive of many domains, Moore and Dwyer included scholars representing education, medicine, advertising, business, industry, and art. The result is a cross section of topics that provides the reader with a sense of scope about learning from visual messages. Moore and Dwyer also promote the goals of the International Visual Literacy Association (IVLA), which recently celebrated its 32nd year as a professional organization dedicated to visual communication and learning.

Visual literacy continues the tradition of Debes (1968), Arnheim (1969), and Dondis (1973). Moore and Dwyer (1994) have advanced the legitimacy of visual messaging as a bona fide language, and have begun to answer many of the questions about visual literacy concepts; however, there remains a need to establish a common grammar for visual messages that is founded upon a definition of visual literacy.

Research on the current concepts and existing definitions of visual literacy should provide the empirical support needed to recognize pictorial

communication as a language form. Many have tried to define the concept of visual literacy, but so far there is no consensus (Avgerinou & Ericson, 1997). Braden (1996) contends “there are two major impediments to research on visual literacy. The first is the lack of a widely accepted definition of the term visual literacy itself” (p. 491). A definition of visual literacy that is adopted by the visual literacy scholarly community is necessary in order to advance research on the principles of visual literacy.

Visual Literacy: In Search Of A Definition

Visual literacy has been regarded as a language of imagery bound by the explicit juxtaposition of symbols in time and space. A recent attempt to explain the parameters of visual literacy, the visual literacy movement and its aims, and the educational significance of the visual literacy concept, was presented by Avgerinou and Ericson (1997) in their review of the concept of visual literacy. According to Avgerinou and Ericson, “the term visual literacy was first coined in 1969 by John Debes, one of the most important figures in the history in visual literacy” (p. 280). Revised later for more inclusive language (Fransecky & Debes, 1972), this definition, can be found on the IVLA web site, <http://ivla.org/organization/whatis.htm>. It reads as follows:

Visual Literacy refers to a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, and/or symbols, natural or man-made, that are [encountered] in [the] environment. Through the creative use of these competencies, [we are] able to communicate with others. Through the appreciative use of these competencies, [we are] able to comprehend and enjoy the masterworks of visual communication. (p. 7)

Levie (1978) claimed Debes' (1969) definition should have described the stimuli of interest in terms of a symbolic modality rather than in terms of a sensory modality. Bieman (1984) claims Debes' definition should inform us about what visual literacy is; as well as what a visually literate person can accomplish. Further, the evolution of other literacies, such as media literacy and computer literacy, calls into question the ability of the IVLA definition of visual literacy to be used in application contexts.

Horton (1983) defined visual literacy as “the ability to understand (read) and use (write) images and to think and learn in terms of images, i.e., to think visually” (p. 99). Rezabek (1999) purports visual literacy is the ability to both

accurately interpret and create messages that are transmitted through the sense of sight, with an emphasis on using communication systems that do not rely primarily on traditional text based alphabetic or numeric codes.

Robinson's (1984) sentiments about developing visual literacy through film remains one of the best denotations of visual literacy and is worthy of noting here:

Literacy is certainly a familiar concept, and many find the term visual literacy confusing, since for most of us it takes vision to read anything. Visual literacy has been coined as a simple expression of some fairly complicated media appreciation or film criticism concepts. Basically, visual literacy is the ability to process the elements of and to interpret visual messages, the ability to understand and appreciate the content and purpose of any image, as well as its structural and aesthetic composition. A visually literate person can perceive, understand, and interpret visual messages, and can actively analyze and evaluate the visual communications they observe. Visual literacy involves the interpretation of images, movement, design, color, and pattern in media messages of many kinds, from company symbols and street signs to television commercials and MTV (pp. 267-268).

Robinson has been particularly instrumental in outlining ideas for library activities that assist adults and other students to develop visual skills, highlighting materials, hardware, software, and programs in the form of films, kits, books, and other teacher resources. Heidorn and Sandore (1997) note that recent technological advances in computing and digital imaging technology have had immediate and permanent consequences for visual resource collections.

There are others who have offered definitions of visual literacy (Ausburn & Ausburn, 1978; Curtis, 1987; Sinatra, 1986; Sucey, 1985), however; each is symptomatic of one of the two common criticisms of visual literacy definitions.

1. Individuals have defined visual literacy from the perspective of one's own background and professional concerns (Baca & Braden, 1990).
2. Many definitions adhere to the verbal literacy analogy which is restrictive (Sucey, 1985).

Consequently, Avgerinou and Ericson (1997) believe "arguments in favour of taking visual literacy more seriously are probably even more compelling now than thirty years ago" (p. 290).

Visual literacy, as a concept, illustrates the many dimensions of visual literacy that can be learned, used, and integrated simultaneously into a message. Hood and Lapp (1997, 1998) describe two hours in the life of an eight-year-old so as to demonstrate that children acquire information and develop language skills from multiple sources. Hood and Lapp argue the conceptualization of literacy should be broadened from reading and writing skills to a definition that recognizes the layering of information and a literacy definition that includes all forms of communicative and visual arts.

Visual messages are fundamental to complex mental processing because they provide information and opportunities for analysis that text alone cannot provide. Learners in complex societies around the world take in information visually, imitating the actions and attitudes they see. Visual information sources, from cave paintings forward, have supplemented, not replaced, oral communication (Katz, 1997). Visual messaging is necessary for increasing human capacity of complex mental processing, however, operational definitions for what it means to be visually literate do not yet enjoy consensus among the communities that promote visual literacy. Therefore, a definition of visual literacy is needed based on what is known about the role of perception, symbol systems, and languages, so that we may better communicate through images.

Visual language requires a literacy taxonomy because of the different levels of sophistication at which visual messages can be constructed. Further, meaning contained in a visual message can be interpreted at different levels, and interpreted a variety of ways depending on many factors, including individual experience, language development capacity, the medium of communication, and the grammatical structure of the visual message. The contention is that a visual literacy taxonomy exists for the language of visuals. The visual literacy taxonomy proposed here is:

1. Visualizing the visceral
2. Visualizing heuristics
3. Visualizing algorithms
4. Visualizing procedures
5. Visualizing concepts
6. Visualizing abstract notions

Objects, sequence, grammar, time, and space will characterize each level of the visual literacy taxonomy. A description of each level of the taxonomy and the components that characterize each level will serve to form the grammar of visual literacy. A consensus definition of visual literacy is necessary as a meaningful context in which to understand and apply the taxonomy.

Research Questions

The purpose of this study was to derive a consensus definition of visual literacy from among scholars and practitioners of visual literacy.

Data were sought through questions about how a definition of visual literacy informs research and practice of visual literacy. The research questions were also intended to provide empirical reference for the organizing framework of a visual literacy taxonomy. The research questions for this study were:

1. What is the consensus definition of visual literacy among published scholars of visual literacy?
2. Do visual literacy scholars essentially agree on a single definition for the term visual literacy?
3. What is the nature of a visual literacy definition? What are the traits and components that characterize the domain of visual literacy?
4. Is a definition of visual literacy necessary? What is the rationale for promoting a consensus definition of visual literacy?

Methodology

The Delphi technique was selected as the main data collection strategy for this study because of the type of information sought. The Delphi technique, a research method originated by Norman Dalkey and Olaf Helmer (1962-63), was developed to enhance the group decision making process by achieving consensus of opinion without face-to-face interaction. Since its inception, the Delphi method has been demonstrated in the literature as a reliable qualitative method for consensus reaching in a variety of content areas including distance education (Thach & Murphy, 1995), journalism (Smith, 1997), and numerous others (Cochran, 1983; Judd, 1972; Linstone & Turoff, 1975). As described previously, advances in the field of visual literacy suffer due to the absence of an agreed-upon definition. The following section describes how the Delphi technique was used in an attempt to achieve a consensus-based definition of visual literacy. A description of participants, data collection procedures and instruments, analysis procedures, and limitations is presented.

Participants

The goal of a Delphi study is to collect data from identified experts in a particular subject area, achieving consensus through several iterations of an evolving survey. Thus, the primary criterion used to select participants in this study was demonstrated expertise in the field of visual literacy. Visual literacy expertise was established by soliciting participants from the following databases:

- Authors from the Journal of Visual Literacy.
- Authors from the annual conference Selected Readings of the International Visual Literacy Association.
- Authors of books, and book chapters, written within the domain of visual literacy.
- Authors of presentations at professional meetings dedicated to visual literacy.

A secondary criterion for participation was access to and the ability to use Internet-based electronic information dissemination tools including electronic mail and the World Wide Web (WWW).

The number of subjects selected to participate in a particular Delphi study varies greatly in the literature. Participant pools range from as few as ten to over three hundred fifty, and average approximately thirty-five. Attrition rates also vary widely, from about seven to fifty percent. Attrition must be accounted for when determining the size of the initial participant pool (Murray & Hammons, 1994).

An initial pool of 229 potential participants was assembled for the visual literacy study. Each potential participant received an email that explained the study and asked him or her to submit the names of three experts in the visual literacy field given the criteria described previously. Each email recipient could include him/herself in the list of three. Fifty-three individuals received at least one nomination. Through rank-ordering, the final expert list was narrowed to the top fifteen nominees.

Data Collection Procedures

This study was conducted using the Delphi method of data collection. Permission was granted from the appropriate review board to collect data from human participants. In general, contact with participants consisted of an introductory letter including an explanation of the study and a request to participate, content pertaining to and including three rounds of surveys, and a concluding email. The introductory letter was distributed via electronic mail. All those contacted were notified that participation was on a volunteer basis and would take place entirely through electronic mail and an identified site (Figure 2) on the World Wide Web (WWW). The participants were also notified that they would be furnished with a summary of results upon completion of the study to promote full participation. Participants were required to provide consent electronically prior to completion of the first round survey.

All three rounds of surveys were administered via a customized site on the WWW. The survey instrument was identical for all participants for the first

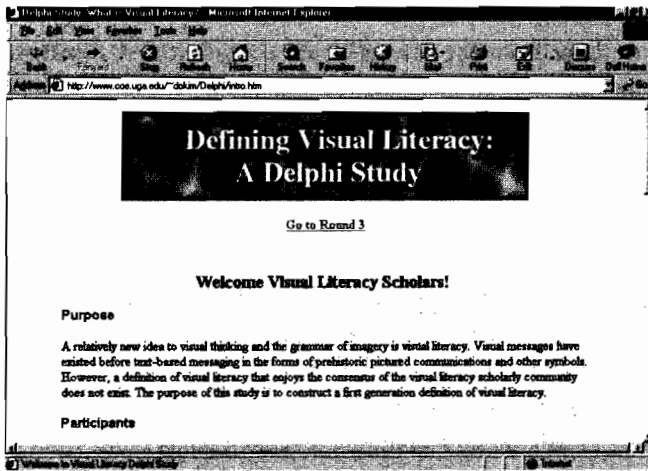


Figure 2. Welcome Page of Research Site

round of data collection. The study consisted of four broad questions designed to solicit responses regarding a definition of visual literacy. These responses were used, in turn, to develop survey items on succeeding instruments. The first round survey was piloted and revised prior to beginning data collection.

The first round of data collection took place over eight weeks. Information received during the first round was compiled and assembled into statements or partial statements that comprised the second round survey instrument. Participants were asked to rate each statement on a scale of 1 to 4, indicating the extent to which they agreed with it. A response of "4" indicated strong agreement, "3" indicated mild agreement, "2" indicated mild disagreement, and "1" indicated strong disagreement. Participants were also able to provide written commentary on each statement through text boxes. The second round of data collection occurred over two weeks.

For the third round of data collection, data were taken from the previous rounds and used to construct a survey instrument that provided a first generation consensus definition of visual literacy. During the third round, participants were given an opportunity to comment on the consensus definition. The final round was completed over two weeks.

Data Analysis

The data were analyzed with two general goals in mind: to determine the degree of consensus for and the level of acceptance of each statement included in the survey instrument (Baca & Braden, 1990). The data collected from this study were analyzed for commonalities to achieve these goals.

Then, commonalties were synthesized into a first generation definition. The analysis was completed independently by each of the three researchers and then together as a group.

Limitations

This study represents the community of scholars for the forum indicated in the databases from which the participants were solicited. There are scholars within other communities whose opinions and expertise might modify the definition constructed for this study. This study also was conducted entirely in an electronic format. Visual literacy scholars may not have been contacted or chose not to participate because of the data collection medium.

Results

Research Question #1

What is the consensus definition of visual literacy among published scholars of visual literacy?

Three definitions were submitted by study participants during round one and then returned to participants during round two for ranking and comment. Given the definitions submitted and subsequent commentary, a consensus definition was co-constructed by the research team from the themes arising from an analysis of these data. The consensus definition, which was submitted to participants for comment during round three, follows. Visual literacy is:

A group of acquired competencies for interpreting and composing visible messages. A visually literate person is able to: (a) discriminate, and make sense of visible objects as part of a visual acuity, (b) create static and dynamic visible objects effectively in a defined space, (c) comprehend and appreciate the visual testaments of others, and (d) conjure objects in the mind's eye.

All of the definitions submitted by participants shared certain common factors that are reflected in the consensus definition. First, phrases such as "learned ability," "a group of competencies," and "acquired human abilities" suggest that visual literacy should be defined as a group of "acquired competencies". Second, all of the definitions submitted included words to express visual literacy competencies in two fundamental ways – the ability to read and write visuals. Read was variously expressed as "discriminate," "interpret," "comprehend," and "enjoy." *Write* (Figure 3) was conveyed with words such as "create," "visualize," and "make." Moreover, the words chosen by participants suggest levels of read and write; hence the inclusion of "discriminate," "create," "comprehend," "appreciate," and "conjure" in the consensus definition.

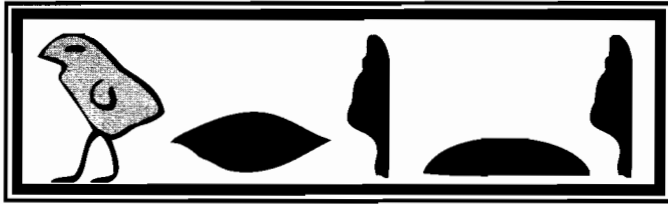


Figure 3. Hieroglyphic for Write

Research Question #2:

Do visual literacy scholars essentially agree on a single definition for the term visual literacy?

There is insufficient data to provide a definitive answer to this question. Although the original participant pool included over 200 visual literacy scholars, only fifteen experts were identified by members of the visual literacy community. Three definitions were submitted during round one by the fifteen participants invited to the study. Four feedback responses were received in round two. Only one confirmatory response was received in round three. Although strong themes did emerge during the research process that allowed for the construction of a first generation definition, this definition cannot be claimed as representative of the larger community of visual literacy scholars without their input. However, it is noteworthy to include that, in commenting on the consensus definition during round three, one scholar wrote: “The definition sounds about as good and clear as I can imagine. I hope it achieves wide acceptance and recognition.”

Research Question #3:

What is the nature of a visual literacy definition? What are the traits and components that characterize the domain of visual literacy?

Referring to the consensus definition, the phrase “acquired competencies” conveys that visual literacy is a learned repertoire of knowledge and skills. Further, the words “discriminate,” “create,” “comprehend,” “appreciate,” and “conjure” represent a sequence of knowledge and skills that increase in complexity. Such a sequence implies that visual literacy comprises a hierarchy of learned knowledge and skills.

Research Question #4:

Is a definition of visual literacy necessary? What is the rationale for promoting a consensus definition of visual literacy?

Advances in the field of visual literacy have suffered due to the absence of an agreed-upon definition. Although a small number of scholars participated in this study, most acknowledged the necessity of a definition of visual literacy. As one participant wrote: "The difficulty in arriving at a widely accepted definition has contributed to the resistance to visual literacy." Another scholar commented: "An agreed-upon definition will inform research and practice of visual literacy: 1) by helping succinctly and convincingly tell others what it is, and 2) broadening VL's viability, recognition and validation at all levels of discourse and activity." Such comments support a rationale for agreeing to and promoting a consensus definition.

Discussion

The purpose of this study was to derive a consensus definition of visual literacy from among scholars and practitioners of visual literacy. A review of the literature established that, although much work has been completed under the banner of visual literacy, the professional community does not endorse and share a common definition (Avgerinou & Ericson, 1997). Further, it was argued that a definition of visual literacy would advance research and practice in this area.

The closest approximation of a shared definition might be that which appears currently on the IVLA web site, a modified version of the definition put forth by Debes. However, did this definition arise out of the community of scholars engaged in visual literacy research and practice? Is it a consensus definition? Is it descriptive enough to advance research and practice?

The IVLA definition of visual literacy does not provide sufficient detail about the visual literacy construct to conduct research on the effects of visual sensory experiences on achievement or comprehension variables. Furthermore, the current IVLA definition of visual literacy is too broad, and thus, appears to be all encompassing of everything that can be seen. There is a need for an operational definition of visual literacy that will provide educational researchers with a construct sufficient to measure the very "group of vision competencies" purported by the International Visual Literacy Association.

This study did result in a first round definition of visual literacy arising from current visual literacy scholars. However, the definition cannot be labeled a consensus definition due to the severely limited participation in the study. Clearly, sparse participation in the study raises important questions that should be examined further. Did the design of the study, and in particular the electronic format, prohibit participation? If so, perhaps a follow-up study with a modified design is in order.

Beyond issues of design, the limited participation in this study and the lack of an agreed-upon definition to date begs the question: Is there truly a cohesive community of visual literacy scholars? Is there a field that can indeed be defined? As a first step, it is recommended that the consensus definition arrived at in this study be presented to the visual literacy community to determine if true consensus can be achieved. The challenge is put forth to the visual literacy community to construct and adopt an agreed-upon definition.

The first round definition provided by this study informs as to the nature of a visual literacy definition as a learned repertoire of knowledge and skills of increasing complexity, implying a taxonomy of visual literacy. Thus, a second recommendation is to provide the conceptual, theoretical, and empirical support for the labels that have been associated with a taxonomy of visual literacy. Visual elements, examples, and applications are needed to explain each level of the proposed taxonomy of visual literacy. Then, perhaps a grammar appropriate for visual communication can be structured.

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