

# When Research Does Not Start with a Question:

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## Teaching with the *Framework* and *Visual Literacy Standards* within Art and Architecture Librarianship

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**Abstract**—While much has been written about implementing the *ACRL Framework for Information Literacy for Higher Education* in various classroom settings, this article addresses mapping the *ACRL Visual Literacy Competency Standards for Higher Education* to the *Framework* in designing instruction for art and architecture students. Disciplinary lenses, allowing for an integrative, pragmatic heuristic, are coupled with an integration of approaches found in the library instruction literature, including faculty and librarian teaching partnerships and assessment. The versatility of mapping these professional documents is demonstrated through implementation in both one-shot and embedded instruction.

[The following article is an expansion of two papers presented at the eponymous panel session, co-organized by the authors at the ARLIS/NA conference held in New Orleans, Louisiana, February 2017.]

### INTRODUCTION

This article addresses the innovative ways two instruction librarians are aligning the 2011 Association of College and Research Libraries (ACRL) *Visual Literacy Competency Standards for Higher Education* (*Visual Literacy Standards*) with the 2015 *ACRL Framework for Information Literacy for Higher Education* (*Framework*). The authors situate these professional guidelines within the theoretical literature in librarianship and higher

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education in order to develop learner-centered information literacy instruction for art and architecture students. Shannon Marie Robinson draws connections between two *Visual Literacy Standards* and one threshold concept from the *Framework*. In this one-shot instruction session, art and design students actively learn about the organization of physical and virtual library spaces through browsing. This information-seeking behavior is used as a creatively driven method for students to discover images for inspiration. Stephanie Beene advocates for collaborative instructional design, closely engaging with concepts from both professional documents, mapped to the *National Architecture Accreditation Board (NAAB) Standards*. In this case study, standards documents guided the curatorial, research, and creative outputs of an architecture graduate student workshop on research methodologies.

### UNDERSTANDING THE INFORMATION NEEDS OF ART AND ARCHITECTURE STUDENTS

In a 1996 seminal study on the information-seeking behavior of artists, Susie Cobbledick noted that they exhibit five distinct information needs: inspiration, imagery, technical knowledge, current trends in the art world, and business guidance for marketing and career planning.<sup>1</sup> More than a decade later, William Hemmig, among others, confirmed these findings, supporting a dependable model of artists' information needs and research behaviors.<sup>2</sup> He identified behaviors that describe how artists fulfill these needs, often requiring an exploration of non-art information, a preference for browsing, and use of personal networks as a source of information.<sup>3</sup> While numerous studies since have examined the information needs of art practitioners<sup>4</sup> and art faculty,<sup>5</sup> Hemmig found little difference between academically affiliated artists and those not connected to an institution of higher education.<sup>6</sup> Likewise, the information needs and behaviors of art students are similar to those of art practitioners.<sup>7</sup> Students' academic library use is largely self-motivated and includes exploring resources beyond the boundaries of arts and architecture, often using library resources in-house rather than bor-

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1. Susie Cobbledick, "The Information Seeking Behavior of Artists: Exploratory Interviews," *The Library Quarterly* 66, no. 4 (October 1996): 343–72.

2. William S. Hemmig, "The Information-Seeking Behavior of Visual Artists: A Literature Review," *Journal of Documentation* 64, no. 3 (2008): 343–62.

3. William Hemmig, "An Empirical Study of the Information-Seeking Behavior of Practicing Visual Artists," *Journal of Documentation* 65, no. 4 (2009): 684.

4. Sandra Cowan, "Informing Visual Poetry: Information Needs and Sources of Artists," *Art Documentation* 23, no. 2 (Fall 2004): 14–20; Helen Mason and Lyn Robinson, "The Information-Related Behaviour of Emerging Artists and Designers: Inspiration and Guidance for New Practitioners," *Journal of Documentation* 67, no. 1 (2011): 159–80.

5. Tori R. Gregory, "Under-Served or Under-Surveyed: The Information Needs of Studio Art Faculty in the Southwest United States," *Art Documentation* 26, no. 2 (Fall 2007): 57–66; Catherine Larkin, "Looking to the Future While Learning from the Past: Information Seeking in the Visual Arts," *Art Documentation* 29, no. 1 (Spring 2010): 49–60; Bonnie Reed and Donald R. Tanner, "Information Needs and Library Services for the Fine Arts Faculty," *The Journal of Academic Librarianship* 27, no. 3 (May 2001): 229–33; Carol van Zijl and Elizabeth M. Gericke, "Methods Used by South African Visual Artists to Find Information," *Mousaion* 19, no. 1 (2001): 3–24.

6. Hemmig, "An Empirical Study of the Information-Seeking Behavior of Practicing Visual Artists," 698.

7. Philip Pacey, "How Art Students Use Libraries," in *A Reader in Art Librarianship*, ed. Philip Pacey (Munich: K.G. Saur, 1985), 51–55.

rowing them.<sup>8</sup> Laurel Littrell developed a similar model of academic artists' creative process: finding inspiration, discovering their voice within their discipline, and then producing visual or performative artifacts.<sup>9</sup> She concludes that in an academic library, "an artist can come in and become lost in other worlds, new ideas, new sounds and images—or find refuge from everything except one's own mind."<sup>10</sup>

However, not all art students are confident in their research skills. In supporting the information needs of studio art and architecture students, Hannah Bennett noted that when confronted with a research paper assignment, many students feel frustrated with or even intimidated by library systems and research processes foreign to their studio-based course of study.<sup>11</sup> Learning styles may be key to understanding this frustration. Among architecture students, Jeanne Brown identified four dominant styles: visual, kinesthetic/haptic, interpersonal, and independent. These learners' needs go unmet by much traditional library instruction.<sup>12</sup> Sheila Klos found that "architecture students view the library as an obstacle rather than a tool."<sup>13</sup> Another unique challenge inherent to art students' information needs centers around intellectual property.<sup>14</sup> Synthesis and appropriation of found images may be incorporated into students' own artwork, indicating an understanding of copyright and permissions that runs counter to traditional notions of citation and plagiarism.<sup>15</sup> Art students are encouraged to copy masterworks in order to learn art techniques and materials. When warned about plagiarism and copyright while writing research papers, these students are understandably confused.<sup>16</sup>

The literature suggests that the information needs and behaviors of art and architecture students are unique, idiosyncratic, and sometimes challenging for academic librarians. However, through strategic outreach, librarians have found ways to collaborate with art faculty to integrate information and visual literacy instruction and assessment into the curriculum. While the literature on art and architecture students' needs and research behaviors is relatively recent, research on visual and information literacies has a much longer history.

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8. Day and McDowell, "Information Needs and Use of Art and Design Students," 34–35; Polly Frank, "Student Artists in the Library: An Investigation of How They Use General Academic Libraries for Their Creative Needs," *The Journal of Academic Librarianship* 26, no. 6 (1999): 449, 452.

9. Laurel Littrell, "Artists: The Neglected Patrons?" (paper, ACRL Tenth Annual Conference, Denver, CO, March 15–18, 2001), 292–93, <http://www.ala.org/acrl/sites/ala.org/acrl/files/content/conferences/pdf/littrell.pdf>.

10. Littrell, 293.

11. Hannah Bennett, "Bringing the Studio into the Library: Addressing the Research Needs of Studio Art and Architecture Students," *Art Documentation* 25, no.1 (2006) 38–42.

12. Jeanne M. Brown, "The Visual Learner and Information Literacy: Generating Instruction Strategies for Design Students" (paper, Art Libraries Society of North America/Visual Resources Association Joint Conference, St. Louis, MO, March 20–26, 2002), 6–7, [http://digitalscholarship.unlv.edu/lib\\_articles/101/](http://digitalscholarship.unlv.edu/lib_articles/101/).

13. Sheila M. Klos, "Information Literacy for the Next Generation," *Journal of Architectural Education* 49, no. 3 (February 1996): 204.

14. Amanda Gluibizzi, "Visual Literacy for Highly Literate Viewers," in *The Handbook of Art and Design Librarianship*, eds. Amanda Gluibizzi and Paul Glassman (London: Facet Publishing, 2010), 133–44.

15. Gluibizzi, 136.

16. Beth Walker, "New Twists on an Old Problem: Preventing Plagiarism and Enforcing Academic Integrity in an Art and Design School," *Art Documentation* 28, no. 1 (2009): 48–51.

## VISUAL AND INFORMATION LITERACIES

### VISUAL LITERACY

Visual literacy's long history as a cognitive theory spans the fields of art education, psychology, and photography.<sup>17</sup> As early as 1954, Rudolf Arnheim applied Gestalt psychology to visual perception,<sup>18</sup> and in 1968 the Eastman Kodak Company coined the term "visual literacy."<sup>19</sup> A year later, Arnheim published *Visual Thinking*,<sup>20</sup> which began to articulate pedagogical theories and practical issues that framed the First National Conference on Visual Literacy.<sup>21</sup> An abundance of research published in the dozen years following the inaugural conference included Allan Paivio's influential work *Imagery and Verbal Processes*.<sup>22</sup> Formative theories introduced in this time period include visual language,<sup>23</sup> visual thinking,<sup>24</sup> visual learning,<sup>25</sup> mental imagery,<sup>26</sup>

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17. There are several excellent literature reviews of the term as well as its use in various circles. See Robert A. Braden, "Visual Literacy," in *The Handbook of Research for Educational Communications and Technology*, ed. D. H. Jonassen (New York: Macmillan Library Reference USA, 1996); Barbara Blummer, "Some Visual Literacy Initiatives in Academic Libraries: A Literature Review from 1999 to Present," *Journal of Visual Literacy* 34, no. 1 (2015): 1–34; M. Avgerinou and J. Ericson, "A Review of the Concept of Visual Literacy," *British Journal of Educational Technology* 28, no. 4 (1997): 280–91.

18. In an interview with Rudolph Arnheim in *Cabinet Magazine*, Arnheim explains, "The essence of an image is its ability to convey meaning through sensory experience. . . . We have to realize that perception organizes the forms that it receives as optical projections in the eye. Without form an image cannot carry a visual message into consciousness. Thus it is the organized forms that deliver the visual concept that makes an image legible, not conventionally established signs. . . . Consequently *Art and Visual Perception* deals with the relationship between perception and art." Uta Grundmann, "The Intelligence of Vision: An Interview with Rudolf Arnheim," *Cabinet Magazine*, no. 2 (Spring 2001), <http://www.cabinetmagazine.org/issues/2/rudolfarnheim.php>. See also Rudolf Arnheim, *Art and Visual Perception: A Psychology of the Creative Eye* (Berkeley: University of California Press, 1954).

19. Eastman Kodak Company, *Elements of Visual Literacy: Selected Articles from Kodak's Periodical, Visuals Are a Language* (Rochester, NY: Eastman Kodak Company, 1968).

20. Rudolf Arnheim, *Visual Thinking* (Berkeley: University of California Press, 1969).

21. Clarence M. Williams and John Debes III, eds., *Proceedings of the First National Conference on Visual Literacy*, Rochester, NY, March 23–26, 1969 (New York: Pitman Publishing Corp., 1970).

22. Robert A. Braden, "Visual Literacy," in *The Handbook of Research for Educational Communications and Technology*, ed. D. H. Jonassen (New York: Macmillan Library Reference USA, 1996), <http://www.aect.org/edtech/edi/16/index.html>.

23. L. J. Ausburn and F. B. Ausburn, "Visual Literacy: Background Theory and Practice," *Programmed Learning & Educational Technology* 15 (1978): 291–97; John L. Debes, "Some Aspects of the Reading of Visual Languages" (presentation, National Conference on Visual Literacy, Cincinnati, OH, March 1972); John L. Debes, "Mind, Languages, and Literacy" (presentation, National Council of Teachers of English, New Orleans, November, 1974); C. M. Turbayne, *The Myth of Metaphor* (Charleston: University of South Carolina Press, 1970); Colin M. Turbayne, "The Syntax of Visual Language," in *Proceedings of the First National Conference on Visual Literacy*, Rochester, NY, March 23–26, 1969, eds. C. M. Williams and J. L. Debes (New York: Pitman Publishing Corp., 1970).

24. Rudolf Arnheim, *Visual Thinking*; R. N. Haber, "How We Remember What We See," *Scientific American* 222, no. 5 (1970): 104–12; R. E. Wileman, *Exercises in Visual Thinking* (New York: Hastings, 1980).

25. C. A. Dwyer, *Strategies for Improving Visual Learning: A Handbook for the Effective Selection, Design, and Use of Visualized Materials* (State College, PA: Learning Services, 1978); D. H. Jonassen and D. J. Fork, "A Constructive View of Visual Learning," in *Exploration and Interpretation: Theoretical Approaches to the Study of Visual Literacy and Visual Learning*, eds. D. J. Fork & J. J. Newhouse (Philadelphia: International Visual Literacy Association, 1978); B. S. Randhawa, K. T. Back, and P. J. Meyers, "Visual Learning" (presentation, Association for Educational Communication and Technology, April 1977).

26. R. L. Clark, "Media, Mental Imagery, and Memory," *Educational Communication and Technology Journal* 26, no. 4 (1978): 355–63.

semiotics and dual coding,<sup>27</sup> abstraction,<sup>28</sup> and cultural interaction.<sup>29</sup> By no means exhaustive, this list illustrates the range of ideas foundational to the theory of visual literacy.

In 2011, ACRL codified the *Visual Literacy Competency Standards for Higher Education*, defining visual literacy as “a set of abilities that enables an individual to effectively find, interpret, evaluate, use, and create images and visual media.”<sup>30</sup> Visual literacy empowers a learner to analyze and create images through contextual, cultural, and pedagogical lenses, as “both a critical consumer of visual media and a competent contributor to a body of shared knowledge and culture.”<sup>31</sup> Developed to complement the now rescinded *ACRL Information Literacy Competency Standards for Higher Education (Information Literacy Standards)*, the *Visual Literacy Standards* are a guide for librarians designing instruction, assessing learning outcomes, and mapping the *Visual Literacy Standards* to other literacies.<sup>32</sup>

#### INFORMATION LITERACY

The phrase “information literacy” originated with Paul Zurkowski and included in a 1974 report written on behalf of the National Commission on Libraries and Information Science.<sup>33</sup> He argued for information literacy as a response to new publishing models and multiplying avenues of access to information.<sup>34</sup> Similar reports followed, leading the American Library Association (ALA) to convene the first Presidential Committee on Information Literacy. Its report provided a working definition of information literacy as “the ability to recognize when information is needed” and effectively find,

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27. W. H. Levie, “A Prospectus for Instructional Research on Visual Literacy,” *Educational Communications and Technology Journal* 26, no. 1 (1978): 25–36; W. H. Levie and D. Levie, “Pictorial Memory Processes,” *AV Communication Review* 23, no. 1 (1975): 81–95; Allen Paivio, *Imagery and Verbal Processes* (New York: Holt, Rinehart & Winston, 1971); Allen Paivio, “Perceptual Comparisons Through the Mind’s Eye,” *Memory and Cognition* 3, no. 6 (1975): 635–47; Allen Paivio, “The Empirical Case for Dual Coding,” in *Imagery, Memory, and Cognition* (Hillsdale, NJ: Erlbaum, 1983), 307–32; G. Salomon, “Can We Affect Cognitive Skills Through Visual Media?” *AV Communication Review* 20, no. 4 (1972): 401–23; G. Salomon, “Media and Symbol Systems as Related to Cognition and Learning,” *Journal of Educational Psychology* 71 (1979): 131–48; G. Salomon, *Interaction of Media, Cognition and Learning: An Exploration of How Symbolic Forms Cultivate Mental Skills and Affect Knowledge Acquisition* (San Francisco: Jossey-Bass, 1979).

28. E. D. Clark and M. P. Clark, “The Theoretical Context of Visual Literacy: Understanding the Nature of Two Types of Knowledge” (presentation, Annual Conference of the International Visual Literacy Association, Nashville, TN, 1976); E. D. Clark, “Levels of Abstraction: Theoretical Concepts in Explaining the Place of Visuals in Instructional Strategies,” in *Exploration and Interpretation: Theoretical Approaches to the Study of Visual Literacy and Visual Learning*, eds. D. Fork and J. J. Newhouse (Philadelphia: International Visual Literacy Association, 1978).

29. L. M. Cochran, P. Younghouse, J. Sorflaten, and R. Molek, “Exploring Approaches to Researching Visual Literacy,” *Educational Communications and Technology Journal* 28, no. 4 (1980): 243–65.

30. *Visual Literacy Competency Standards for Higher Education*, Association of College and Research Libraries, last modified October 2011, <http://www.ala.org/acrl/standards/visualliteracy>.

31. *Visual Literacy Competency Standards for Higher Education*.

32. 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 (January 2013): 62–64.

33. Paul G. Zurkowski, “The Information Service Environment: Relationships and Priorities, Related Paper No. 5” (presentation, National Commission on Libraries and Information Science, Washington, DC, November 1974): 1–27, <https://eric.ed.gov/?id=ED100391>.

34. Zurkowski, 6.

evaluate, and use information.<sup>35</sup> In 2000, ACRL approved the *Information Literacy Competency Standards for Higher Education*. Eleven years later, a task force assigned to review and possibly update the standards explored the theory of threshold concepts in relation to a revised definition of information literacy, and the *Framework for Information Literacy for Higher Education* began to take shape.<sup>36</sup> Economists Jan Meyer and Ray Land outline characteristics of threshold concepts that embody a transformative understanding of an idea.<sup>37</sup> Regardless of discipline, threshold concepts are irreversible, integrative, possibly bounded by the discipline, and likely troublesome.<sup>38</sup>

In early 2016, ACRL adopted the *Framework*, a set of six threshold concepts.<sup>39</sup> With this document came an expanded understanding of information literacy as a “set of integrated abilities encompassing the reflective discovery of information,” with attention to how information is produced and disseminated through social, economic, and ethical lenses.<sup>40</sup> A deliberate departure from the *Information Literacy Standards* and skillsets assessment, the *Framework* is expected to be implemented according to local need and learning outcomes.<sup>41</sup> Rebecca Kuglitsch recommends that academic librarians teach the concepts “as a type of teaching for transfer,” whereby students learn to apply information literacy concepts to their respective disciplines.<sup>42</sup> Librarians are revising learning outcomes and assessment for one-shot instruction, as well as seeking opportunities for embedding the information literacy threshold concepts within students’ disciplinary coursework.<sup>43</sup>

## USING INFORMATION LITERACY AND VISUAL LITERACY IN ART AND ARCHITECTURE INSTRUCTION

Because the *Information Literacy Standards* were in existence for over a decade, there are numerous examples of art librarians using them to inform library instruction.<sup>44</sup>

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35. Presidential Committee on Information Literacy: Final Report, January 10, 1989, American Library Association, <http://www.ala.org/acrl/publications/whitepapers/presidential>.

36. “History of the Framework for Information Literacy for Higher Education,” Association of College and Research Libraries, [http://acrl.ala.org/framework/?page\\_id=41](http://acrl.ala.org/framework/?page_id=41).

37. Jan Meyer and Ray Land, *Threshold Concepts and Troublesome Knowledge: Linkages to Ways of Thinking and Practicing within the Disciplines* (Edinburgh: ETL Project, 2003), <https://kennslumidstod.hi.is/wp-content/uploads/2016/04/meyerandland.pdf>.

38. Meyer and Land, 4–5.

39. *ACRL Framework for Information Literacy for Higher Education*, Association of College and Research Libraries, last modified January 11, 2016, <http://www.ala.org/acrl/standards/ilframework>.

40. *ACRL Framework for Information Literacy for Higher Education*.

41. *ACRL Framework for Information Literacy for Higher Education*.

42. Rebecca Z. Kuglitsch, “Teaching for Transfer: Reconciling the Framework with Disciplinary Information Literacy,” *portal: Libraries and the Academy* 15, no. 3 (July 2015): 45.

43. Megan Oakleaf, “A Roadmap for Assessing Student Learning Using the New Framework for Information Literacy for Higher Education,” *The Journal of Academic Librarianship* 40 (2014): 510–14.

44. Laurel Bliss and Barbara Rockenbach, “Persuading Architecture Faculty that Library Instruction Is Essential: A Yale Case Study,” *Art Documentation* 21, no. 2 (Fall 2002): 21–24; Aniko Halverson, “Confronting Information Literacy in an Academic Arts Library,” *Art Documentation* 27, no. 2 (2008): 34–38; Alessia Zanin-Yost and Erin Tapley, “Learning in the Art Classroom: Making the Connection Between Research and Art,” *Art Documentation* 27, no. 2 (2008): 40–45; Alessia Zanin-Yost, “Designing Information Literacy: Teaching, Collaborating, and Growing,” *New Library World* 113, no. 9/10 (2012): 448–61.

However, many were not satisfied with the standards because they did not address important art and architecture competencies and accreditation requirements, namely, visual literacy and multimodal learning styles. To tailor instruction to studio-based students, librarians turned to other professional documents and pedagogical theories. Rina Vecchiola worked with the *ARLIS/NA Information Competencies for Students in Design Disciplines (Information Competencies)* to create scaffolded, discipline-specific proficiencies.<sup>45</sup> Others developed visual literacy skillsets, precursors to the *Visual Literacy Standards*, to align with the *Information Literacy Standards*.<sup>46</sup>

Aligning multiple theories and competencies in order to develop art information literacy instruction is not new. After the *Visual Literacy Standards* were implemented, Nicole Beatty outlined how librarians can combine cognitive theories with standards to inform instruction.<sup>47</sup> Katie Greer grounded her scaffolded instruction program in both sets of standards as well as referencing the *Information Competencies*.<sup>48</sup> Now that the *Information Literacy Standards* have been rescinded, art librarians are beginning to restructure their teaching practices in light of the *Framework*. Notably, Larissa Garcia and Jessica Labatte found that the *Framework* encouraged a metaliteracy approach to teaching that allowed them to consider the threshold concepts as metaphors, easily connecting creativity and critical thinking.<sup>49</sup>

Of importance to the authors' instructional design, Benjamin Harris suggested methods for aligning cognitive learning, visual literacy, and information literacy theories into library and traditional classroom instruction.<sup>50</sup> His work, predating the *Visual Literacy Standards*, used visual literacy competencies defined within Maria Avgerinou's substantial body of research on the subject.<sup>51</sup> Aligning the *Information Literacy Standards* with Avgerinou's competencies, Harris demonstrated how mapping standards and competencies from multiple disciplines enhances librarians' instructional design. He cautions librarians against the "tendency to collapse the literacies into one another."<sup>52</sup> The challenge lies with finding the similarities and spaces between two or more literacies while acknowledging the differences between them. "Aligning out-

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45. Rina Vecchiola, "Using *ARLIS/NA Information Competencies for Students in Design Disciplines* in Course Integrated Information Literacy Instruction at Washington University in St. Louis," *Art Documentation* 30, no. 1 (Spring 2011): 74–78.

46. Brown, "The Visual Learner and Information Literacy"; Benjamin R. Harris, "Blurring Borders, Visualizing Connections: Aligning Information and Visual Literacy Outcomes," *Reference Services Review* 38, no. 4 (2010): 523–35; Barbara Rockenbach and Carol Ann Fabian, "Visual Literacy in the Age of Participation," *Art Documentation* 27, no. 2 (Fall 2008): 26–31.

47. Nicole A. Beatty, "Cognitive Visual Literacy: From Theories and Competencies to Pedagogy," *Art Documentation* 32, no. 1 (Spring 2013): 33–42.

48. Katie Greer, "Connecting Inspiration with Information: Studio Art Students and Information Literacy Instruction," *Communications in Information Literacy* 9, no. 1 (2015): 83–94.

49. Larissa Garcia and Jessica Labatte, "Threshold Concepts as Metaphors for the Creative Process: Adapting the Framework for Information Literacy to Studio Art Classes," *Art Documentation* 34, no. 2 (Fall 2015): 235–48.

50. Harris, "Blurring Borders, Visualizing Connections." Also see Benjamin R. Harris, "Image-Inclusive Instruction," *College & Undergraduate Libraries* 14, no. 2 (2007): 65–75.

51. Maria D. Avgerinou, "Re-Viewing Visual Literacy in the 'Bain d'Images Era,'" *TechTrends* 53, no. 2 (March/April 2009): 28–34, <https://eric.ed.gov/?id=EJ838566>; Maria D. Avgerinou, "Towards a Visual Literacy Index," *Journal of Visual Literacy* 27, no. 1 (Spring 2007): 29–46.

52. Harris, "Blurring Borders, Visualizing Connections," 525.

comes can show the spaces shared” by information literacy and visual literacy,<sup>53</sup> allowing librarians to grow in their critical understanding of liaison areas, multiple literacies, instructional design, and teaching responsibilities.<sup>54</sup>

In light of Harris and others who have aligned standards and competencies to develop information literacy instruction, the remainder of this article outlines how the authors have mapped the *Visual Literacy Standards* to the *Framework*. As necessary, they have incorporated additional art and architecture learning objectives and pedagogical theories in order to develop meaningful, student-centered learning. First, Shannon Marie Robinson shares her approach to a one-shot information literacy session for studio-based artists and designers. She mapped two *Visual Literacy Standards* to one *Framework* threshold concept to develop instruction focused on browsing as an information-seeking practice for generating inspiration. Robinson has led this session at numerous academic institutions for various disciplines, including photography, graphic design, fashion, and sculpture, demonstrating the applicability of this instruction across curriculums and grade levels. Stephanie Beene follows with a case study mapping visual and information literacies to the *National Architecture Accreditation Board (NAAB) Standards* at the University of New Mexico for a collaborative library instruction workshop taught within the context of the Research Methodology Seminar for architecture graduate students. Throughout the 2016–17 academic year, she partnered with Mark Childs, professor and associate dean of the School of Architecture, to assess and develop a variety of creative and professional products, some of which are discussed here.

## **BROWSING FOR INSPIRATION: A ONE-SHOT INSTRUCTION SESSION FOR ART STUDENTS**

### **BROWSING AS AN INFORMATION-SEEKING PROCESS OF ART STUDENTS**

Over thirty years ago, Philip Pacey remarked that the art student is a “compulsive browser,” visiting libraries “to spark off their imagination.”<sup>55</sup> Though browsing appears to be a simple, non-goal-oriented process, Shan-Ju Chang and Ronald Rice’s comprehensive review of browsing validated a multidimensional, complex framework that encompasses this information-seeking behavior.<sup>56</sup> Since then, much of the literature on the information-seeking behaviors of artists acknowledges this user group’s preference for browsing,<sup>57</sup> finding books to be valuable sources for discover-

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53. Harris, 526.

54. Harris, 531.

55. Pacey, “How Art Students Use Libraries,” 53.

56. Shan-Ju Chang and Ronald E. Rice, “Browsing: A Multidimensional Framework,” vol. 28 of *Annual Review of Information Science and Technology (ARIST)* (Medford, NJ: Learned Information, Inc., 1993).

57. Day and McDowell, “Information Needs and Use of Art and Design Students”; Gregory, “Under-Served or Under-Surveyed”; Littrell, “Artists: The Neglected Patrons?”; Mason and Robinson, “The Information-Related Behavior of Emerging Artists and Designers”; and Effie Patelos, “Research Intersections within Practice: Artists and Librarians,” *Art Documentation* 32, no.1 (Spring 2013): 41–53.



ing images for inspiration.<sup>58</sup> William Hemmig stated that artists participate in “passive information acquisition,” suggesting that browsing is a primary information-seeking behavior even if unarticulated by artists as a research practice.<sup>59</sup> Notably, Carol van Zijl and Elizabeth Gericke report that over 93 percent of their survey’s artist respondents browse library shelves.<sup>60</sup> Additionally, Katie Greer stated that because students’ citations of books had dramatically declined, her faculty now require students to use books for their assignments in order to encourage browsing as a research method.<sup>61</sup>

In an enlightening 1999 study, Polly Frank spoke with art students who reported that browsing was one of their main search strategies. Students started a search in the library catalog but used only a few call numbers as reference to start browsing the shelves.<sup>62</sup> Frank found that students literally judge a book by its cover, relaying their reactions to artwork and titles on book jackets and artwork illustrated throughout.<sup>63</sup> Color imagery and overall condition of a book were also factors in selection. One astute student described browsing as “visual critical thinking.”<sup>64</sup> Barbara Rockenbach and Carol Ann Fabian similarly state that “visual literacy can be understood as a form of critical viewing in much the same way as information literacy can be understood as critical thinking.”<sup>65</sup> More poetically, another student from Frank’s study remarked, “I didn’t know what I was after, but I found it anyway.”<sup>66</sup>

However, serendipitous discovery by browsing in library stacks is not without issues. The artists interviewed by Susie Cobbledick all cited various impediments to browsing in academic libraries.<sup>67</sup> A sculptor found the practice “ineffective” because the “good books” get lost amid the dated “very boring books” or are “off in oversized books or special collections.”<sup>68</sup> Two other artists mention that academic libraries are “unfriendly” and “just not easy” to navigate.<sup>69</sup> Laurel Littrell found that most library designs impede browsing, particularly in the arts.<sup>70</sup> Many of the art and design books are oversized and shelved in a different location from the regular-sized books. Media resources as well as print journals, still heavily used in arts and design for visual ref-

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58. Jennifer Hamilton, “Ways of Seeking: Sources and Channels of Information Used by Visual Artists” (master’s thesis, McGill University, 2010); Lindsay King, “Currency and Continuity: Collection Management, Renewal, and De-accession,” in *The Handbook of Art and Design Librarianship* (London: Facet Publishing, 2010), 68; Larkin, “Looking to the Future While Learning from the Past”; Mason and Robinson, “The Information-Related Behavior of Emerging Artists and Designers”; Patelos, “Research Intersections within Practice”; and Reed and Tanner, “Information Needs and Library Services for the Fine Arts Faculty.”

59. Hemmig, “An Empirical Study of the Information-Seeking Behavior of Practicing Visual Artists,” 695.

60. Van Zijl and Gericke, “Methods Used by South African Visual Artists to Find Information,” 6.

61. Greer, “Connecting Inspiration with Information,” 90.

62. Frank, “Student Artists in the Library,” 450.

63. Frank, 450.

64. Frank, 451.

65. Rosenbach and Fabian, “Visual Literacy in the Age of Participation,” 29.

66. Frank, “Student Artists in the Library,” 451.

67. Cobbledick, “The Information Seeking Behavior of Artists.”

68. Cobbledick, 357.

69. Cobbledick, 357–58.

70. Littrell, “Artists: The Neglected Patrons?,” 293.

ferences, are also shelved separately from books. Nancy Fawley remarks, “Browsing the library stacks, however, as simple as it may sound, can be an intimidating activity to students with little to no library experience.”<sup>71</sup>

Another barrier to browsing may be misperceptions of creative-minded students as their learning preferences are discussed in education circles. Browsing as a search method is driven by curiosity, and one associates curiosity with childlike-wonder, seemingly in direct opposition to scholarly pursuits. Bruce Perry’s article on curiosity in early childhood education describes ways that innate curiosity fades as children’s responses to exploration are thwarted.<sup>72</sup> bell hooks recollects how children are encouraged to wonder aloud and engage their imaginations; yet, as children grow, they are taught to recognize imagination as “a force that could possibly impede knowledge acquisition.”<sup>73</sup> While she acknowledges this force may be absent in art and design academic pathways, the current educational system diminishes wonder in even the most creative students. Because visual and tactile learners are often neglected in the traditional grade school classroom, as college studio-based students they may be unaware of more physically (and thereby mentally) engaging research methods. This is why Holly Wilson and Laena McCarthy advocate for serving multiple literacies in art library instruction.<sup>74</sup> An environment in which students are encouraged to confront “the problematic nature of information use and evaluation” fosters discovery.<sup>75</sup> Art students expect to participate actively in their learning process.<sup>76</sup> Active participation easily aligns with the four learning styles identified by Jeanne Brown.<sup>77</sup> Therefore, librarians must create a dynamic experience that encourages visual and kinesthetic learning in which students can independently and physically engage with information to understand it fully.<sup>78</sup> When students are taught that browsing books is valid, they recognize the process as a research method that is vital to their creative practice.<sup>79</sup>

#### SEARCHING FOR INSPIRATION WITH NOVICE ART STUDENTS

Robinson developed a one-shot information literacy session, between fifty minutes to an hour in length, that addresses art and design students’ need for images for inspiration. The image sources, accessed through browsing and searching the library catalog, are relevant to the students’ discipline and cater to personal interest. This ses-

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71. Nancy Fawley, “Cultural Differences and Information Literacy Competencies,” in *The Handbook of Art and Design Librarianship*, eds. Amanda Gluibizzi and Paul Glassman (London: Facet Publishing, 2010): 177.

72. Bruce D. Perry, “Curiosity: The Fuel of Development,” *Scholastic Early Childhood Today* 15, no. 6 (March 2001): 22–23.

73. bell hooks, *Teaching Critical Thinking: Practical Wisdom* (New York: Routledge, 2010), 60.

74. Holly Wilson and Laena McCarthy, “Touch, See, Find: Serving Multiple Literacies in the Art and Design Library,” in *The Handbook of Art and Design Librarianship*, eds. Amanda Gluibizzi and Paul Glassman (London: Facet Publishing, 2010): 186.

75. Randy Burke Hensley, “Curiosity and Creativity as Attributes of Information Literacy,” *Reference & User Services Quarterly* 44, no. 1 (Fall 2004): 32.

76. Rockenbach and Fabian, “Visual Literacy in the Age of Participation,” 27.

77. Brown, “The Visual Learner and Information Literacy.”

78. Wilson and McCarthy, “Touch, See, Find,” 184–85; also see Brown, “The Visual Learner and Information Literacy.”

79. Wilson and McCarthy, 187.

sion addresses browsing as a skill for all design students, as described in ARLIS/NA's *Information Competencies*.<sup>80</sup> At the basic skill-level, students should learn to locate books in the library, understand library book classification systems, and engage in browsing the stacks; browsing the new books shelves is an intermediate skill.<sup>81</sup> The focus of the instructional design is derived from the *Visual Literacy Standards* and the *Framework*.

Like the *Information Competencies*, learning outcomes from the first two *Visual Literacy Standards* and the *Framework*'s threshold concept Searching as Strategic Exploration address these competencies. The first *Visual Literacy Standard* emphasizes that students determine the image need and identify sources and formats to meet that need. The second Standard indicates that students should be able to find and access images successfully.<sup>82</sup> The threshold concept articulates that searching for information is a fluid, repetitive process that requires "mental flexibility" on the part of the searcher.<sup>83</sup> Like Larissa Garcia and Jessica Labatte, Robinson considers this frame an excellent metaphor for browsing.<sup>84</sup>

Considering Harris's notion of blurred but discrete borders between literacies, Robinson examined the learning outcomes of the *Visual Literacy Standards* and the *Framework*'s knowledge practices and dispositions side-by-side.<sup>85</sup> Immediate connections between outcomes and practices are evident through similarities in key terms and phrases including information and image relevancy, formats, and accessibility through iterative information-seeking processes (Figure 1). She considered the *Visual Literacy Standards* first because they are skills-based outcomes accorded a progressive structure. The *Framework*, in contrast, implies deeper connection to core information literacy notions of critical thinking, self-reflection, and ethical engagement with information. By mapping learning outcomes of the two *Visual Literacy Standards* to knowledge practices and dispositions of the *Framework*, librarians find the adaptability required to develop information and visual literacy instruction that emphasizes engaged, self-directed student learning.

In introductory studio-based courses, Robinson provides students with a handout that explains the Library of Congress call numbers for their discipline. For example, photography students receive a document that breaks down prominent sections of the call number range TR by subjects such as history, technology, works by individual photographers, fashion photography, and photojournalism. Armed with just this knowledge, students explore the stacks to find artists' monographs and books on photographic history and techniques. They are empowered to select sources based on their own interest and curiosity; the inquiry is "directed by the learner, not the facilitator."<sup>86</sup>

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80. Jeanne Brown et al., *Information Competencies for Students in Design Disciplines*, Art Libraries Society of North America, 2006, <https://www.arlisna.org/publications/arlis-na-research-reports/148-information-competencies-for-students-in-design-disciplines>.

81. Brown et al., 12, 23.

82. Hattwig et al., "ACRL Visual Literacy Competency Standards for Higher Education."

83. ACRL *Framework for Information Literacy for Higher Education*, 9.

84. Garcia and Labatte, "Threshold Concepts as Metaphors," 242.

85. Harris, "Blurring Borders, Visualizing Connections," 526.

86. Rockenbach and Fabian, "Visual Literacy in the Age of Participation," 30.

INSPIRATION through BROWSING and CATALOG SEARCHING

(image need)

(image access)

(image access)

Visual Literacy Standards

Searching as Strategic Exploration

Explores image sources *to increase familiarity* with available images and generate ideas for *relevant image content*  
(Standard 1, Learning Outcome of Performance Indicator 2)

Understand *how information systems are organized* to access *relevant information*  
(Knowledge Practice)

Investigates *the scope, content,* and potential *usefulness of a range of image sources and formats*  
(Standard 1, Learning Outcome of Performance Indicator 2)

Realize that *information sources vary greatly in content and format* and have varying relevance and value, depending on the needs and nature of the search  
(Disposition)

Recognizes that *images are often organized differently than text-based information* and that *this affects the way images can be accessed*  
(Standard 2, Learning Outcome of Performance Indicator 2)

*Use different searching language types*  
(e.g., controlled vocabulary, keywords, natural language)  
(Knowledge Practice)

Performs *image and topic research concurrently*, with each informing the other in an *iterative resource-gathering process*  
(Standard 2, Learning Outcome of Performance Indicator 2)

*Searching* for information is often *nonlinear and iterative*, requiring the *evaluation of a range of information sources*  
(Frame description)

Uses images to find other images through *exploration, social linking, visual search engines, or browsing*  
(Standard 2, Learning Outcome of Performance Indicator 2)

Recognize the value of *browsing and other serendipitous methods of information gathering*  
(Disposition)

Figure 1. Learning Outcomes from *Visual Literacy Standards* One and Two mapped to the *Framework's* threshold concept Searching as Strategic Exploration.

Browsing as a process, J. M. Budd noted, is an individual inquiry. “Since the act of creation is a personal one, the act of examining the creation also tends to be personal.”<sup>87</sup> Likewise, Randy Burke Hensley considered creativity and curiosity as largely individual

87. J. M. Budd, “Research in the Two Cultures: The Nature of Scholarship in Science and the Humanities,” *Collection Management* 11, no. 3/4 (1989): 10.

pursuits while information literacy, in contrast, is a skillset librarians attempt to impart to classrooms of students.<sup>88</sup> Amanda Gluibizzi stated that “by their very natures, visual literacy and the art student’s experience of the library are qualitative and *individual* experiences; therefore it is important that librarians respond in kind with personalized, responsive services.”<sup>89</sup> Accordingly, Robinson circulates throughout the stacks, helping students find certain call number ranges or searching the library catalog for works by a specific artist or technique. During this time, she is able to speak with individual students and facilitate each one’s unique browsing activity. Some students will find one book and spend the class period absorbing it while others will return to the stacks again and again, creating a temporary personal library.

Referencing Cognitive Load Theory, Nicole Beatty notes that “students who are introduced to completely new information have no frame of reference for the information.”<sup>90</sup> Librarians must find ways for students to connect new information with existing knowledge. After time spent browsing, Robinson leads students back to the classroom. With books of interest before them, they have just had a visual, physical, interpersonal yet independent learning experience.<sup>91</sup> With this tacit knowledge, she asks students to name the title of a book, then she searches for it in the library catalog. Robinson discusses catalog record content such as subject headings and controlled vocabulary, call numbers, and library locations. She describes keyword and subject searching as well as virtually browsing the stacks by linked call numbers in the catalog. Students compare the physical book to its digital record and begin to make sense of this new information far better than if having first viewed the catalog record without the visual and kinesthetic browsing experience.

Robinson finishes the class by sharing books and engaging in a group conversation about basic visual literacy. Students consider image placement within the book’s text. For example, some photography monographs are arranged so that the reader views only one image at a time while others place two or more works within a single page spread. This creates a discussion about how one image may impact the viewing of another. In graphic design classes, students examine how layout and design of image and text placement on the page suggest a specific path to move the reader through the book. During these conversations, Robinson turns to the faculty member as subject specialist to contribute disciplinary insight. This is not only important for a successful instruction session, but it is also a good way to encourage faculty to incorporate library visits into their classes. Art and design faculty often do not know the library’s collection and may not be able to navigate the library space. Browsing and visual literacy-centered conversations are activities in which faculty can not only participate, but lead, eliminating any unease over “giving up” or “giving over” their class time to another person. This confidence empowers faculty to collaborate with librarians in other ways, such as participating in collection development and advocating for student research consultations.

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88. Hensley, “Curiosity and Creativity as Attributes of Information Literacy,” 33.

89. Gluibizzi, “Visual Literacy for Highly Literate Viewers,” 134. Emphasis from Gluibizzi.

90. Beatty, “Cognitive Visual Literacy,” 36.

91. Brown, “The Visual Learner and Information Literacy.”

## ASSESSMENT THROUGH REFLECTION

A few moments before the end of class, Robinson asks students to reflect verbally on the experience. Immediately after the session, she records details of the class, including how much time was spent on a given activity and questions asked. She then reflects on the session. Were students engaged? Were questions asked relevant to the task or did they indicate confusion? What was the faculty response? Was he or she engaged and able to link the exercises to other course content? Reflective journaling requires her to pause and document both her actions and her thoughts.<sup>92</sup> For example, when she walks with students into the stacks, she often hears about how many times they have gotten lost or how they asked for help and someone “pointed at a door and said go up one floor” (that student left the library without a book). After the browsing session, Robinson recorded students’ responses, including “I didn’t know where the books actually were,” “I love walking around and finding books together. Could have done this for hours!” and “The trip to the library really helped me to get an understanding of where everything was located. It came in handy when I had to check out books yesterday for my art history paper on architecture.” Tactile learners articulate appreciation for the exercise, commenting about the bulk and shape of the book, as well as remarking on the quality of the printed paper and images. Browsing produces an inquiry-based environment that resembles the studio in that it is fun, it is loud, and it is messy. It encourages creativity and curiosity through a variety of learning styles. It addresses the individuals that compose the classroom. Students visually and verbally affirm that the browsing experience builds their confidence as library users and as visual researchers. Robinson often overhears students remark that they plan to come back to the library on their own and browse again—a sure sign of success.

## ARCHITECTURE RESEARCH METHODOLOGY: A GRADUATE STUDENT WORKSHOP

### ARCHITECTURAL RESEARCH, DESIGN, AND PRACTICE

Architecture is an interdisciplinary field blending studio design practice and academic research. Architectural research informs conceptual designs, requiring browsing and serendipitous inspiration, but also requires analytical and systematic research for precedent analyses and community planning. Successful architects draw upon a number of epistemologies, such as aesthetic theory; historical, socioeconomic, or cultural analyses; quantitative analyses from census, economic or demographic data; materials research; and research on companies, contractors, firms, and businesses. Architects may derive inspiration from biological forms, conduct fieldwork, map sites themselves, or make use of GIS data. To communicate effectively with stakeholders, architects use a variety of visualization techniques, including 2D, 3D and 4D models, data visualization, and infographics.

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92. Elizabeth K. Tompkins, “A Reflective Teaching Journal: An Instructional Improvement Tool for Academic Librarians,” *College & Undergraduate Libraries* 16, no. 4 (2009): 221–38.

Selena Savic, co-editor of *Journal Contour*, explains that confusion begins with whether “by architectural research we mean research about architecture, research through architecture or research for architecture.”<sup>93</sup> Savic proposes two motivations for current architectural research: normative research, aimed at improving architectural practice, or descriptive research, aimed at generating knowledge.<sup>94</sup> In contrast to Savic, Michael Hensel and Fredrik Nilsson argue that the relatively new emphasis on architectural research is due to increasingly complex projects designed with technologically advanced mechanisms.<sup>95</sup> Urban planning and architectural projects within the (built) environment have evolved drastically within the last ten years, in part due to sustainability, water and land use considerations, and social, economic, ecological, and cultural changes. The ecology of each site presents complex data which architects and planners must incorporate into design plans.<sup>96</sup>

In a seminal memorandum issued on behalf of the Royal Institute for British Architects (RIBA), Jeremy Till argues that “architecture is a form of knowledge that can and should be developed through research . . . [founded upon] originality, significance and rigor.”<sup>97</sup> Vital to the field of architecture is the recognition of its two main user groups: academia and practitioners. As others have noted, the more collaboration and communication between the two user groups, the better.<sup>98</sup> Roughly mirroring the architectural lifecycle, Till proposes that architectural research falls into three categories: architectural processes, architectural products, and architectural performance. Architectural processes research includes research into design, construction, environment, and issues of representation, which evolves into the construction of the architectural product or system.<sup>99</sup> This stage involves research into aesthetics, materials, and construction techniques. Architectural performance includes research into the product’s lifecycle as it is occupied in its environment.<sup>100</sup> The advantages of this

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93. Selena Savic, “(What) is Research Appropriate to Architecture?” *EDAR Journal Contour*, May 11, 2014.

94. Savic.

95. Michael U. Hensel and Fredrik Nilsson, “Introduction: The Changing Shape of Architectural Practice and Research,” in *The Changing Shape of Practice: Integrating Research and Design in Architecture* (New York: Routledge, 2016), xvii.

96. Hensel and Nilsson, xvii.

97. Jeremy Till, *What is Architectural Research? Architectural Research: Three Myths and One Model*, Royal Institute of British Architects (RIBA), Research and Development Committee Memorandum & Position Paper, 2007, 1–6.

98. Till, 4. The University of Minnesota’s Consortium on Research Practices outlines the iterative and fluid nature of design research and the academy, arguing that “the relation between the architectural profession and academia has the potential to be a rich and interactive exchange leading to meaningful advancement of the discipline.” The more that firms are integrated into departments for their expertise, whether in the classroom or studio reviews, and the silos between practicing professionals and academics are broken down, the more that architecture as a field can advance. Consortium for Research Practices, University of Minnesota, College of Design, 2017, <http://rp.design.umn.edu/>. Meanwhile, a 2005 UK National Conference on Current and New Research Agendas entitled “Architecture Research Futures” promoted the same interdisciplinary collaboration between practitioners and academics, policy-makers and critics. The summary from the conference speaks to the differences between academic and professional research but emphasizes the need to bridge gaps and pool resources, finding that the scholarly basis for architectural research was not as strong as it should be and therefore development of research skills in architecture schools needs proactive strengthening. Paul Jenkins, “Architecture Research Futures” (UK National Conference on Current and New Research Agendas, ScotMARK, Edinburgh University Architecture Department, December 15–16, 2005), <http://www.eca.ac.uk/archresearchconf/>.

99. Till, 5.

100. Till, 5.

model are several: it breaks the either/or dichotomy of science versus art and qualitative versus quantitative methodology, and it allows for a spectrum of methods and research processes. It embraces epistemologies and disciplinary methods external to architecture and acknowledges the temporal and dynamic nature of architecture, allowing for the fluid and iterative research loop, as one stage is informed by the other.

#### APPLYING INFORMATION LITERACY TO ARCHITECTURE EDUCATION AND RESEARCH

Because of the interdisciplinary and iterative research required by architectural research, designing instruction using an intersectional lens might be a useful pedagogical mindset. As Benjamin Harris notes, aligning outcomes from different standards allows instruction librarians to collaborate with subject area faculty in curricular design, highlighting overlapping strengths while maintaining the integrity of each standard.<sup>101</sup> Arguing for information literacy assignments and integration with library collections and services, Barrett Havens advocates for librarians' role in architectural research through the *National Architecture Accreditation Board (NAAB) Standards*.<sup>102</sup> Since at least 2014, the *NAAB Standards* have mandated that architecture schools assess students' information literacy skills when they state that students should be able to "gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment."<sup>103</sup> Havens points to the similarities in the *Framework's* definition for information literacy when it describes an integrated set of abilities that include understanding how information is produced and valued and creating new knowledge, with students participating ethically in communities of learning.<sup>104</sup> In order to best equip architecture students with the confidence to navigate the field successfully, librarians and architecture experts are collaborating on information and visual literacy instruction for architectural research.

The NAAB divides its accreditation standards into four areas, or Realms. Although each Realm may be mapped to the *Visual Literacy Standards* and the *Framework* (Figure 2), for the purposes of this case study, the focus is on the Realm that Havens cites—Realm A: Critical Thinking and Representation, which states that graduates from NAAB-

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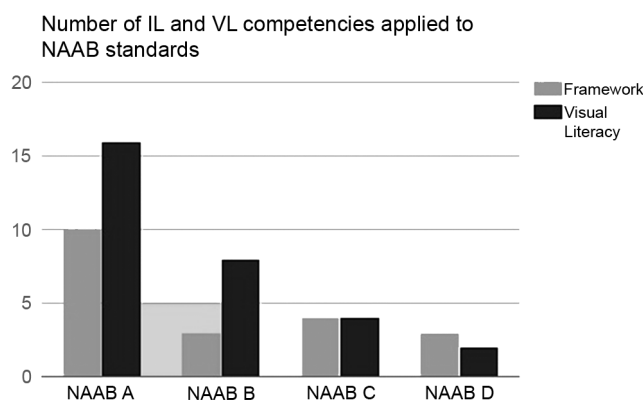
101. Harris, "Blurring Borders, Visualizing Connections," 526, 531. See also Aniko Halverson for good ideas and discussion on course design, learning outcomes, and assessment. Halverson, "Confronting Information Literacy in an Academic Arts Library," 34–38. A notable case study of instructional design mapping the *ARLIS/NA Information Competencies for Students in Design Disciplines* to the 2009 *NAAB Standards* is by Rina Vecchiola: "Using *ARLIS/NA Information Competencies for Students in Design Disciplines* in Course Integrated Information Literacy Instruction at Washington University in St. Louis," *Art Documentation* 30, no. 1 (Spring 2011): 74–78. Also consult Brown et al., *Information Competencies for Students in Design Disciplines*.

102. Barrett Havens, "Strategies for Planning Successful Information Literacy Assignments for Architecture Students," *The Association for Collegiate Schools of Architecture (ACSA) Regional News*, February 26, 2016, <http://www.acsa-arch.org/acsa-news/read/acsa-news/2016/02/26/strategies-for-planning-successful-information-literacy-assignments-for-architecture-students>.

103. Havens. As early as 2009, the *NAAB Standards* contained language pertaining to information literacy: <http://www.naab.org/wp-content/uploads/2009-Procedures-for-Accreditation.pdf>.

104. *ACRL Framework for Information Literacy for Higher Education*, 2.





**Figure 2.** Mapping the *Framework for Information Literacy for Higher Education* (light gray) and the *Visual Literacy Competencies Standards for Higher Education* (dark gray) to the *NAAB Standards*, Realms A, B, C, and D (Stephanie Beene, 2017).

accredited programs must be able to “build abstract relationships and understand the impact of ideas based on their research and analysis of multiple theoretical, social, political, economic, cultural, and environmental contexts, including using a diverse range of media to think about and convey architectural ideas in writing, investigative skills, speaking, drawing, and model making.”<sup>105</sup> It cites lifelong inquisitiveness as a value, with the ability to assess evidence and communicate graphically in a range of media, and recognize the disparate needs of client, community, and society.

#### METHODS

In her mapping (Figure 3), Beene found the most overlap between NAAB Realm A: Critical Thinking and Representation, the *Framework*, and the *Visual Literacy Standards*. She looked for keywords such as synthesis, analysis, evaluation, lifelong learning, assess, interpret, and investigate. Like Harris, she chose one set of standards and worked from there to map to the others.<sup>106</sup> Since she was designing a workshop for the Architecture Department with a syllabus that cites the *NAAB Standards*, it made

105. “2016 Visiting Team Report: Educational Outcomes and Curriculum,” *NAAB Procedures for Accreditation: Professional Degree Programs in Architecture, 2015 Edition*, approved May 6, 2015, edition in effect for all visits occurring after January 1, 2016, <http://www.naab.org/wp-content/uploads/2016/03/Full-Document.pdf>. Realm B of the NAAB: Building Practices, Technical Skills and Knowledge: Graduates from NAAB-accredited programs must be able to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to architectural solutions. This realm is concerned primarily with students being able to create building designs with well-integrated systems, construction, and environmental stewardship. Realm C: Integrated Architectural Solutions: Graduates from NAAB-accredited programs must be able to synthesize a wide range of variables into an integrated design solution, demonstrating the integrative thinking that shapes complex design and technical solutions. This is an area for further research, as it deals with information literacy and visual literacy, asking students to “evaluate options and reconcile the implications of design decisions across systems and scales.” Realm D, Professional Practice, asks students to adhere to the American Institute of Architects code of ethics in business and legal practices.

106. Harris indicates that he worked backward from the *Information Literacy Standards* to find commonalities and overlap with Avgerinou’s Visual Literacy Index. Harris, “Blurring Borders, Visualizing Connections,” 526.

	Professional Communication Skills	Design Thinking Skills	Investigative Skills	Architectural Design Skills	Ordering Systems	Use of Precedents	History and Culture	Cultural Diversity and Social Equity	
Searching as Strategic Exploration	x Y	x Y	x Y			x Y	x Y		Determines nature & extent of images needed (1)
Research as Inquiry	Y	x	x Y	x	x	x Y	x Y	x Y	Finds & Accesses images effectively & efficiently (2)
Scholarship as Conversation	x Y	Y	x Y			x Y	x Y	x Y	Interprets & Analyzes meanings of visual media (3)
Authority is Constructed & Contextual	Y	Y	x Y			x Y	x Y	x Y	Evaluates images & their sources (4)
Information Creation as a Process	x Y	x Y	x Y	x Y	x Y	x Y			Designs & creates meaningful visual media (6)
	x Y	x Y	x Y	x Y		x Y			Uses images effectively (5)
Information Has Value	x Y	x	x Y	Y	Y	x Y	x Y	x Y	Ethical, legal, economic issues surrounding images, uses images ethically (7)

**Figure 3.** Graph illustrating the NAAB Realm A, Critical Thinking and Representation, along the top row, mapped to the *Framework*, along the left column, and the *Visual Literacy Standards*, along the right column. x = concepts in the *Framework* and Y = standards in the *Visual Literacy Standards* (Stephanie Beene, 2017). The numbers in parentheses at the end of each *Visual Literacy Standard* indicates the number, 1–7, of the Standard. Where possible, it was mapped to the threshold concept within the disciplinary lens of architecture, recognizing that it is not a 1:1 mapping, and that the process is always iterative and fluid.

sense to start with those. The *Visual Literacy Standards* were easiest to map to the *NAAB Standards* since they use similar methods and language. Beene mapped indicators to indicators and outcomes to outcomes. However, because the *Framework* breaks into Frames, or threshold concepts, then into knowledge practices and dispositions, she loosely mapped “knowledge practices” to “indicators,” and “dispositions” to “outcomes,” as observable behaviors.<sup>107</sup> Beyond the scope of this article but certainly interesting for future research would be mapping Realms B through D to the *Framework* and *Visual Literacy Standards*.<sup>108</sup>

THE UNIVERSITY OF NEW MEXICO, THE NAAB, AND WORKSHOP DESIGN

In the graduate-level architecture seminar Research Methodology, accreditation standards are cited directly in the syllabus. The course guarantees students those chal-

107. A thorough literature review from Lane Wilkinson, director of instruction at University of Tennessee at Chattanooga and one of the early draft authors of the *Framework*, analyzes the challenges of the *Framework*, the early discussions surrounding it, its assessibility, and early curricular design projects. Lane Wilkinson, “The Problem with Threshold Concepts,” *Sense and Reference: A Philosophical Library Blog*, June 19, 2014, <https://senseandreference.wordpress.com/2014/06/19/the-problem-with-threshold-concepts/>.

108. One method for this could be to map “design thinking skills” in the *NAAB Standards* to Maria Avgerinou’s conceptualization of a “visual thinker,” a student who is able to translate information from one format or genre into visual or graphic media to communicate with different audiences. Translating information from one format to another maps to a variety of information literacy standards that ask learners to use information effectively for a specific purpose and audience, evaluating genre and format, thoughtfully choosing a mode of delivery, and becoming skilled in their utility of communication and design principles. Avgerinou, “Re-Viewing Visual Literacy in the ‘Bain d’Images Era,” 30.

lenging and troublesome moments, as students discover and integrate a new disciplinary vocabulary and framework for research.<sup>109</sup> The syllabus outlines that students will exhibit investigative skills, the “ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment (NAAB A.3) as shown by site and precedents analysis exercise and research proposal.”<sup>110</sup> This directly cites the NAAB Realm A section 3, which is also cited by Havens as useful for information literacy instruction.<sup>111</sup> The seminar focuses on the development and conceptualization of research questions, and emphasis is given to the relationship between research questions and design strategies.<sup>112</sup>

#### RESEARCH AS INQUIRY, INVESTIGATIVE SKILLS, AND CONCEPT MAPPING AS A VISUALIZATION EXERCISE

One of Professor Childs’s primary goals is instilling a sense of inquiry in his students so that evaluation, analysis, and curiosity become second nature. Like Bennett, Childs has discovered that students can be somewhat intimidated by rigorous research, and many are encountering it for the first time.<sup>113</sup> The threshold concept Research as Inquiry<sup>114</sup> therefore serves as a foundation throughout the collaborative workshop. The NAAB Standard, Professional Communication, manifests in multiple creative and professional outcomes of the workshop, including a literature review; a concept map of students’ research processes; a report, research and/or grant proposal; a precedent analysis; and/or a journal article. These projects also address the NAAB Standards Design Thinking Skills,<sup>115</sup> The Use of Precedents,<sup>116</sup> and of course Investigative Skills.<sup>117</sup>

Investigative Skills is crucial for assessment, accreditation, and for the *ACRL Standards* (Figure 3). Being able to evaluate, analyze, synthesize, design, create, communicate, and understand are common to all of the standards examined in this article and upheld in library and educational standards documents. Investigative Skills tasks students with understanding a range of audiences; for architecture students, these

109. Meyer and Land, *Threshold Concepts and Troublesome Knowledge*.

110. Mark C. Childs, “Research Methodology: ARCH 621” (syllabus, the University of New Mexico, School of Architecture & Planning, Spring 2017), 1–10.

111. Havens, “Strategies for Planning Successful Information Literacy Assignments for Architecture Students.”

112. Childs, “Research Methodology,” 1–10.

113. Bennett, “Bringing the Studio into the Library,” 38–42.

114. This concept states that research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field. *ACRL Framework for Information Literacy for Higher Education*, 7.

115. This concept addresses the ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards. *NAAB Procedures for Accreditation: Professional Degree Programs in Architecture 2015 Edition*, 111.

116. This concept addresses the ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices regarding the incorporation of such principles into architecture and urban design projects. *NAAB Procedures for Accreditation*, 111.

117. This concept addresses the ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment. *NAAB Procedures for Accreditation*, 111.

may be public stakeholders, policy makers, consultants, project managers, engineers, contractors, partners at a firm, professors, librarians, and peers.

In order to bridge gaps between academic research-intensive courses and professional studio practices, Professor Childs and Beene spend time framing the research process through Searching as Strategic Exploration<sup>118</sup> and Scholarship as Conversation.<sup>119</sup> One method is to place authorities and works in conversation with each other in a nonlinear, creative way. Students create a concept map or visualization of their research process, from the literature encountered to end-design products. By visualizing their research process as an investigation of scholarship, topics become conversations occurring across time, space, and media. Concept mapping lowers the frustration threshold when emphasizing the iterative nature of research, allowing students to understand how and why something enters “seminal” status. Conversely, students are able to see when a scholar or architect is unique or isolated in scholarly or professional circles. Taking public housing as a sample topic, students quickly see the need to narrow the subject down by geography, city, material, and/or era. Students researching this topic can more easily discern clusters of discussion points in a concept map, where certain cities or subtopics have been more heavily discussed than others.<sup>120</sup> Scholars, arguments, funding models, designs, and site analyses begin to emerge as ideas to pursue for their own projects. Meanwhile, keywords, subjects, authorities, and experts begin to recur throughout the visualization, becoming the connective tissue between disparate resources. Some students’ visualizations include imagery, data, or schematics, leading to a visual quest for additional images based on those already found, using tools like Artstor or browsing through monograph and periodical collections. Through the iterative nature of research, additional lines of inquiry expand as the visualizations grow organically, allowing for inspiration, serendipitous discovery, and deeper comprehension of a topic.

Rendering visible what was once invisible to them as studio students, the intangible web of library systems and research processes becomes tangible, allowing students to enter the scholarly conversation with confidence. As practitioner students, they are more familiar with making, designing, and deciphering models, and far less comfortable with poring over texts to decipher arguments. By visualizing arguments in terms of conversations that build or collapse, like monuments, students are able to see how scholars (many of them practicing architects) mirror the act of construction.

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118. Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternative avenues as new understanding develops. *ACRL Framework for Information Literacy for Higher Education*, 9.

119. Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations. *ACRL Framework for Information Literacy for Higher Education*, 8.

120. Students are shown a number of tools that provide concept mapping. Academic OneFile, a Gale Resource, <http://blog.gale.com/topic-finder/>, allows students to begin their research by visualizing their keywords and phrases through concept mapping, either via wheel or tile format. The tool will narrow their topic by thesaurus and synonym while also linking to a range of articles and resources. Though students are encouraged to use Artstor and Avery Index for more subject-specific and in-depth research, this is a good starting point for them.

NAAB STANDARDS: AUTHORITY IS CONSTRUCTED AND CONTEXTUAL;  
HISTORY AND CULTURE; AND CULTURAL DIVERSITY AND SOCIAL  
EQUITY

In asking students to interrogate conflicting voices across histories and cultures, they must recognize how these narratives are activated in the (contested) landscape in which architects plan, design, and build. The seminar does this throughout the semester by asking students to examine historical maps and compare them to current site analyses. The Community and Regional Planning and Landscape Architecture Programs, whose courses cross-list and overlap with the Architecture Department, bring a social justice lens specific to the landscape of New Mexico and Albuquerque. Addressing the NAAB Standard Authority Is Constructed and Contextual<sup>121</sup> is not difficult, then, since this particular group of students routinely evaluate conflicting data, histories, maps, and boundaries in their courses and, sometimes, lived experiences.<sup>122</sup> Through fieldwork in multicultural communities in New Mexico, it is not a stretch for many students to understand how authority is recognized differently depending on the community. This Frame is mapped to the NAAB Standards History and Culture<sup>123</sup> and Cultural Diversity and Social Equity.<sup>124</sup> Some of the topics explored in the workshop include the rise and fall of trends, styles, and schools of architecture; how some styles of architecture exist within and along ethnic and cultural lines; urban renewal and decay; food deserts; urban sprawl; and affordable housing.

By expanding the repertoire of genres and formats of sources, students can consider additional types of authorities. Architecture students often encounter sources outside traditional models of authority. Students are encouraged to expand their rhetorical use of sources beyond traditional binaries of “good” versus “bad” sources.<sup>125</sup> Students might encounter census data, longitudinal studies, and schematic drawings that inform the background of their design but will not be used in any other way. Authority becomes nuanced, as students consider that consultants, architecture critics, and practicing architects, though not academics, may also be experts, with a set of credentials and grounds of authority bestowed by a community external to academia. Students interrogate the narrative of the work; for example, why a work was designed, written, or

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121. Information resources reflect their creators' expertise and credibility and are evaluated based on the information need and the context in which the information will be used. Authority is constructed with the recognition that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required. *ACRL Framework for Information Literacy for Higher Education*, 4.

122. The University of New Mexico is a Hispanic-serving institution, with 41.7 percent self-identifying as Hispanic, regardless of any other races selected, as of spring 2017. Roughly 5 percent identify as Native American, 3.7 percent as Asian, 2.3 percent as African American, 0.2 percent as Native Hawai'ian, 36.7 percent as White, 1.8 percent as Ethnicity Unknown, 5.2 percent as Foreign, and 3.25 percent as Two or More Races.

123. This standard addresses understanding the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, and technological factors. *NAAB Procedures for Accreditation: Professional Degree Programs in Architecture*, 2015 Edition, III.

124. This standard addresses understanding the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to buildings and structures. *NAAB Procedures for Accreditation*, III.

125. Joseph Bizup, “BEAM: A Rhetorical Vocabulary for Teaching Research-Based Writing,” *Rhetoric Review* 27, no. 1 (2008): 72–86.

presented in a certain way. They may study a resource for what is missing or misleading about its presentation. Allowing for this dialectical research process ultimately allows for metacognitive considerations and dialogue, which students will need when explaining their own thought processes during critiques.

The workshop includes a visit to the Center for Southwest Research Special Collections and Archives, where students are introduced to the collected papers of John Gaw Meem,<sup>126</sup> Pueblo and Pueblo Revival Architecture, Meem's archived design process, advertisements for Historic Route 66,<sup>127</sup> and city directories for the City of Albuquerque. Students reflect on the NAAB Standard Information Creation as a Process<sup>128</sup> through the archives, spending time sifting through ephemera, photographs, correspondence, drawings, and designs by other architects, allowing them to reflect on their own design process. It provides an inside look into the funding process for Meem's architecture, the way in which some buildings are acquired, preserved, or expanded upon, with an opportunity for reflection on the modern urban landscape. The NAAB Standard Information Has Value<sup>129</sup> is discussed as students consider the ethical use of visual media in architecture, how images are used and cited in architecture literature and presentations, and their value depending on whether they are presented as part of the pre-design, the "pitch" to stakeholders in professional communication, in a publication, or in a library or archives. This discussion, of course, maps to Standard Seven of the *Visual Literacy Standards*.

#### APPLYING THE VISUAL LITERACY STANDARDS

Throughout the workshop, Beene applies the *Visual Literacy Standards* to think about how visuals are used as documents, instruments for analysis, argumentation, primary sources, visualizations, or tools within the design process. Students' use of imagery varies depending on whether an image is sought for inspiration, for derivation, or for its metadata. Standard Seven, mapped to Information Has Value, perhaps not surprisingly was the most highly mapped Visual Literacy Standard (Figure 2). This is perhaps because, within architecture, imagery is the primary vehicle for communication and analysis throughout the lifecycle of a project (schematics, drawings, models, photographs), and it is inherently complex to document and cite. In addition, professional communication of projects is tied to the professional ethics of the American Institute of Architects (AIA), the Association of Collegiate Schools of Architecture (ACSA), and to any stakeholders, publics, or community members. Stemming from those ethics, architectural students are trained to think through the extent to which visuals are needed

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126. Erin Fussell, "John Gaw Meem: New Mexico Architect," *UNM University Libraries Research Guides*, <http://libguides.unm.edu/meem>.

127. Erin Fussell, "Route 66," *UNM University Libraries Research Guides*, <http://libguides.unm.edu/route66>.

128. Information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences. *ACRL Framework for Information Literacy for Higher Education*, 5.

129. Information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world. Legal and socioeconomic interests influence information production and dissemination. *ACRL Framework for Information Literacy for Higher Education*, 6.

to communicate a project (Standard One), design meaningful visual media (Standard Six), and use images effectively (Standard Five) throughout a project's lifecycle. These Standards (One, Five, and Six), were the next most common, given the work involved in the design research and process. As novice architecture students, they are trained in studio reviews to walk the jury and audience members through their thought process from drawings to models to schematics to final project, even their failures and missteps, verbalizing the metacognitive moments where they chose one design over another. As part of the research process and intimately connected to Research as Inquiry and Search as Strategic Exploration, students are trained to find and access images effectively and efficiently (Standard Two), analyze and interpret meanings of visual media (Standard Three), and evaluate images and their sources (Standard Four). While finding it easy to articulate their own design decisions, students may find it difficult to interpret and analyze other images, and it is here where interdisciplinary research methods and techniques can be helpful. These last two Standards, in particular, may not come naturally to architecture students unless they have had other academic research courses that require them to place images in historical contexts, compare and contrast them, evaluate metadata, or track down image sources in books and/or archives. The investigative skills and iterative searching inherent to this process can be frustrating to students who are tactile, design-focused, and used to a studio-centric career path.

## CONCLUSION

Theories and competencies within information literacy and visual literacy are fundamental to studio art and architecture programs. Art librarians are revising their instruction in light of the new *ACRL Framework* and collaborating with faculty to implement a multiliteracies approach to library instruction. Mapping the *Visual Literacy Standards* to the *Framework* within the context of the unique information needs of art and architecture students brings a disciplinary focus to information literacy instruction. While Robinson adapts these practices and outcomes for a one-shot session for visual and tactile learners, Beene embeds visual and information literacies within the architecture profession, partnering with a faculty member to deliver pedagogically sound outcomes. Future plans include further adapting these case studies to a variety of audiences and learning styles. Robinson will continue to work with studio-based classes in exploring library spaces and discovering print resources through browsing. Beene continues to evolve her work toward broader and deeper assessment across NAAB Standards, experimenting with creative and professional outputs required by the architectural profession and partnering with faculty for library instruction. These case studies demonstrate how mapping the *Visual Literacy Standards* to the *Framework* illuminates the flexibility of these professional documents and the applicability of the standards and threshold concepts across disciplines and instruction formats.

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#### **APPENDIX**

The concept map below (Figure 4) is from a research project on Refugee Housing from the Research Methodology Workshop. Matthew Cooper first frames his research questions, supported by schematics (Figure 5, Detail 1). He then concept maps the literature and resources informing his research process (Figure 6, Detail 2), illustrates the models consulted (Figure 7, Detail 3), and finally concept maps the criteria for evaluation and methodologies discovered during the research process (Figure 8, Detail 4). This poster was presented for critique and evaluation on April 27, 2017 (ARCH 261, Professor Childs, University of New Mexico).





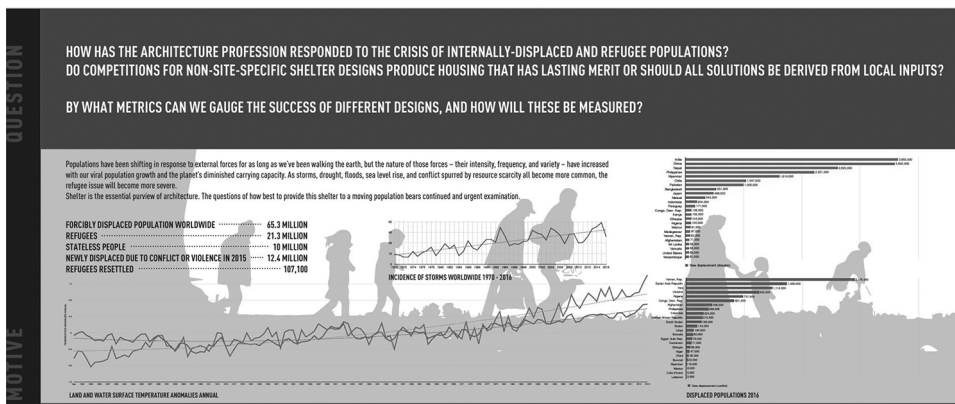


Figure 5. Detail 1: The Research Questions, with schematics. Please see the online edition of *Art Documentation* for a color version of this image.

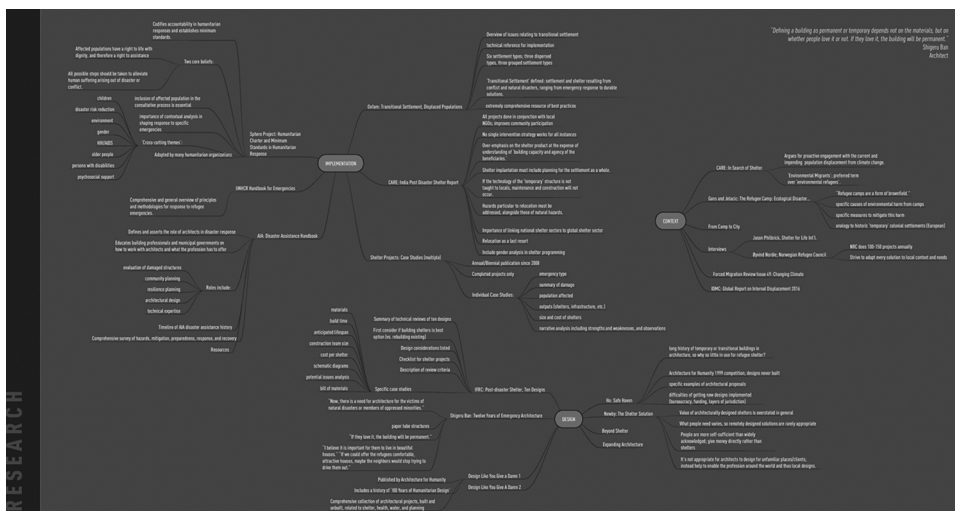


Figure 6. Detail 2: The Research Process Mapped through Encounters with the Literature. Please see the online edition of *Art Documentation* for a color version of this image.

