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Visual Literacy in the Classroom

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There's a common recurring theme in much of the research surrounding visual literacy: that of our increasingly image-saturated culture. From graphic novels and Ikea furniture instructions and billboards lining the highways, and especially the rise of applications like Instagram, Snapchat, and Tumblr, modern society is awash with images; images which are now their own kind of visual communication. It is understood almost instantaneously. What's more, it transcends spoken and written word, making it a universal and globally known language. For this reason, understanding visual literacy and its application has come to the forefront of library instruction interests, not just regarding art students but for the general population as well. Therefore, this paper will explore the meaning of visual literacy, and basic concepts and theories surrounding visual literacy. Discussion will then move into various approaches to visual literacy within library instruction, and how that might apply to the classroom. Finally, this paper will close with a more in-depth examination of the significance of visual literacy to the broader community.

Overview of Visual Literacy (VL)

VL & ACRL: Defined

According to Hattwig et al, the ACRL *Visual Literacy Competency Standards for Higher Education* "are the first of their kind" in regards to "interdisciplinary visual literacy performance indicators and learning outcomes."[1] Further, the outcomes provide both a "framework for student visual literacy learning and offer guidance for librarians… and other academic professionals in teaching and assessing visual literacy."[2] The ACRL visual literacy standards offer description and guidance for librarians wishing to apply visual literacy to the classroom. In these standards, the ACRL defined visual literacy as "a set of abilities that enable an individual to effectively find, interpret, evaluate, use, and create images and visual media." [3] The ACRL further states that such skills "equip a learner to understand and analyze" visual information.[4] Thus, effective visual literacy involves a complex skill set surrounding the use and understanding of imagery, and which allows an individual to read, interpret and use such visual language. As "21st century learners" engage in modern society's increasingly "highly visual culture," yet lack the skills needed to do so effectively, it is essential to incorporate these competencies into the library and academic curriculum.[5]

Processes and Theories

Besides the ACRL competencies, there are numerous other sources that contribute to understanding visual literacy. These include various processes to learn how to "see" an image as well as several learning theories in relation to visual literacy. In conjunction with the ACRL competencies, these processes and theories provide a basic foundation useful for both a greater understanding of and how to teach visual literacy. For instance, take the Toledo Museum of Art

and their outline for a six-step process towards seeing art.[6] The goal of this process is not only to "see," but also to understand images on a "deeper level," with the final result leading to the individual's developing visually literacy.[7] This process for "The Art of Seeing Art" consists of: "Look, Observe, See, Describe, Analyze, and Interpret," where each step involves a deeper level of interaction with art and one's own awareness of thought to arrive at that greater visual understanding.[8] Concerning the classroom, such a process as "The Art of Seeing Art" could inspire ideas for librarians planning visual literacy instruction courses, especially when aimed at the early stages of "seeing" an image.

In her discussion about the importance of combining cognitive theories with the aforementioned ACRL standards when teaching visual literacy, Beatty outlined such theories as "Dual Coding Theory, Cognitive Load Theory, and Multimedia Theory."[9] Beatty argued that by understanding these learning theories and how they relate to visual literacy via the ACRL standards, librarians could better "understand how human beings process visual and verbal information," and could thus "ensure that their students acquire the skills they need" to become visually literate.[10] As such, further explanation on each of the three theories – dual coding, cognitive learning, and multimedia – are discussed in brief below.

Originally presented in his book *Imagery and Dual Processes (1971)*, Paivio later expounded on the dual coding theory when he published *Mental Representations: A Dual Coding Approach (1990)*.[11] Through dual coding theory, Paivio hypothesized that the human brain utilizes two different "systems" for handling and processing information, those being "nonverbal objects and events, and [the other]… language."[12] The latter Pavio referred to as just "the verbal system," since it was a "language-specialized system."[13] Paivio referred to the former, the "nonverbal objects and events" system, as the "imagery system" due to the main function of "analysis of scenes and the generation of mental images."[14] While "functionally interconnected," in that both systems can be utilized simultaneously, Paivio insisted on qualitative processing differences that resulted in specialization of the two systems.[15] The core idea with dual coding theory is that of two distinct cognitive functions for information recall and processing, one of language and one of images. Therefore, students learn through imagery and visualization as well as with written and spoken words. This furthers the importance of teaching visual literacy, since students learn from more than just language alone.

Cognitive load theory, originally developed by Sweller in the late 1980s, was constructed around the idea of mental overload in student learning and problem solving.[16] Sweller suggested that cognitive load occurs when the "cognitive-processing capacity" of an individual is too limited to process an unfamiliar problem.[17] Thus implying that students struggle to learn new information when they have "have no frame of reference" to relate it to.[18] Additionally, Sweller explained previous research about how people process information in "chunks."[19] So, cognitive load occurs when students are faced with large amounts of new and unfamiliar information. To mitigate this problem when teaching visual literacy, it might be best to introduce concepts and ideas in small portions, and to relate those concepts to something the students already know.

Originally developed by Mayer in the late 2000s, multimedia-learning theory postulates that students learn better from both words and pictures than with words alone.[20] Mayer suggests

that multimedia instruction can be "based on delivery media," presentation mode, or "sensory modalities," where delivery media might include "amplified speakers or screens," presentation mode would focus on words and pictures, and sensory mode would focus on auditory and/or visual based learning.[21] Mayer further promotes a "learner-centered approach" to instruction that "focuses on the nature of the human cognitive system," or, on how people learn.[22] Thus, Mayer's multimedia theory draws on, and even expounds on, Paivio's dual coding theory above, by endorsing the unification of visual and verbal learning methods as a way to improve student learning.

The learning theories outlined above provide a foundation for understanding how students learn through both images and words. Further, these theories present the idea that students not only learn better when information is presented both visually and verbally, but also that students learn better when information is presented in a relatable way via smaller, bite-size portions. Regarding visual literacy, these learning theories used in conjunction with the ALRS competencies and the Toledo's "Art of Seeing" process contribute to developing that deeper understanding of visual literacy, as well as encourage ideas for creating effective instruction plans when teaching visual literacy to students in the library.

Studies and Application

Teaching with images can help students to develop a variety of skills. These skills include concepts "essential to visual literacy" and other areas of academic performance, such as "critical thinking, communication, collaboration, creativity, and innovation."[23] Outlined below are two case studies, which explore varying approaches to applying images and visual literacy in an academic library setting. Additionally, each overview includes definitions of the specific approach, intended outcome, and how that approach might be applied in class.

One approach to incorporating visual literacy into library instruction is that of embedding it into first year instruction, which is exactly what the University of Montana did with their "*Capture the Moment* exhibition of Pulitzer-Prize-winning photographs."[24] This method utilized extensive collaboration between faculty and the "undergraduate services librarian" to embed visual literacy instruction throughout the freshmen seminar, with critical thinking as the course's central theme.[25] The librarian's role was to develop assignments designed to teach students how to look at and think about art in a scholarly way.[26] Two of these new assignments consisted of the "ethics of seeing" and "capture the moment" activities.[27] The first activity, "ethics of seeing," involved class discussion that used pre-selected images brought up via ARTstore in combination with the question "*What do we have the right to see?*" as a way to jumpstart class discussion.[28] The goal of this assignment was to spark conversation by having students compare and contrast their "assessment of visual materials… with their experience assessing other, more traditional, texts."[29]

In response to student "difficulties involved in reading and evaluating visual images," the second assignment required students to attend the *"Capture the Moment* Pulitzer prize exhibit on campus"* with guidelines for how to look at and think about the photographs.[30] The intended outcome was for students to recognize the difference between "reading the printed word and "reading" visual material."[31] Regarding classroom application, both these activities are fairly

straightforward and would need little variation to be applicable in similar instruction scenarios. Possible adaptations could include reconfiguring "ethics of seeing" for a particular subject, such as history and historical interpretations of specific events or societies. In that, the images shown in the library instruction class could have a theme or relate back to the students' coursework, be it writing, science, history, etc. "Capture the Moment" could focus on other visual material as well as, or instead of, photographs, such as paintings and illustrations. The activity also doesn't have to require a museum visit, though that might be preferred for a more genuine and engaging experience than viewing images online.

Another and relatable approach for non-art and non-design students involves the creation of a "basic learning program for enhancing visual literacy," originally developed for Japanese high school and college age students by Ariga, et al.[32] Utilizing student photography and a class-collaborative webpage to upload and share work, this program's core objectives concentrate on observation and content creation as a way to construct appreciation and meaning.[33] This is accomplished through the "Look-Think Exercise" series, in which the authors focused on "perception, visual variables," and significance of the "analysis of implementation."[34]

The first exercise, *Perception*, uses the "six Gestalt factors" of "figure-ground relationship, proximity, similarity, closure, good continuation, and uniform connectedness" as a guiding force for students to "understand an intuitive way of looking at the visual world."[35] The idea being that having students focus on these factors while they take photographs to show their observations will in turn foster "understanding of visual perception" and help to "create effective visual communication designs."[36] The second and third exercises, *Visual Variables* and *Signification* include the same theme of photography to communicate understanding, but with slightly different goals.

The second exercise "develops awareness of how graphic images express quantity, quality, and distinction," and focuses on "constructing a scale of photographs" of the same theme to demonstrate understanding of "visual elements… and visual meanings."[37] The third and last exercise, *Signification,* "aims to get students to think of signification by visual images" by encouraging students to explore denotations and connotations of "what is photographed in social and cultural contexts."[38] Student written reflection and presentations, class discussion, and the aforementioned collaborative webpage, where students could share and discuss each other's work, were all used as assessment tools to garner student development throughout the course.[39]

A project of this size might be too much or too involved for one-shot classes and the like, but elements of this study could certainly be adapted to fit into smaller time-slots. Perhaps focusing on just the first exercise would be more realistic and beneficial for students who just need to learn the basics of visual literacy, and not necessarily the basics of graphic design. Also, searching for images online or showing pre-selected images to illustrate Gesalt's concepts, as with the first approach, might be more feasible and less time-consuming than having students go out and take their own photos, even if the latter method is more idealistic.

Besides the two photography and observation based activities above, the Visual Literacy Toolbox has compiled a list of "online activities, activity plans, questions, and learning

objectives," as well as a list of additional resources, in order to assist faculty in both understanding visual literacy and in curricula customization when incorporating visual literacy to instruction.[40]

Significance

As discussed above, teaching images and visual literacy in the classroom can increase student skills in "critical thinking, communication, collaboration, creativity, and innovation," which is especially helpful for students living in today's "visually rich, screen based world."[41] Shanahan points out the importance of visuals across all academic disciplines, not just the obvious in art and design. For instance, images are used in science to help "explain scientific phenomena," since "language is insufficient" on its own.[42] These images include pictures of atoms, plant cells, and even human anatomy. "Multiple representations" of information "increases the possibility of accuracy and wide understanding."[43] Students might not understand what a plant cell or an atom look like through words alone, the image provides an example and gives students a visual to think of when reading text. In social studies, graphics appear in the form of maps and "analyses of the meanings of… photographs and political cartoons" and historical artwork.[44] Pictures are also "important in children's literature" and graphic novels, considering that "illustrations carry… meaning for all readers."[45] Some readers, not just young children but readers of all ages, may prefer visually based learning and reading, since they often seem to understand it more immediately and more easily than with just written and spoken words. This demonstrates the importance of the dual coding and multimedia learning theories above; students need more than just words to learn, they need visuals too.

Conclusion

Visual literacy's increasing presence in modern society and its ability to facilitate global communication make it an important subject to include in library instruction. As previously discussed, visual literacy is the ability to see, read, and communicate with images and other visual material. There are several concepts, theories, and past approaches to visual literacy, including possible class activities, all of which may help librarian instructors come to a greater understanding of the subject and how to apply it to their own classes. For visual literacy is the language of images, a language that art students would study but might not know how to research, and a language that the modern world comes into contact with every minute of every day, but might not fully understand. Visual literacy is an age-old, pervasive form of communication, what better time to learn it than now?

Notes:

[1] Denise Hattwig, Kaila Bussert, Ann Medaille, and Joanna Burgess, "Visual literacy Standards in Higher Education: New Opportunities for Libraries and Student Learning," *Portal: Libraries and the Academy* 13, no. 1 (2013): 62.

[2] Hattwig, et al, "Visual Literacy Standards in Higher Education," 62.

[3] "ACRL Visual Literacy Competency Standards for Higher Education," Accessed February 20, 2016, http://www.ala.org/acrl/standards/visualliteracy.

[4] "ACRL Visual Literacy Competency Standards."

[5] Hattwig, et al, "Visual Literacy Standards," 61.

[6] "The Art of Seeing Art™," Toledo Museum of Art, Accessed February 21, 2016, http://www.vislit.org/the-art-of-seeing-art/

[7] "The Art of Seeing Art™."

[8] "The Art of Seeing Art™."

[9] Nicole A. Beatty, "Cognitive Visual Literacy: From Theories and Competencies to Pedagogy," *Art Documentation: Journal of the Art Libraries Society of North America* 32, no. 1 (2013): 34.

[10] Beatty, "Cognitive Visual Literacy," 42.

[11] Allan Paivio, *Mental Representations: A Dual Coding Approach*, (New York: Oxford University Press, 1990), 53.

[12] Paivio, *Mental Representations*, 53-54.

[13] Paivio, 54.

[14] Paivio, 53-54.

[15] Paivio, 54.

[16] John Sweller, "Cognitive Load During Problem Solving: Effects on Learning," *Cognitive Science* 12, no. 2 (1988), 257.

[17] Sweller, "Cognitive Load During Problem Solving," 261.

[18] Beatty, "Cognitive Visual Literacy," 37.

[19] Sweller, "Cognitive Load During Problem Solving," 258.

[20] Richard E. Mayer, *Multimedia Learning*, 2nd ed., (Leiden: Cambridge University Press, 2009), 3.

[21] Mayer, *Multimedia Learning,* 3.

[22] Mayer, 3.

[23] Hattwig, et al, "Visual Literacy Standards,"67.

[24] Tammy Ravas and Megan Stark, "Pulitzer-Prize-Winning Photographs and Visual

Literacy at the University of Montana: A Case Study," *Art Documentation: Journal of Art Libraries Society of North America* 31, no. 1 (2012): 34.

[25] Ravas and Stark, "Pulitzer-Prize-Winning Photographs," 39-41.

[26] Ravas and Stark, 41.

[27] Ravas and Stark, 41-43.

[28] Ravas and Stark, 41.

[29] Ravas and Stark, 41.

[30] Ravas and Stark," 42.

[31] Ravas and Stark, 42.

[32] Taeko Ariga, Takashi Watanabe, Toshio Otani, and Toshimitsu Masuzawa. "Learning Program for Enhancing Visual Literacy for Non-Design Students Using a CMS to Share Outcomes." *International Journal of Technology and Design Education* 26, no. 1 (2014): 133-136.

[33] Ariga et al, "Learning Program," 134-136.

[34] Ariga et al, 136.

[35] Ariga et al, 139.

[36] Ariga et al, 139.

[37] Ariga et al, 140.

[38] Ariga et al, 141

[39] Ariga et al, 142.

[40] "The Visual Literacy Toolbox: Learning to Read Images," accessed February 28, 2016, http://www.humanities.umd.edu/vislit/

[41] Hattwig, et al, "Visual Literacy Standards," 62-67.

[42] Timothy Shanahan, "Teaching Visual Literacy Makes a Big Difference," Reading Rockets (blog), March 23, 2015. Accessed February 21, 2016. http://www.readingrockets.org/blogs/shanahan-on-literacy/teaching-visual-literacy-makes-big-difference

[43] Shanahan, "Teaching Visual Literacy."

[44] Shanahan.

[45] Shanahan.

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