Where Visual and Information Literacies Meet: Redesigning Research Skills Teaching and Assessment for Large Art History Survey Courses

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Redesigned Research Skills Teaching and Assessment for Large Art History Survey Courses

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Abstract—Art librarians who are responsible for information-literacy instruction programs face many of the same challenges librarians from other disciplines face, such as limited staffing to deal with increased requests for course-related library instruction, teaching large groups of students, and the assessment of instruction sessions. As subject specialists, art librarians are well positioned to collaborate with faculty in the design of research-based assignments that connect visual literacy to information literacy. This article explores how the University of North Carolina Chapel Hill’s Sloane Art Library took on these challenges and in the process improved its instructional program, increased assessment of student learning, and collaborated with faculty to transition from optional “library worksheets” to graded library-based research assignments.

Overview
As many colleges and universities have increased their engagement in building undergraduate students’ critical thinking and research skills, librarians have seen a greater demand from faculty to augment courses with information-literacy sessions. When librarians embed information literacy into courses, more value is placed on the assessment of student learning in order to gauge the success of library sessions and improve instruction over time. With assessment, librarians and faculty are able to provide direct feedback to students, giving them concrete ways to reflect on their learning and skills development. Assessment can also give library instructors clues as to what they taught successfully and what was less clear to students. It is an iterative...
process that library instructors and faculty can use together as partners to gauge the results of teaching and continuously improve course content.

Large art history survey courses provide both challenges and opportunities to art librarians. These courses offer the opportunity to reach a greater number of students from across a wide range of disciplines and to assess students’ information-literacy skills. However, engaging large numbers of students can strain small library staffs. Through partnerships with faculty and by putting to work instructional technologies, the staff of the Sloane Art Library at University of North Carolina (UNC) Chapel Hill took on these challenges and proposed to streamline and build up the library’s information-literacy program and related assessment activities. This article describes a three-semester process to design course-embedded information-literacy instruction sessions and assignments, as well as a related assessment plan for large Survey of Western Art courses at UNC Chapel Hill. The activities we describe resulted from the collaboration of the art librarian with art history faculty and graduate student instructors. The sessions bridged visual analysis of artworks with analysis of texts related to the works and featured both summative and formative methods\(^1\) to assess student learning, including graded assignments. The Sloane Art Library’s instruction team developed graded assignments for students and grading rubrics that helped promote consistency across a small team of library instructors. The challenges we faced included large class sizes, teaching students with little-to-no background in art history how to research lesser-known artworks, and short fifty-minute allotments for instruction sessions. Numerous changes were made to our teaching as a result of the assessment program. Future plans for the instructional program and assessment planning will make it easier for course instructors to integrate the instruction and assessment of students’ information-literacy skills in their courses.

LITERATURE REVIEW

The redesign of the instruction and assessment processes was partly informed by previous research on art historical library instruction, visual literacy instruction, and assessment of instruction at the class level. This literature review covers approximately the period 1993 to the present. Within the field of library instruction, special emphasis was given to those articles and studies dealing with either instruction in an art library setting or with formative versus summative assessment techniques.

ART HISTORICAL LIBRARY INSTRUCTION

An overview of how the literature on art historical library instruction has changed—and the ways in which it remains the same—is helpful in providing context for the broader field of library instruction and assessment. Many of the articles describe the differences between art historical research, art library instruction, and their non-visual counterparts. Scott VanJacob points out that, unlike the case in other disciplines, in art historical research the art object typically serves as a primary source,

\(^1\) Formative assessment takes place while teaching so that one can quickly gauge students’ knowledge or skills and make any necessary adjustments in the course of the class session or in subsequent sessions. Summative assessments are administered periodically or at set intervals to measure students’ knowledge or skills at a particular point in time. Summative assessments usually take the form of quizzes or tests.
meaning that students must learn not only how to navigate library resources but also how to formulate research questions about art. VanJacob recommends small group or one-on-one interactions after speaking to the entire class, focusing on the use of library facilities. He also emphasizes the importance of learning how to research less-published art works and of familiarizing students with the interlibrary loan process.2

Craig Likness, writing in the same issue of Art Reference Services Quarterly, explores topics beyond basic library use skills, suggesting that students should be able to consider how a work of art relates to different categories of primary and secondary sources, how to categorize the different kinds of materials they will find, and how to read and mine bibliographies and citations.3

The way students interact with information has changed since 1993, and Barbara Rockenbach and Carole Ann Fabian ably address this shift, along with the ways in which it can influence art library instruction. In a world of pervasive social media, information is increasingly reciprocal, and students now expect a more dynamic and interactive learning process.4 Rockenbach and Fabian see this as a call for instruction librarians to create a more participatory instruction process and include a new range of literacies in their sessions. They list a handful of topics, from critical thinking skills to problem-based inquiry, but emphasize visual literacy most strongly, especially in an art library setting. The authors suggest this as a way for art librarians—and others with expertise in visual materials—to make use of their skills. They also see it as a logical continuation for art librarianship, which has always been linked with the visual. For concrete applications, Rockenbach and Fabian suggest practical exercises in visual literacy that encourage the learner to participate in the process.

The involvement of technology in art library instruction is also important in creating this participatory environment, an element Rockenbach and Fabian do not address. There is a wide range of literature exploring specific kinds of technology used in information-literacy programs. Surprisingly, at least within the discipline of art history, the majority of articles dealing with technology in the instruction process focus on instruction in the art history department itself, not information-literacy instruction by librarians. Tara L. Dist's article “Improving Art History Education: Library and Faculty Partnerships in Instructional Technology Development" is a good example, though it does briefly consider the use of technology as a means of improving the library's image.5 This may be indicative of a gap in the literature, but perhaps researching technology specifically in art historical information-literacy instruction programs is unnecessarily specific.

INSTRUCTIONAL ASSESSMENT IN LIBRARIES

There is a wealth of information on broader library instruction assessment at the college level. Jim Kapoun examines a common theme in the literature and in practice: the shift from “how am I doing?” to “how are you doing?” This shift is increasingly more of an interest in assessing student outcomes than in assessing the style of the instructor. Kapoun interprets this as a shift in focus to what areas or services need to be emphasized, regardless of a personal assessment of the librarian. Nevertheless, the instruction style of each individual librarian or instructor obviously influences the results.

Katherine Schilling and Rachel Applegate continue and reframe the shift to summative outcomes in their survey and comparison of different types of library instruction measures. They describe this shift in terms of a contrast between attitudinal surveys and graded tests, asking what the relationship is between measures of skill and measures of students’ attitudes or behaviors. The results of their study ultimately indicated that students routinely overestimate their own information literacy, that attitudes may not correlate with actual information-literacy skills, and that there is a disconnect between theoretical knowledge and applied skills. Chris Portmann and Adrienne Roush, in their own literature review, also favor summative, outcomes-based assessment, asserting that a focus on student satisfaction “falls short of the summative assessment approach,” and that “the effects of library instruction approach yield more meaningful findings than the student satisfaction approach.” Schilling and Applegate conclude that instruction assessment is useful not only for determining the success of an information-literacy program, but also for giving students a better idea of their own skills. They strongly urge direct testing as an assessment method.

Older sources confirm the apparent shift to direct testing and student outcomes examined by Kapoun, Schilling, and Applegate. Sharon Stewart draws on K. Patricia Cross and Thomas Angelo in her adaptation of classroom assessment to the library setting, defining classroom assessment as “frequent feedback of student learning during the classroom experience.” The Cross/Angelo methods of classroom assessment seem more attitudinal than outcomes-based assessment, including questions such as “what was the most important thing you learned today?” The information gleaned from such surveys can be useful, but it does not directly reflect student learning. Stewart also lays the groundwork for later authorship on the cycles of instruction and instruction assessment, identifying three main phases: planning, implementing, and responding. She calls for a more in-depth and more systematic study of instruction assessment.

11. Ibid.
12. Ibid.
Between the outcomes-focused Kapoun and attitudinal-focused Stewart are Kornelia Tancheva, Camille Andrews, and Gail Steinhart, three Cornell researchers who tested three methods of assessment. Studying attitudinal, outcomes-based, and gap-measure assessment methods, the authors note the strengths and weaknesses of each method. Outcomes-based assessment, for instance, is difficult to achieve with one-shot instruction, while attitudinal assessment “does not provide the measure of learning that outcomes-based assessment covers.” The authors ultimately conclude that the most successful approach would blend all three methods.

Rachel Cooke and Danielle Rosenthal support the conclusion that outcomes-based assessment is often more effective and accurate than attitudinal assessment, repeating the idea that student questionnaires tend to gauge students’ feelings rather than the intended competencies. The authors used outcomes-based assessment to examine their program, assessing instruction across multiple courses with pre- and post-testing. They found that, as students received more library instruction, they included more citations in general, and more of the sources cited were books. They also discovered that as students enter higher course levels, they use more scholarly citations—although it is unclear whether that was a result of instruction or simply of increased experience in academia.

Aniko Halverson addresses instruction and assessment specifically in an art library in “Confronting Information Literacy in an Academic Arts Library,” an article that resulted from her participation in the ACRL Information Literacy Immersion program. In addition to suggesting that librarians need to move beyond the simple mechanics of how to find sources, Halverson recommends creating a “culture of evidence.” This culture of evidence in instruction assessment begins with determining learning outcomes and variables to measure—the latter was addressed with the seemingly common-sense statement “measure what you value.” In Halverson’s instruction assessment worksheet, students were required to list and describe their search strategies, including their search terms. Previously, Halverson had engaged in more casual assessment centered on observing student progress during the session itself; the introduction of a written, graded assignment was intended to solidify previous observations. Despite this emphasis on a culture of evidence, Halverson did not pre- and post-test, which she admits is a flaw in terms of “truly quantifiably” measuring the effectiveness of the session. The assessment worksheet consequently served as an observation study rather than a comparison. Nevertheless, the worksheets and assessment process indicated to Halverson consistent problems or gaps in the instruction program, along with areas that could be improved.

Halverson’s work provides some of the strongest evidence that one-shot instruction sessions can be effectively assessed in terms of student outcomes even without pre- and post-testing.

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15. Ibid.
17. Ibid., 38.
Patricia Maughan shares Halverson’s interest in more clearly defining intended student learning outcomes. Maughan’s article breaks down these learning outcomes into “higher order” skills, such as assessing search results for quality and relevance or evaluating the reliability, validity, authority, and timeliness of retrieved information, and “lower order” skills, such as learning to use different search systems and databases to retrieve information. Despite acknowledging the importance of higher-order skills, Maughan’s study focused primarily on lower-order skills, and concluded, once again, that student perceptions of their own information-literacy skills were often inflated compared to their actual abilities.18

TOOLS FOR INSTRUCTIONAL ASSESSMENT
A portion of the literature discusses the different tools available for facilitating library instruction assessment. Shannon Staley, Nicole Branch, and Tom Hewitt make use of a quantitative approach to examine an automated online assessment tool. Having determined that a uniform approach is crucial to any attempt at improving an instruction program, the team developed and then assessed a program that generates pre- and post-test surveys corresponding with the information covered in a given instructional session. They found that student results improved across the board after library instruction, though they also acknowledged the drawbacks of their chosen format—multiple-choice questions—which can often test for recall rather than real learning. The authors also found that multiple questions are necessary to cover the different aspects of a single information-literacy concept, and therefore suggest studying fewer learning outcomes at a time.19

Crit Stuart and Peggy Maki’s cycles of assessment appear in the literature on student testing in library instruction assessment, specifically in Megan Oakleaf’s research. Oakleaf presents and explains ILIAC, the Information Literacy Instruction Assessment Cycle, which has seven stages: review learning goals, identify (specific, teachable) learning outcomes, create learning activities, enact learning activities, gather data to check learning, interpret data, and enact decisions.20 These enacted decisions, changes to the instruction process, can then be assessed again, and Oakleaf suggests that engaging in two or more rounds of this process allows librarians to apply what they have learned in previous cycles, adjusting goals, outcomes, and activities accordingly.21

Because the grading process creates the data evaluated in these cyclical assessment processes, it is important to study and perfect it as well. Nicole Auer and Ellen Krupar provide less of an examination of the grading process and more of an endorsement of graded assignments in library instruction and assessment. In a field in which outcomes-based assessment does not always include graded assignments, such an endorsement is

still valuable. They argue that assigning graded work to students encourages active learning and engagement, and that this learning is cemented by the assignments.22

Priscilla Coulter, Susan Clarke, and Carol Scamman do attempt to use the grading process to evaluate the efficacy of library instruction. Surprisingly, their results showed no significant difference between the information-literacy skills of students who had received library instruction and those who had not. One-shot instruction, in particular, seemed to be less effective than multiple sessions.23 The authors pinpoint their inability to control for certain variables, such as instruction styles and inconsistency among graders, as the cause of their lackluster results.24 This seems to indicate the value of a well-structured grading process, centered on a rubric, in creating a viable assessment of an instruction program.

Rubrics, the means by which grading is made uniform and implemented to create data during instruction assessment, have appeared several times throughout this literature review in connection with improving grading consistency. Tuukka Ahoniemi and Ville Karavirta tackled the issue of rubrics and consistency by creating and then evaluating a tool designed to aid manual assessment. They identify consistency, objectivity, and the inefficient repetition of certain kinds of feedback as problems with manual assessment and turned to a rubrics-based tool to solve these difficulties. As the authors explain, the point of a rubric is “to divide the grading into small enough parts that each part can be objectively graded following given instructions.”25 Their findings indicated that a rubrics-based tool can enhance consistency and objectivity and speed up the grading process, but also that the rubric must be designed carefully, the graders must be well-trained in its use, and no tool replaces the independent responsibility and skill of the graders.26

The practice of assessing library instruction programs is not new, but the movement toward favoring outcomes-based assessment has grown in the last five to ten years. Whereas post-instruction surveys were previously a popular assessment tool, measuring these outcomes through graded assignments has come to the fore as a primary method of examining student abilities. This is true in large part because such worksheets and tests are much more likely than surveys to provide information on student knowledge rather than student opinion of the instructor. Assessment through assignments is not without flaws, as pre- and post-testing, often seen as necessary for a quantitative analysis, can be difficult to execute. However, as Halverson points out, the results of such efforts can lead to significant insights about areas of potential change.

**UNC CHAPEL HILL CONTEXT**

At the Sloane Art Library, information-literacy sessions are designed, taught, and assessed by the library’s instruction team, which includes the art librarian and two or

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23. Priscilla Coulter, Susan Clarke, and Carol Scamman, “Course Grade as a Measure of the Effectiveness of One-Shot Information Literacy Instruction,” Public Services Quarterly 3, no. 1–2 (2007): 162.
24. Ibid.
26. Ibid., 5.
more School of Information and Library Science (SILS) graduate student assistants. Sloane Art Library staff consists of one full-time art librarian who manages the instruction team and a full-time library assistant who is responsible for the library’s access services and does not provide information-literacy instruction. The library also employs two graduate students on a regular basis for twenty hours a week and, when demand is very high, one or two additional SILS graduate assistants to help teach sessions. A typical instruction load for the art library is between forty and fifty course-related sessions per year, each typically fifty minutes to an hour long.

At UNC Chapel Hill, all students are currently required to complete an English composition and rhetoric course in order to fulfill their Foundations requirements. These courses give students opportunities to develop their writing and oral presentation skills within disciplinary contexts. Writing in the Humanities is an example of a course in which students may engage in writing about the artworks they visit on campus at UNC’s Ackland Art Museum. Nearly all of these English composition and rhetoric courses include a library-provided information-literacy instruction session that is taught by Undergraduate Library librarians and SILS graduate students. In cases where courses include an art research component, course instructors typically request information-literacy sessions at the Sloane Art Library, in addition to the basic introduction students in the course receive at the Undergraduate Library. At the time of our project, many students were able to test out of the English composition and rhetoric course. Additionally, although students may receive basic information-literacy instruction through courses in the Foundations program, it is apparent to both faculty and librarians that these basic introductions are not sufficient to prepare students for researching and writing about works of art. Therefore, while UNC does have a robust information-literacy program that is embedded in English composition and rhetoric courses, the additional reinforcement of information-literacy skills along with an introduction to art-specific information sources, the literature of art history, and visual-literacy concepts is required in order to prepare students to research and write about art.

Similarly, many UNC students fulfill their general education requirements by taking art history survey courses. At the Sloane Art Library, each semester information-literacy sessions are provided for all of these courses, and for many other courses offered by Art Department faculty, as well as for courses offered by faculty in other departments. When we set out to redesign our instruction and create an assessment plan, we decided to focus on art history survey courses where there already existed a natural partnership between the art librarian and the faculty teaching the art history survey courses.

The largest of the art survey courses, History of Western Art, is taught in the fall (part I) and spring (part II) semesters and was the focus of our project to revise, streamline, and improve our information-literacy program. During the course of the project, enrollment in History of Western Art courses was always high but fluctuated, from 230 students in the fall 2011 course, down to 68 students in the spring 2012...

course, and then back up to 178 students in the fall 2012 course. Additionally, the majority of students in these art survey courses are not studio art or art history majors. For instance, over 30 percent of students enrolled in the fall 2011 History of Western Art course were majoring in a social sciences discipline (Figure 1).

Due to the size of the History of Western Art course, as many as thirteen instruction (recitation) sessions, composed of ten to twenty students each, were taught each semester. Given the size of the course, and the fact that the course was an undergraduate course, the instruction team recognized it as an ideal course in which to implement and scale new approaches to instruction and assessment.

**THE “RESEARCH PLAN” ASSIGNMENT: A REVIEW OF LEARNING GOALS AND IDENTIFYING LEARNING OUTCOMES**

UNC art history faculty members have, over the years, rotated the responsibility of teaching the History of Western Art I fall semester course. A new course instructor, Dr. Eduardo Douglas, was appointed to teach the course in the fall 2010 semester. The art librarian and Dr. Douglas previously had discussions regarding students’ research and information-literacy skills and had collaborated on related sessions. Dr. Douglas proposed his idea to change the original course assignment to one that would more directly engage students in articulating a research plan. The original assignment, a ten-page paper covering a topic that the student could select from a list of topics compiled by the course instructor (e.g., Cats in Egyptian Art, Early Christian Catacombs, etc.), was replaced by a “research plan” assignment that put an emphasis on the evaluation of students’ research skills in the context of a writing assignment about art. This new version of the assignment was written in consultation with the art librarian and integrated some elements of the worksheets that the art librarian would typically use in her information-literacy sessions for the course. The new assignment
was readily adopted by the instructor for the spring semester course, J.J. Bauer, the Art Department’s visual resources manager who had a history of working collaboratively with the art librarian on instruction and visual resources services. The research plan course assignment changed very little over the course of the three semesters discussed here, even though the course instructor once again changed. Additionally, there was a desire on the part of Sloane Art Library instruction team members to integrate more interactive and hands-on learning during library sessions. The team members wanted to incorporate assessment of students’ skills so that they could better understand how effective the content of the sessions was in helping students learn how to research works of art.

Prior to this project, Sloane Art Library sessions for survey courses were classically structured, with students receiving instruction in how to search the library’s catalog, find journal articles, and evaluate print, journal, and web sources. More time in the demonstration portion of the session was devoted to search mechanics, with little time left to focus on research topic and question development and the evaluation of resources. These activities were relegated to a hands-on exercise, in the form of a printed worksheet, which students had time only to start and would rarely finish before the end of class. This method resulted in a hectic fifty-minute session that left our library instructors wondering how effective the session was in helping students prepare for their final assignment. The introduction of the new research plan assignment, along with a new course instructor, gave us an opening to redesign our approach.

Since the new course assignment focused more intensely on the research process, in addition to visual analysis and writing, it was tailored to the types of hands-on information-literacy instruction activities happening in the art library. In the schedule for the History of Western Art courses, students attended a visual analysis training session at the Ackland Art Museum, and a week later attended a research skills instruction session at the Sloane Art Library. These two sessions were designed to prepare students to complete the research plan assignment, which consisted of the following:

- **An annotated list of at least five research questions.** The annotations needed to explain clearly and in detail why each question was relevant to the objects students chose and how they would find the answers to each question “using the UNC Libraries’ catalogues and on-line databases.” To formulate their research questions, students were asked to consider what types of information they needed to know about the object in order to understand and explain its functions and “messages.”

- **An annotated bibliography of published scholarly literature and web-based resources that would allow the student to answer the questions posed.** Students were told that the bibliography compiled by the student must include at least five books, five journal articles, and two or three web-based resources. Their annotations for each source in the bibliography would need to specify how they found each resource and how they evaluated it for its relevance to their research and the quality and reliability of the information that it provided.
The Sloane Art Library’s instruction team analyzed the research plan assignment and drew up a list of skills required for the successful completion of the final assignment. We then created a skills rubric, a session content outline, and a quiz. In redesigning the session content, we considered ACRL’s information-literacy competency standards.28 We also explored how we might bridge the visual analysis skills students gained during the Ackland Art Museum session with the information-literacy skills that we planned to cover in the library session.

The resulting Sloane Art Library session began with a short visual analysis group exercise based on the Visual Thinking Strategies model that was similar to the activities in which students participated the week before at the Ackland Art Museum.29 An image of a work of art from the time period covered in the course was projected on a screen for students to examine. They were then asked, “What do you see? What questions do you have about this object by simply looking?” Parallels were then drawn between visually “reading” a work of art and developing research questions about it, and reading text about the object, which also prompted new questions.

A concept map was introduced to help students think expansively about the object they were examining, to engage them in the development of their research topic, and to help them move from obvious questions about the artwork (e.g., Who created this artwork? How was it made?) to questions that incorporate more nuanced and multidisciplinary contexts within which a student can examine an artwork, such as broader cultural, historical, and other influences (Figure 2).30

At this stage, and after students were asked to analyze text excerpted from the Oxford Art Online database (Figure 3), they shared with each other sample keywords, phrases, and research questions about the artwork on the screen using a free online “sticky notes” tool called Lino31 and employing basic pen and highlighter tools available in PowerPoint. As a class, students were then able to literally see, on the screen in front of them, how their questions evolved as they moved from merely looking at an object (visual analysis) to reading about an object and its broader context (textual analysis) (Figure 4). This process also allowed instructors to incorporate formative assessment into the session, which illuminated students’ information-literacy skill levels, in addition to a summative approach.

**TRANSITIONING FROM LIBRARY WORKSHEET TO REQUIRED AND GRADED ASSIGNMENT**

During the course of the three semesters devoted to this project, the Sloane Art Library’s instruction team collaborated with four different faculty members, as well as numerous graduate art history teaching assistants who were responsible for teaching recitation sessions for the course. These relationships and a collaborative spirit paved
the way for the optional library worksheet to evolve into a required and graded assignment.

Previously, the second half of one-shot art library sessions had been devoted to the completion of a library worksheet that required students to develop a research topic, locate a book, and then locate an article on their research topic. Students never had enough time to complete the worksheet in class. During the first semester of our project, all UNC courses were in the process of transitioning from the Blackboard course management system to Sakai. This gave the art librarian the opportunity to move the traditional paper-based worksheet used in library sessions into Sakai’s online environment and utilize its “tests and quizzes” tools. Initially, the Sakai “quiz” was created using a separate Art Library Sakai site, instead of the History of Western Art course site. Later, after faculty experienced firsthand the benefits of the Sakai-based quiz, it was moved into the Sakai site for the course. With the quiz embedded into the course, more time could be devoted during art library sessions to interactive exercises and concept-based instruction, and students were expected to complete the quiz outside of both session and course time. After students completed the quiz, members of the instruction team evaluated students’ worksheets using the rubric we created as a guide (Figure 5).

At the beginning of the project, we used the rubric to give students written feedback and to communicate their performance levels as “optimal,” “good,” or “needs improvement.” This feedback was also shared with the teaching assistants responsible for the recitation sections for the course, but no grades were assigned to these

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**Figure 2.** A concept map of research question and topic development used in Sloane Art Library information literacy sessions. Please see the online edition of *Art Documentation* for a color version of this image.
worksheets. While the Sakai system would allow us to assign points, we initially chose to provide only written feedback, in part because the assignment was not yet integrated into the History of Western Art course site, and we did not want to mislead students into thinking that the assignment counted towards their course grade.

We discovered that, although approximately 80 percent of students in the course submitted these online quizzes, a large number of students submitted an incomplete quiz. It became apparent that in order for students to complete the library quiz it would either need to be scaled back or more fully integrated into the course. In consultation with course instructors, the team decided to do the latter. The quiz was moved to the course site, members of the art library instruction team were granted guest access, and students in the course were given a week to complete the online quiz outside of class, which was then graded by library instructors. This shift to Sakai had the effect of legitimizing what was originally an optional worksheet and turning it into a course assignment that ultimately counted towards students’ overall grades in the course. Sakai tools made the process of grading the quiz and applying the resulting grade much simpler. Grading the assignment in Sakai, with each question counting for a certain number of points, allowed us the benefit of seeing “at a glance” using Sakai’s statistical tools, how students in the course performed on the assignment overall (Figure 6).

The first iteration of the Sakai quiz that we implemented during the fall 2011 semester included five questions that asked students to describe the object they chose from the Ackland Art Museum’s collection, including title, creator, date created,
materials, and methods. Another question asked what five key terms or phrases they planned to use in their searches for books and articles. Students were also asked to locate three different sources related to their topic (a book, a journal article, and a website). Students provided citations for these sources, but their citations were not evaluated for accuracy. In accordance with the final research plan course assignment, students were also asked to describe their strategy for locating each source. They then evaluated each source on their own, based on a “Resource Evaluation Criteria & Checklist” we provided via a link within the quiz, and they then explained why they would or would not include the source in their final assignment. Finally, students were asked to develop two new research questions about their object.

In the second and third semesters, we continued to ask students to locate sources related to their research topic, but several multiple-choice questions were added based on evaluations of students’ performance during the first semester. These multiple-choice questions helped the team evaluate students’ ability to distinguish between the different types of sources that they would need to locate for their final project. They also automated some of our work and reduced the time to grade quizzes. Multiple-choice questions served to test students’ understanding of how to retrieve print articles and how to use interlibrary loan and campus delivery services. In the second semester, students were asked to evaluate a book and journal article they located, but they did not have to evaluate a website (Figure 7). Few changes to the assignment were made in the third semester. The only additions included a link to the university library’s Citing Information Tutorial and the reintroduction of a website citation and evaluation. All of the changes described here were informed by the results of the

Figure 4. An example of how the free online tool Lino has been used to support in-class exercises that help students develop their skills in developing good research questions. Please see the online edition of Art Documentation for a color version of this image.
Feedback Form for your “Research Worksheet”

This grid outlines some of the research skills that the Library Research Assignment will ultimately help you develop. We’ve ranked each skill with indications of progress that are “optimal,” “good,” and “needs improvement.” This feedback form is intended only as a guide to help you develop your research skills, and is not included in your grade for the class.

<table>
<thead>
<tr>
<th>Research Skill</th>
<th>Optimal</th>
<th>Good</th>
<th>Needs Improvement</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develops good keywords and phrases</td>
<td>Development of multiple and relevant synonyms for multiple aspects of a topic</td>
<td>Development of multiple and relevant synonyms for concept</td>
<td>No to little development of synonyms and/or</td>
<td>Good job—you are starting to identify terms that will help extend your research (e.g., Robert Henri).</td>
</tr>
<tr>
<td>Develops two relevant research questions</td>
<td>Effectively triangulates between multiple concepts within a topic</td>
<td>Partially synthesizes some concepts within a topic</td>
<td>Identifies the five W’s (who, what, were, when, why)</td>
<td>As you learn more about your topic, you may be able to narrow your focus more.</td>
</tr>
<tr>
<td>Identifies a related source (an article, book, or website) and evaluates the source for quality and reliability</td>
<td>Identifies a related source and addresses each point listed in the evaluation checklist. Offers numerous reasons why the source is scholarly, and of sufficient depth to be useful.</td>
<td>Identifies a related source and addresses a few points listed in the evaluation checklist. Offers some reasons why the source is scholarly, and of sufficient depth to be useful.</td>
<td>Identifies one or no related source. Identifies few to no reasons why the source is scholarly, and of sufficient depth to be useful.</td>
<td>This looks like a helpful resource—good assessment of the author’s credentials. Be sure to check the bibliography in the book for other sources that might help you!</td>
</tr>
</tbody>
</table>

General Comments & Hints

- We noticed that some students in the class evaluated Oxford Art Online as a resource. This may have been due to time constraints, but we want to clarify that any encyclopedia you use (including Oxford Art Online) should be a tool to help you find other resources. 
- Because it is a reference source, Oxford Art Online’s primary purpose is to refer you elsewhere. Per instructions from your course instructor, reference sources should not be included as sources in your final annotated bibliography.
- That said, if you haven’t done so already, you might consider using Oxford Art Online to help you locate more background information and develop more keywords to use in searching for articles and books.

Figure 5. Sloane Art Library rubric for grading. Please see the online edition of Art Documentation for a color version of this image.

Formative assessments we made during our art library sessions, in grading quizzes, and in consultation with course faculty and teaching assistants.

Student Performance: Learning from the Data

The process of evaluating students’ performance, from simply providing written feedback to assigning grades, allowed us to see what students struggled with and the related improvements that we needed to make to art library information literacy sessions. During the first semester of the project, the rubric we used to rate student performance as “optimal,” “good,” or “needs improvement” allowed us to see that over half of the students who submitted their assignments performed at the level of “good” in developing keywords and phrases related to their research topics. In the same semester, approximately 30 percent performed at a “needs improvement” level. Our team identified this skill set as one to develop further in our instruction sessions. In the same semester, approximately 70 percent of students in the class rated “good” in developing relevant research questions; however, the team found it difficult to grade “relevance” when members of the team were less knowledgeable about the research topics students chose. Students’ performance regarding their ability to identify related sources and evaluate those sources for quality and reliability was split fairly evenly across the group. We also found that many students were including Internet sources that lacked credentials, such as travel and commercial websites. Students also had a tendency to include reference sources (e.g., Oxford Art Online) as sources that they would use in their final assignment and which faculty did not want them to use beyond the background research phase. Additionally, there was confusion among
students in the course about differences between publication types they found in an online environment—differentiating between an online reference source, an “article” on an art museum website, an online journal article, and a chapter disaggregated from its book. We recognized these issues and, before the new semester, redesigned portions of our session and quiz content.

During the second semester of the project, student performance overall was high, with 69 percent of students receiving a score of thirteen points or higher out of a possible fifteen points. The modified quiz introduced multiple-choice questions that greatly reduced the time to grade. Additional written feedback was e-mailed or delivered via Sakai to both students and teaching assistants for the course.

In the previous two semesters, approximately 85 percent of students submitted their quizzes. This jumped to 99 percent in semester three of the project when students were more incentivized by having the quiz count as part of their course grade. Overall, student performance was consistent with the previous semester, with 115 students in the course receiving a final high score on the quiz, or about 64 percent of the class. Students consistently did well with the multiple-choice questions on the quiz, but around 20 percent of students struggled with one question asking them to identify a book chapter from a citation. As a result, we created an additional PowerPoint slide to share with students during the library session that showed examples of

Figure 6. An example of the statistical tools available in Sakai that allow instructors to see at a glance students’ performance question-by-question.
citations for different types of publications. With the open-answer quiz questions, we noticed that students struggled to articulate specific reasons why the sources they chose were of good quality, credible, and relevant to their research topics. We resolved to focus much more heavily on resource evaluation during future art library sessions and in related assignments.

Through the process of formative assessment that took place during the library sessions, we noticed that students were not using reference sources or books to their full potential. Instead, desiring efficiency and convenience, most students jumped into their search by looking for journal articles online and ultimately struggled with content that was too granular in focus or with content that was too advanced for their level of knowledge on the topic.

Throughout this process, we also learned firsthand just how labor intensive it can be to grade a series of open-answer questions. Although we used a rubric for grading, it was a challenge to maintain consistency in grading these types of questions in a team-grading environment. We revised our quiz to include multiple-choice questions that could be automatically graded by the Sakai system, and we retained only those open-answer questions that were most valuable to teaching and evaluating student skills in research question development and resource evaluation.

Figure 7. Student views of the Sakai quiz. Please see the online edition of *Art Documentation* for a color version of this image.
CONCLUSIONS
Overall, this process of redesigning our information-literacy instruction sessions taught us the value of embedding assignments more fully into courses, and particularly the benefits of using a course-management system to teach a greater number of students information-literacy skills, to show them how to successfully navigate their libraries, and to gauge their skills. Using course-management systems to deliver information-literacy quizzes, tutorials, and other materials related to library research affords librarians opportunities to more directly engage with students and increase partnerships with faculty. What was once a rarely completed library worksheet turned into a course-embedded and graded assignment, with students receiving direct and constructive feedback on their performance.

Looking to the future, we plan to further develop our Sakai-based information-literacy quizzes in partnership with art history faculty and teaching assistants, this time making use of the “question pools” tools in Sakai. These tools will let us create collections or “pools” of information-literacy assignment questions, tutorials, and supporting documentation, which can then be shared with any faculty members who use the Sakai system. Our faculty will then be able to handpick from our pools the content they want in order to build online quizzes and tests for their courses. In this way, we will continue our partnership with course instructors to help them build into their classes the information-literacy skills they want students to develop and in a way that is tailored to their courses. We hope that this will result in a greater number of faculty who integrate information-literacy-based research assignments into their courses, allowing more time during in-person library sessions for teaching and more time for students to work on building a cohesive set of information-literacy skills for art historical research. Using these online tools, we foresee an increase of information-literacy assessment occurring in undergraduate art history courses at UNC Chapel Hill.

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