

## Methodological Approaches for Exploring Visual Literacy Practices

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### Abstract:

*The proliferation of images and their increased use in academic and everyday information practices has sparked an interest in visual literacy as an area of research and library instruction. Teaching approaches and student learning are examined using theoretical frameworks and a variety of methodological strategies. This paper provides a review of research methodology adopted in empirical studies of visual literacy that were published in academic journals between 2011 and 2017. The results indicate that one third (33%) of the examined studies adopted a quantitative approach with surveys being the most popular strategy. Qualitative and mixed methods studies were a minority but represented a greater variety of strategies and data collection techniques. One third (33%) of the studies in the sample did not report any research methodology. Most of the studies (87%) used images in the research process.*

**Keywords:** Visual literacy, research methodology, quantitative research methods, qualitative research methods, visual evidence.

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### Introduction

Visual literacy represents a set of essential competencies for modern learners in academic and everyday information practices. Image users are not only viewers, but also creators and active contributors of visual information. Visual literacy includes a conceptual understanding of visual information as well as skills in creating and processing digital images. The Visual Literacy Competency Standards for Higher Education, developed by the Association of

College and Research Libraries (ACRL), emphasize visual literacy as multidimensional phenomenon and identify seven areas of competencies for visually literate individuals (ACRL, 2011). Visual literacy is also closely aligned with the current ACRL Framework for Information, particularly regarding the active role of users in the information creation process (ACRL, 2016). In addition, it is an essential part of the Metaliteracy framework along with other related literacies, such as media, digital, cyber, and mobile. (Mackey & Jacobson, 2014).

With the expanding role of images in communication, education, and everyday life practices, visual literacy is gaining more attention in research. In empirical studies, researchers can select from quantitative, qualitative, or mixed-method approaches and a variety of strategies and data collection techniques (Connaway & Radford, 2017). Comprehensive reviews of research methods in the library and information science (LIS) field indicate that surveys are one of the most frequently adopted methods (Aytac & Slutsky, 2015; Chu, 2015; Luo & McKinney, 2015; Matusiak, 2017). Case studies offer insight into teaching visual literacy in disciplinary contexts and provide examples of classroom activities (Beaudoin, 2016; Bell, 2014; Matusiak, 2013; Ravas & Stark, 2012). The purpose of this paper is to examine the use of different research designs, including quantitative, qualitative, and a mixed-method approaches, and to investigate the use of visual evidence gathered during the research process.

## **Methods**

This study undertakes a systematic review of the research methodology employed in the study of visual literacy. It conducts content analysis of the articles on visual literacy in terms of research strategies within the quantitative and qualitative traditions and mixed methods designs, data collection techniques, user populations, and use of visual materials in the research process. The following research questions have been posed for the study:

1. What types of participants are involved in the studies of visual literacy?
2. What research methods are used in the studies exploring visual literacy?
3. What type of visual evidence is used in the research process?

For the purpose of this study, the authors analyzed empirical research studies of visual literacy published between 2011 and 2017 and indexed in two databases: Library, Information Science & Technology Abstracts (LISTA) and Communication and Mass Media Complete (CMMC). This study consisted of two phases: 1.) the identification of empirical studies that report research on visual literacy 2.) content analysis of the sample. The core list of publications was identified through a series of structured queries using “visual literacy” or a combination “visual or image\*” AND literacy in the subject field of LISTA and CMMC databases. All queries were limited to publications in English. After the duplicates were removed, the initial list of publications was further reviewed and filtered to focus on empirical studies. Many results retrieved from the LISTA and CMMC databases on the topic of visual literacy represented theoretical papers and were not selected for this analysis. The review process yielded a total of 30 empirical studies. The unit of analysis in this study is a research publication.

## **Findings**

The articles in the analyzed sample were published in 14 journals. The largest number of articles ( $n = 14$ , 47%) were published in the *Journal of Visual Literacy*, followed by *Art Documentation: Bulletin of the Art Libraries Society of North America* ( $n = 4$ , 13%) and

*Journal of Documentation* ( $n = 2, 7\%$ ). Ten journals were a source of one study (33%). The international coverage was extremely limited with 25 studies (83%) taking place in the United States and two (7%) in Sweden. Three countries were a place of one reported study: Cyprus, Nigeria, and Puerto Rico. The selection of the LISTA and CMMC databases as a source of publications and restricting the queries to English likely contributed to the limited international coverage of the sample.

Most of the reported studies were conducted in educational settings, including elementary schools, high schools, and universities. Academic libraries and university classrooms provided fertile ground for examining student visual literacy competencies and testing the impact of instruction. As demonstrated in Figure 1, many studies ( $n = 18, 60\%$ ), engaged undergraduate, graduate, or a mix of undergraduate and graduate students. While architecture, visual studies and art history students (24%) were represented heavily in the sample, several studies also involved participants from STEM disciplines (18%), education (18%), cultural studies (4%), and library and information science (4%). A significant portion of the studies was conducted with undergraduate students across multiple disciplines (32%).

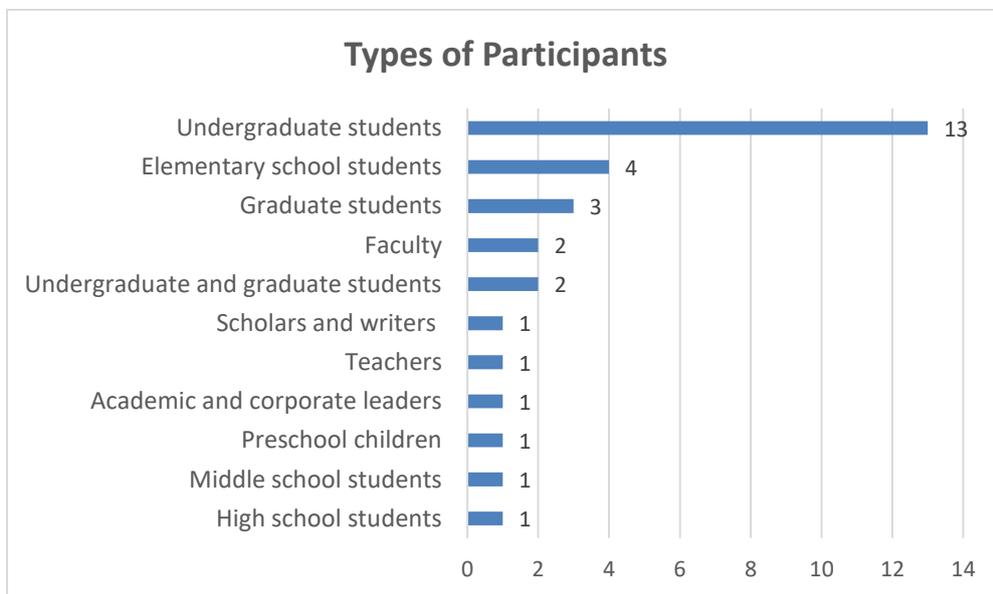


Figure 1. Types of participants in the sample ( $N = 30$ ).

The studies analyzed in the sample represent the three research approaches: quantitative, qualitative, and mixed-methods. As Figure 2 demonstrates, ten studies in the sample (33%) were conducted using quantitative methodology, 27% ( $n = 8$ ) were qualitative, and a smaller number of studies ( $n = 2$ ) undertook a mixed-method approach. Five studies in the quantitative category used surveys as a data collection technique. They focused on the participants' skills in recognizing iconic pictures and symbols or interpreting images. Four studies in the quantitative category adopted experimental design by conducting comparison between groups that received no intervention and those that were exposed to a form of visual literacy instruction or worked with visual materials. Case studies, grounded theory, ethnography, and design-based research were used as qualitative strategies. Qualitative studies demonstrated a higher number and a greater variety of data collection techniques with a combination of observations, interviews, and content analysis. The two studies classified as mixed-methods consisted of quantitative and qualitative data collection techniques, such as questionnaires and observations, but also quantitative and qualitative approaches to data analysis and reporting.

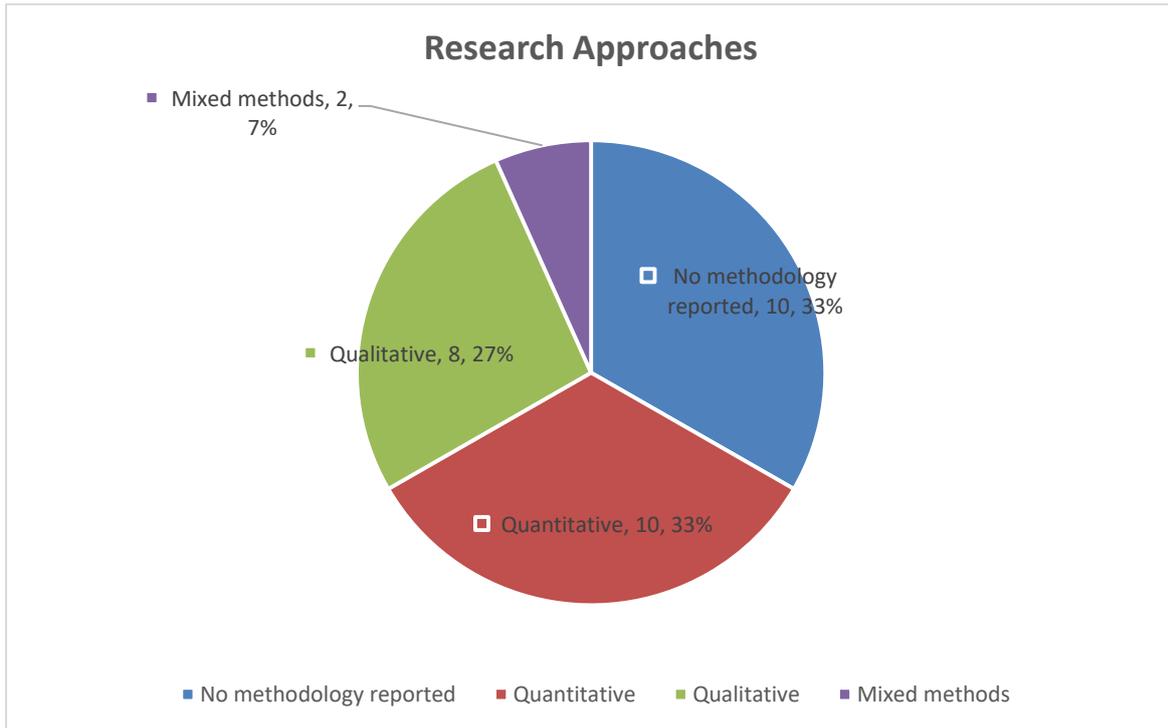


Figure 2. Research approaches adopted in the examined studies ( $N = 30$ ).

Ten articles (33%) did not report any research methodology. The studies could be classified as case studies as they described participant interaction with visual resources and visual literacy instruction in specific classroom or workshop contexts. However, the case descriptions were based on the instructor’s informal classroom observations and description of student work rather than systematic data collection and analysis.

The use of visual resources as a source of data in the research process is a unique aspect of studies focused on visual literacy practices. Most of the studies in the sample ( $n = 26, 87%$ ) used images in the research process. Both analog and digital formats were present. The images were selected from secondary sources ( $n = 18, 60%$ ) or produced by participants during the research process ( $n = 11, 37%$ ). Three studies involved the combination of images from secondary sources as well as those made as part of a research project. Visual materials were used to elicit comments, as a subject of content analysis, or as a component of observation or testing of participant skills. Table 1 lists types of visual resources selected from secondary sources, provides source information (when reported in the study), and relates the use of images to the research strategy.

Table 1. Types of visual resources selected from secondary sources

Image Type	Image Source	No. of Studies	Research Strategy
Digitized photographs and artwork	Digital image collections	3	Qualitative case studies
Paintings and icons	Web	3	Quantitative surveys
Digital photographs	Web	3	Qualitative case study; Ethnography Experimental design
Diagrams, maps, and visualizations	Scholarly publications	2	Experimental design; Design-based research
Cartoons		2	Case study; Experimental design
Pictures in books	Books	2	Case study – classroom observation
Graphic novels		1	Case study – classroom observation
Images of paintings		1	Mixed methods
Film		1	Case study – classroom observation
<b>Total</b>		<b>18</b>	

As Table 1 demonstrates, the studies employed a wide range of visual resources from picture books to images selected from digital cultural heritage collections. The studies that included images in surveys or in classroom instruction focused on participants' skills in analyzing and interpreting images.

More than one third of the studies ( $n = 11$ , 37%) analyzed images produced by participants and involved the investigation of participants' competency in interpreting images and creating visual forms of communication. Table 2 lists types of materials generated by participants and used actively during the research process. Three studies adopted comparative experimental design and quantitative analysis. Many of the studies in this category are classified as case studies that relied on informal classroom or workshop observations.

Table 2. Types of images created by participants during the research process

Image Type	No. of Studies	Research Strategy
Drawings	2	Experimental design; Case study – classroom observation
Photographs	2	Ethnography Case study – classroom observation
Art work	1	Case study – workshop observation
Cartoons	1	Experimental design;
Digital posters	1	Experimental design;
Graphic novels	1	Case study – classroom observation
Posters	1	Mixed methods
Video	1	Case study – classroom observation
Visualization	1	Case study – classroom observation
<b>Total</b>	<b>11</b>	

## Discussion and Conclusion

The findings of this study indicate that empirical research of visual literacy practices is an emergent area with a relatively small number of studies indexed in the LISTA and CMMC databases. The methodological approaches mirror the trends in LIS empirical research. The dominance of the quantitative approach with the use of experiments and surveys and a lower number of qualitative and mixed-methods strategies were also found in other content analysis studies (Aytac & Slutsky, 2015; Chu, 2015; Matusiak, 2017). However, the high number of studies that relied on informal observations as opposed to a systematic data collection found in this study is unusual. Many studies in the sample were conducted by practicing librarians or teachers, and as Aytac and Slutsky (2015) note, practitioner research tends to be descriptive and site specific. This may also be related to limited training in research methods in LIS education.

The use of visual materials as a source of research data is a unique aspect of the studies in the sample. Most of the studies reported the use of images in the research process but provided very little information on the approaches to analyzing visual evidence. As Rose (2016) emphasizes researching with visual materials is challenging as images are constructed through various social practices and are open to multiple interpretations. This methodological analysis was conducted in the context of the authors' previous research project that explored students' visual literacy practices in the academic environment. For that study, the authors collaborated with other researchers and adopted Consensual Qualitative Research (CQR) method. The findings and the description of the methodology are reported in the forthcoming article (Matusiak et al., in press). The CQR method uses multiple researchers, emphasizes rigor in data analysis, and strives for reaching consensus between research team members in analyzing and interpreting data (Hill, Thompson, & Williams, 1997; Hill et al. 2005). Although CQR focuses primarily on interview data, its team approach to interpreting results allows researchers to address some of the challenges in interpreting visual evidence.

Studies of visual literacy and other empirical research that utilizes images as data can benefit from employing a variety of research methods and engaging multiple researchers in data collection and analysis. This paper provided an overview of research methods and image use as a source of data for exploring visual literacy practices. It contributes to the discussion about the diversity of research methods and highlights CQR as a systematic approach to data analysis.

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