



# Incorporating data literacy into undergraduate information literacy programs in the social sciences

Information  
literacy  
programs

## A pilot project

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### Abstract

**Purpose** – The purpose of this paper is to describe and analyze the confluence of data literacy with information literacy in an experimental one-unit course taught in the UCLA Department of Sociology, and present the literature on, rationale for, and future of integrating these interrelated literacies into social science courses.

**Design/methodology/approach** – The course was co-taught twice by a librarian and a data archivist using a syllabus and assignments that reflect sociological research problems and tools and information literacy competencies in the social sciences.

**Findings** – The need for information and data skills in sociology is well-established, and their integration into a sociology course (rather than in a stand-alone information literacy course) would produce more opportunities for students to apply what they learn and for the instructors to assess learning in the context of doing sociology coursework.

**Research limitations/implications** – The class sizes were too small for full-scale assessment and pre-tests/post-tests were not given. Assessment of student learning was based on work produced in and outside class and on course evaluations.

**Practical implications** – It is suggested that librarians and data archivists work with faculty to innovate curricular approaches based on recommendations and outcomes in key documents on learning sociology from professional library and sociology organizations. Attaching the lab to an existing course and promoting the data literacy modules for faculty to adopt in other courses are also suggested.

**Originality/value** – This paper invites social science librarians to examine the value to students and faculty of collaboration with professional data services staff to teach and merge information and data literacy within the social sciences curricula.

**Keywords** Information literacy, Sociology, Undergraduates

**Paper type** Case study

### Introduction

The importance of statistical information and analysis in sociological research has consequences for students who lack the skills to understand data or its graphical representations. Even students who can conduct a survey and find scholarly articles on a sociological topic might be at a loss to evaluate or use the information gathered because they lack an understanding of tables, graphs, data, and essential statistical concepts and terminology. Data literacy – also known in the literature as statistical literacy, quantitative literacy, and numeracy – is a critical component of the information competence students need in sociology and other social sciences. We



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considered this in designing a pilot information and statistical literacy course for upper division social science undergraduates. The course required students to demonstrate that they could find, evaluate, and use information effectively and ethically for sociological inquiries. The course also built upon more basic information literacy instruction by delving into evaluation and research strategies, sociological resources, and concepts in using statistical information. This article describes the outreach and planning involved in developing this full term course with a particular focus on the incorporation of data literacy as a component of information literacy in sociology. We describe and analyze the data literacy modules and offer future strategies for the integration of numerical information resources and concepts into information literacy skill development in the social sciences.

### **Review of the literature**

A survey of recent literature on data literacy and the need for students to develop it reveals that both sociologists and data archivists have grappled with this issue. As Kenneth Prewitt wrote in his introduction to the Association of Public Data Users publication on statistical literacy, “statistical literacy can contribute to more responsible data presentation and greater understanding of data, [and] inform public policy debates about statistical programs” (Prewitt, 1999, p. 1). Treadwell (1999, p. 5) explains that when we refer to statistical literacy, we are not talking about the ability to do the arithmetic – “statistical literacy is broader than specific knowledge of basic statistical methodologies and ability to perform certain mathematical functions”. Schield (1999, p. 21) refers to statistical literacy as “a most important skill” and a “liberal art – not a mathematical science”, encompassing “the ability to read and interpret data . . . to think critically about statistics . . . and to use statistics as evidence” (Schield, 1999, p. 15). Interestingly, Kain (1999, p. 6) reports “only half of the institutions surveyed [in his study] require statistics for a sociology major”.

Podehl (2003, p. 1) asserts “in our knowledge-based society and economy, the average person is confronted with figures on a daily basis and is asked to form judgments based on the story they tell”. It is not clear whether the average reader actually understands the statistical material presented in the daily newspaper on yet another medical study, public opinion poll, or even the NBA playoffs. As Schield (1999, p. 16) points out, “all too often, statistical illiteracy involves an inability to comprehend what is being read”. Van den Broecke (1999) suggests that the reason for the general public’s inherent aversion to statistical information might be the way math is taught. He says that cynicism about statistics comes from the belief that the display of data is designed to justify a point of view and therefore can be deceptive. Van den Broecke explains that graphic representations of research do not emphasize how or whether the data indicate a cause and effect, or the probability of a specific cause or effect. In institutions of higher education, students are encouraged to be skeptical about the content of published statistics; however they lack the analytical skills this requires.

Wagenaar (2004) surveyed sociologists in an attempt to define core concepts, topics, and skills in sociology. He found that “how to use and assess research” was one of the highest-rated items, that is, respondents thought it was one of the most important elements for the sociology curriculum (Wagenaar, 2004, p. 9). Sociologists in higher education have explored data literacy at length and it figures heavily in the American

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Sociological Association (ASA) report from the Task Force on Sociology and General Education (ASA, 2007). One of the key learning outcomes for a sociology major in the twenty-first century is focused on quantitative literacy:

Departments [should] require courses on research methods and statistics . . . The sociology major [curriculum] ought to be able to document students' mastery in managing evidence, both qualitative and quantitative, such that the student can identify basic methodological approaches, compare and contrast . . . [Further], given improvements in computer technology and access to reasonably priced computers and datasets, sociology faculty can now involve novice students in the excitement of testing ideas with empirical evidence (ASA, 2007, p. 19).

Some faculty researchers have developed classroom tools and assessment techniques for developing students' quantitative abilities. Traditionally, these skills are taught in research methods classes, but some faculty propose that tools for thinking critically about data in sociology may be more easily absorbed by students in seminars and theory courses. Bridges *et al.* (1998) discuss a strategy for incorporating materials in courses other than methods classes. Atkinson *et al.* (2006) analyze a research module that teaches data literacy in a large introductory sociology course, and they "suggest that having students conduct quantitative research that challenges their biases is perhaps the biggest advantage that sociology offers to the acquisition of quantitative literacy" (Atkinson *et al.*, 2006, p. 63). Scheitle (2006) presents ideas and resources for students to analyze data that are readily accessible in reliable data sources on the Web rather than using the less handy statistical software packages and datasets that are stored remotely. He views "Web-based data analysis . . . [as] a new option for introducing students in undergraduate sociology courses to quantitative data, benefiting instructors, students, and institutions by making statistics in the classroom more accessible and interesting" (Scheitle, 2006, p. 85). In order to assist and encourage UCLA faculty to incorporate data into classroom teaching, the UCLA Department of Sociology's Data in the Classroom project (UCLA, 2007a) Web site provides various statistical resources in one place for easy access.

Just as writing skills are more easily developed as part of various learning and curricular experiences, the variety of data literacy skills can be obtained more comprehensively when incorporated across the curriculum, in core theory or topical seminars as well as methods courses. Indeed, Browne and Litwin, writing as early as 1987, concluded that "when teaching critical thinking is just an ancillary component of the curriculum, it is very doubtful that students will acquire the taste for lifelong refinement or even use of the process" (Browne and Litwin, 1987, p. 390). The same can be said of data literacy, a significant component of critical thinking in the social sciences.

Literature on the role of librarians with respect to data literacy addresses a few areas. Gray (2004) recognizes that librarians assist users of statistical information found in government-produced sources, including census, surveys, technical reports, and published tables (such as in the *Statistical Abstract of the United States*). These materials are accessible in both printed and online format and increasingly, librarians can provide users with customized tables on the fly. Gray states that "the goal of the librarian is to direct users of electronic data and statistical resources toward useful information that reflects the nature of the real world and to help users avoid the possible misuse of data and statistics" (Gray, 2004, p. 24). Read (2007, p. 72) asserts

“helping new data users sort out terminology and concepts . . . and become comfortable dealing with quantitative research” is a clear benefit of library data services for both librarian and user. Schield (2004, p. 9) insists that librarians have a responsibility to promote statistical literacy and “should consider teaching statistical literacy as a component of information literacy”).

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### **Social science librarians, data services, and statistical literacy**

How can social science librarians help to advance data literacy? A committee of the Association for College and Research Libraries (ACRL) Anthropology and Sociology Section (ANSS) defined information literacy for these two disciplines in a set of “standards” that specify learning outcomes for students (ACRL, 2007). Statistical literacy is present throughout this document, including the sections on selecting investigative methods (sect. 1.2.a), recognizing the value of primary information (sect. 1.3.c), searching sources appropriate to the research inquiry (sect. 2.2.c), evaluating information (sect. 3.2.e), presenting information (sect. 4.1.a) and communicating it ethically (sect. 4.2.d). Librarians and faculty can select specific learning outcomes for a course or assignment; whole departments can use the outcomes throughout the curriculum. Skills to, for example, understand social survey data tables or to find and interpret demographic information on a locality or ethnic group can be crucial to the research for a term paper or to the comprehension of a scholarly article. The integration of such skills into information literacy for sociology and anthropology makes sense if the goal is what Grauerholz and Bouma-Holtrop (2003) call “critical sociological thinking”, that is, “the ability to evaluate, reason, and question ideas and information while demonstrating awareness of broader social and cultural contexts” (Grauerholz and Bouma-Holtrop, 2003, pp. 491, 493).

Data archivists and librarians can play an important role in working with both faculty and students to promote statistical literacy. It is not necessary to be a statistician to incorporate statistical thinking into an information literacy program. The process can be managed incrementally using existing tools and materials. A successful approach is for librarians, data archivists, and statistical and computing or technology staff to work collaboratively. This can be accomplished in more than one setting – through individual consultation, in basic class orientations, and at the reference desk. Data and statistical literacy concepts can be incorporated into most information literacy activities in the social sciences. Using a hands-on approach, an entire class can carry out simple analyses of resources available on the web during class time or as part of a take-home assignment. Many statistical instructional materials are available on the internet (see “Additional Information & Teaching Resources” in Appendix 2).

### **Background on the UCLA Sociology Information Literacy Project**

A key goal of the UCLA Library’s information literacy initiative in 2003 was to collaborate with an academic department in order to make a difference in the information literacy of the majors in that department. The project provided opportunities for experimentation and assessment, and it offered the potential to create a prototype that librarians could adapt to other departments. There were several reasons why the Department of Sociology, with its high number of majors, was a good

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candidate for this project. Some academic departments at UCLA had been under pressure to raise standards and increase credits for their majors, and the Department of Sociology had recently reworked some of their curriculum. As already noted, sociology is a field in which library and data resources are often needed for research that “yield[s] powerful insights into the social processes shaping lives, problems and possibilities in contemporary society” (UCLA, 2007b). The department’s web site states that it is “committed to methodological diversity” and its faculty “conduct[s] sociological research in a myriad of ways whether through direct observation, archival work, recording of naturally occurring data, large-scale sample surveys, experiments, or secondary data analysis” (UCLA, 2007c). The Library’s instruction statistics showed that relatively few instructional sessions had been given to sociology courses in recent years, and none of these gave more than a cursory nod to statistical resources. After contacting the chair of the department, a group of four librarians and six interested sociology faculty, including the chair, met in the spring to investigate a collaborative information literacy project to begin in fall.

The librarians provided the faculty with essential documents on information literacy, including a one-page list of “core competencies” (UCLA (2005) is the latest revision) that describe the attributes of an information literate UCLA student. Although we thought we were going to have to convince faculty of the value of information literacy, they were immediately persuaded, quickly grasped the issues, and wanted to know how the goals could be achieved. By the end of the first meeting, we had worked out which courses in the curriculum were the most likely candidates for instruction at the basic level and at the more advanced level. For lower division students, we planned to use UCLA’s online tutorials to teach introductory content as well as in-person sessions for more active learning. For the upper division students, we discussed the idea of regularizing instruction to the small upper division seminars whose students usually have to write research papers. We also considered the possibility of attaching a one-unit information literacy lab to the four courses in one of the areas of concentration, from which every major has to take at least one course. This idea was discussed with a smaller group of faculty but set aside in the early stage of the project, and is described in the section “Suggestions for the future – separate vs attached course.”

Beginning in fall 2003, the undergraduate College Library took primary responsibility for introductory instruction to the many sections of the large lower division Sociology 1 (Introductory Sociology) and Sociology 20 (Research Methods) courses, and the Research Library took responsibility for discipline-oriented research skills instruction to upper division seminars and graduate courses. We discovered that only 13 percent of the students in Sociology 1 were sociology majors. This meant that although the College Library would continue instruction to this course in support of their goals with undergraduates, we would not consider it part of the Library-Sociology project, which was focused on sociology majors. The project’s lower division effort is through Sociology 20, in which primarily majors are enrolled. Students who provided positive responses to the assessment instrument believed that the program should be widely implemented to all students, and they believed that their ability to do sociological research was much improved. A show of hands in a recent library session for an upper division Sociology seminar indicated that all 15 students had received

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instruction in lower division Sociology classes upon which to build the more advanced instruction; this would never have been the case before we began the project and few upper division students would have had such instruction.

### **Sociology 105 (Sociology Information Literacy Lab), a one-unit IL course**

#### *Background*

In developing the pilot course, we shared the views of Schield (2004) and others and developed goals to promote statistical literacy. These goals align with the ASA Task Force objectives for developing sociology majors as “empowered learners [who can] understand and employ both quantitative and qualitative analysis to describe and solve problems [and] interpret, evaluate, and use information discerningly from a variety of sources” (ASA, 2007, p. 6). The Sociology 105 course was an experimental effort to provide information literacy and statistical literacy instruction to upper division sociology students. The development of this one-unit “lab” coincided with an effort in the sociology department to expand the number of courses incorporating hands-on data analysis via the Data in the Classroom project. The course was team taught by a librarian from the UCLA Research Library and a Data Archivist from the UCLA Institute for Social Science Research. As stated in the course syllabus (see Appendix 1), the intent was to build on the information literacy skills students gained in lower division courses such as Sociology 1 or 20. In the upper division courses and seminars, faculty members assign readings that are more complex and expect students to be able to write papers critically evaluating and interpreting those readings. The syllabus states that class sessions and assignments would provide students with skills to “critique and select relevant research tools, identify appropriate source materials for sociological research, and become more confident researchers.” Students were encouraged to use the Sociology 105 information and data literacy concepts and assignments to conduct the research required in their other upper division social science courses. The data literacy modules were devoted to engaging students in activities to help them effectively use statistical resources in course assignments and papers and critically evaluate graphical representations of data.

While the main intent of the data literacy modules was to build students’ skills in four basic areas (see “learning outcomes” below), we also wished to ensure that the modules addressed “critical thinking and evaluation of material,” which was the second-most mentioned theme in the faculty focus groups conducted at UCLA in 2003 (Kaplowitz, 2005, App. B). These faculty indicated that they had stopped assigning papers that require students to find information themselves; they were opting instead to assign projects that require students to “analyze [only faculty-] designated material or data sets, either in print or online, and draw conclusions from them” (Kaplowitz, 2005, p. 4). At our initial meeting with the sociology faculty, one stated that she wanted students in her introductory research methods course to be “critical consumers of analytic data.” We did not propose to teach statistics; rather, we endeavored to develop students’ skills in searching for, retrieving, customizing and critically evaluating statistical resources.

The learning outcomes of the data literacy module were for students to:

- develop the ability to read and critically evaluate simple 2 × 2- or 3-way tables;
- produce accurate bibliographic citations for data tables;

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- use American Factfinder to create a table, which they could describe and cite correctly; and
  - read an article containing a graphical representation of data and discuss the table in relation to the article content.

These outcomes derived from faculty comments about data-related skills that sociology students need both coming into the sociology major and for successful completion of upper division courses in the major.

### *Data literacy session 1*

In the first session, students were asked to reflect on the uses of statistical information in daily life and were prompted to suggest and discuss their own examples, such as interest rates on student loans and credit cards, sports, sale items at the grocery store, SAT, and GRE scores. We wanted to demonstrate that making good decisions about world issues requires an ability to understand rates, proportions and totals, that is, the frequency or magnitude of something relative to something else; the size or amount of something in relation to another; and simply how many or how much. We saw this as a first step towards development of an understanding of correlations among variables and probability. Students were asked to describe ways we encounter statistical information – numbers, charts, graphs, tables – in published sources, in materials sent from commercial institutions, in advertising, etc. Discussion in this vein was used to engage the students and to focus the content of the session on the story told by the numbers in a table and whether or not we can make any conclusions about causality or predictions for the future.

The rest of the first session was spent studying handpicked examples of data to encourage discussion of the issues that arise when evaluating statistical information. Students were asked to examine tables that were from government sources or were provided in Schield (2001), as well as tables created on the fly using the US Census Bureau's American Factfinder database. As Schield (2004, p. 7) states, "a key element of statistical literacy is ... [to understand] ... how the statistics are defined, selected and presented". Additional class activities focused on reading tables and were based on an earlier version of Desai's (2006) principles and rules for reading tables. The purpose for this set of exercises was to train students how to decide whether to use a graphical display of data in their research papers. Students were also provided with instruction on how to write proper bibliographic citations for tables found or produced online.

The homework assignment for this session reinforced the skills discussed in class. Students created a table on a topic of their own choosing, using the US Census Bureau's American Factfinder database, and they provided a complete bibliographic citation for the table and answered some questions about the arrangement and content of individual cells. We encouraged the students to apply this assignment to a paper or similar coursework required in any other course they were currently taking.

### *Data literacy session 2*

The second session was largely focused on evaluating published statistics in popular and scholarly sources. We reviewed the concepts covered in the first session and

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applied those concepts to increasingly complex graphical representations of statistical information selected from Schield (2001). In order to help the students differentiate between popular and scholarly material, discussion also focused on the components of scholarly articles containing an analysis of data vs. the kind of details provided by the media about data-related studies. The homework assignment asked students to use one of the Library's databases to retrieve an electronic version of a scholarly article containing graphical representations of data analysis. This approach provided students an opportunity to practice skills acquired earlier. Students evaluated the tables in the article and answered questions about the table format and content, provided a bibliographic citation, and discussed the author's commentary about the table.

*Assessment of the Sociology 105 data literacy modules*

The Sociology 105 course was given twice in the 2004/2005 academic year, in terms of ten weeks each. The following comments about assessment pertain to both sessions. To assess student learning, we relied on student responses during active learning exercises and evaluation of the quality of work on the homework assignments. We did not give a pre- and post-test to assess students' skills before and after the course. The small class size (five students in the first term and seven in the second) would have made it difficult to draw conclusions from a standardized assessment, and we did not administer one. At the end of both terms, most students (three in the first term and five in the second) completed course evaluation forms.

Most student feedback about the course and the data literacy modules was positive. Students who responded to the course evaluation forms reported they had gained skills and would be better able to produce solid research papers. The students found the homework assignments were very helpful, the class sessions useful, and that they learned more about the concepts presented in class by doing the assignments; in fact, they would have liked more time to conduct searches of article databases, use the table making features of American Factfinder, and practice other techniques they learned in class.

Homework assignments were complete, well written, and accurate. In working with tables in American Factfinder, the students did well as long as they were given very detailed, step-by-step instructions. When given the chance to think critically and evaluate tables, the students seemed to be engaged in the process. For example, in the homework for session 2 of the Data Literacy module, students were given an opportunity to reflect on the quality of the graphical material they found in their chosen scholarly article. Their comments were insightful:

I was confused with . . . particular item responses. Why were there only questions 1-4? And was 28 the highest score?

The title of the table should include the zip code to make the table easier to interpret. If two tables were listed side-by-side with simply the title above it, it would be nearly impossible to guess which table was for which city.

I realize that a table coming from a scholarly journal is not expected to be read by the layman but I had a lot of trouble figuring out what was going on in this table. [It] would be nice if they gave a sort of introduction as to what this table is about.

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None of the students applied the assignments to a particular course paper despite encouragement to do so, and we were therefore unable to assess whether the course or the data literacy modules led students to produce high quality work for upper division courses.

#### *Analysis of the data literacy modules*

Students who took the course included transfer students who were in their first term at UCLA and students who had already been on campus for two years. Although incoming transfer students generally have good preparation for upper division major coursework, they have not necessarily had any information literacy instruction. We could not assume that everyone came to the class with equal knowledge: for some the information was new, for others it was a bit of a review. We could not ascertain how much prior coursework students had completed in statistics and quantitative methods, however we knew from experience that some students would have trouble choosing and finding articles and evaluating the statistical material contained therein. We were also aware that some UCLA faculty perceived students to be not as well-prepared to use quantitative/statistical materials as they should be.

Students wanted many opportunities to practice reading and evaluating tables. They enjoyed the challenge of deciding whether or not a particular set of tabulations actually showed cause and effect and suggesting what other details would be needed to make predictions or estimates. Students also enjoyed the opportunity to create custom tables in areas of interest and to understand the content and implications of graphical representations of data. Although the data literacy module did not attempt to teach statistical concepts, with minimal introduction about rate, proportion and amount, as well as brief coverage of probability, the students were able to identify table components readily and do some critical thinking about what the data in the tables demonstrated.

#### **Suggestions for the future**

##### *Separate course vs attached course*

We believe the content of the course and the data literacy modules are, for the most part, on target for developing skills students need and faculty want students to possess for upper division sociology courses. Based on our experience, however, we also think that offering a stand-alone course is neither the ideal method for teaching overall information literacy skills to upper division sociology students nor the best way to incorporate statistical literacy into the IL program. The course content reflects sociological research problems and tools and requires students to think about information and data literacy. As a separate course, however, it is not possible for the instructors to require students to reinforce or integrate new skills with other social science coursework. We, therefore, could not assess learning in the real life situation of a sociology course, nor could the students derive an immediate benefit from the IL instruction. Just as most teaching librarians view course-integrated instruction as more promising than the standard one-shot, we believe that integration of the IL lab modules into a social science course would offer a better chance than a separate course does for students to apply what they learn and to contextualize the information skills.

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The idea of attaching an optional, one-unit information literacy lab to four different sociology courses with different professors and approaches seemed prohibitive at first because of the resources it would require, but it is an alternative we are reconsidering. It would have a major advantage over the separate course. Unlike a freestanding course, the attached lab would be fully integrated into the sociology courses and geared to the course assignments, topics and data elements. Further, it would engage more faculty in the process of building information and data literacy in their students via the curriculum. We could theoretically reach all majors this way since they all have to take at least one of the four courses. It is, however, unrealistic to devote more than one librarian per academic quarter to this effort. In coming to terms with existing resources, it may be necessary to set aside the goal of reaching all majors in favor of developing and learning from the opportunity to integrate information and data literacy outcomes into courses that at least some majors would take.

#### *The challenge of faculty outreach*

The upper division sociology curriculum has proven more complex to program for information literacy than the lower division curriculum. Professors who teach the six to fifteen upper division seminars given each quarter have responded in various ways to the offer of a single instructional session for their seminars. Some instructors incorporate a library session every quarter into the course to improve their students' research, others respond only when there is a research project that they think warrants instruction, and still others do not respond. We are currently strategizing approaches to enhance faculty interest and response to both one-shot instruction and the idea of the attached information and data literacy course. We hope to re-introduce these ideas to the faculty in the context of a presentation on the new ACRL ANSS information literacy standards (ACRL, 2007).

#### *Assessment*

We have not yet found the best way to assess what the students learned and whether or not they will continue to use the skills they have been taught. If we teach the course again (ideally, attached to a sociology course), we would consider giving a short pre-test/post-test focused on students' ability to examine a table and answer questions correctly. In the attached-course setting, we would try to obtain faculty cooperation to require and assess the use of data in the research paper. We would also determine students' prior training in quantitative methods by noting prior courses taken and asking about course content. Because assessment of in-class activities and homework was so valuable, for future courses we would develop additional exercises. Given Helmericks' (1993) view that collaborative learning environments are important to student success, we would consider how to design assignments that can be structured around group participation.

#### *Development of data literacy as part of information literacy*

We plan several avenues of exploration to move forward with some of the ideas and strategies described, including:

- proposing a 1-unit lab attached to other sociology courses;
- expanding into more courses and disciplines;

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- exploring how faculty could integrate the data literacy modules into their courses; and
  - professional activities in library and academic associations.

As more online data analysis tools are developed and more data are readily available for use in an online analysis format, it becomes easier to incorporate data literacy into social science information literacy initiatives. It might be possible to incorporate data literacy modules into courseware management systems (such as Moodle or WebCT) and course web sites, greatly expanding the audience and course-integration of these tools. We will promote both the role of information experts and the use of statistical materials in courses and will continue to share this work with the larger professional community. Stephenson presented at the May 2007 annual meeting of the International Association for Social Science Information Services and Technology. Caravello co-presented a workshop with two sociologists and another librarian at the Annual Meeting of the American Sociological Association in August 2007 on how to use the ACRL-ANSS standards to enhance coursework and curricula with information literacy learning outcomes, and this includes the data components.

### Conclusion

In many of the social sciences, and particularly in sociology, comprehension of the scholarly record and development of critical thinking rely in part on an understanding of numerical information and its representations. Data literacy is therefore an integral component of information literacy for these disciplines. While it is not up to the librarian or data archivist to teach statistics and quantitative methodologies to undergraduates – faculty teach this in methodology and statistics courses – information professionals can have a role in helping students develop and build data literacy. If students are expected to use data skills as they move into higher level, evaluative, and interpretive research and coursework, they will need multiple opportunities in which to develop data literacy. One promising strategy is collaboration among librarians who teach information literacy, data archivists who assist students with access to and use of data, and faculty who teach sociology and other social sciences. Building on our experience teaching a stand-alone course in information and data literacy for sociology, we also advocate the integration of pedagogies for data literacy and information literacy in the context of, rather than apart from, social science coursework. Finally, exploration and systematic use of the ACRL-ANSS (2007) learning outcomes for students of sociology and anthropology can aid both the assessment of these efforts and their curricular integration.

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## Appendix 1

*Syllabus: Sociology – 105 Sociology Information Literacy Lab (1-Unit) Winter 2005*

Wednesdays, 11-11:50 a.m.

Location: Social Sciences Computing Lab in Public Policy 2035H, or  
East Electronic Classroom YRL 21536 (see weekly schedule)

The goal of the Sociology Lab is for students to demonstrate that they are able to identify, locate, evaluate, and use information effectively and ethically for sociological inquiries. The Lab builds on information literacy instruction that students might have received previously (for example, in Sociology 1 or 20 or English 3) in order to introduce more evaluation and research strategies, additional sociological resources, and concepts in using statistical information. Students will critique and select relevant research tools, identify appropriate source materials for sociological research, and become more confident researchers.

### Instructors

- Patti Caravello, YRL Reference & Instructional Services 310-825-5025; [patti@library.ucla.edu](mailto:patti@library.ucla.edu)
- Libbie Stephenson, Social Science Data Archive 310-825-0716; [libbie@ucla.edu](mailto:libbie@ucla.edu)

### Web pages

The course webpage includes links to these sites under "Class Links"

- Research Resources for Sociology: [www.library.ucla.edu/yrl/reference/guides/socmain.htm](http://www.library.ucla.edu/yrl/reference/guides/socmain.htm)
- Road to Research tutorial: [www.sscnet.ucla.edu/library/](http://www.sscnet.ucla.edu/library/)
- Bruin Success with Less Stress tutorial: [www.library.ucla.edu/bruinsuccess/](http://www.library.ucla.edu/bruinsuccess/)
- Analyzing Statistical Tables [www.stat.gouv.qc.ca/jeunesse/index\\_analyse\\_an.htm](http://www.stat.gouv.qc.ca/jeunesse/index_analyse_an.htm)
- American FactFinder (U.S. Census): [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

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Readings, noted in the weekly schedule, are assigned from:

- *Guide: A guide to writing sociology papers*. The Sociology Writing Group; coordinators and editors, Judith Richlin-Klonsky and Ellen Strenski. 5th ed. New York: Worth Publishers, 2001. [on Reserve in Powell and at YRL Reference Desk HM 73.G78 2001]
- *Soc. Stu.: The sociology student writer's manual*. William A. Johnson et al. 4th ed. Upper Saddle River, NJ.: Pearson Education, 2004. [YRL Reference Desk HM 585.S638 2004]

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*Homework assignment due dates*

- Jan. 26: Description of a research topic
- Feb. 9: Brief essay comparing article databases
- Feb 16: Website report and critique
- Mar. 2: Citation tracing & Use of other people's ideas and words
- Mar. 9: Using American Factfinder to create a statistical table
- Mar. 16: Interpreting and citing statistical tables in a scholarly article; Annotated, descriptive & evaluative bibliography

*Attendance and participation*

- Students are expected to attend all scheduled sessions and participate in class. There will be many opportunities for active, hands-on learning. Forty percent of the lab grade is based on attendance and active in-class participation.

*Homework policies*

- All homework assignments must be completed on time for full credit. Late papers will be penalized half a point for each day late.
- Assignments must be literate, legible, and typed unless otherwise specified. Works must be cited using a standard citation style, preferably American Sociological Association style (see *Soc. Stu.*, pp. 80-100), or MLA, APA, or Univ. of Chicago/Turabian.
- Plagiarism is a violation of the UCLA Student Conduct Code and will result in sanctions including suspension or expulsion. Plagiarism is quoting, paraphrasing, or using someone else's words or ideas without crediting the original author or otherwise misrepresenting submitted work as your own. Remember to cite *all* your sources.

*Grading*

- (1) The basis for the grade is a 100-point scale (60 for assignments, 40 for attendance/participation). Of the 7 assignments:
  - the first 4 are worth 8 points each (32 pts max)
  - the 5th and 6th are worth 4 points each (8 pts max)
  - the 7th assignment (Annotated Bibliography) is worth 20 points.
- (2) Attendance, including active in-class participation, is worth 40 points.

Date	Topic	Reading	Homework due this class session
1/12	Introduction & lab objectives. "Information literacy." UCLA libraries & their resources. Location: SSC 2035H		
1/19	Articulating a research topic. Using background sources. Identifying the types of information needed for research. Scholarly vs popular. Evaluation of resources. Location: YRL EEC	<i>Guide</i> , chap. 1 and pp. 86-87 Road to Research tut. [Starting pts-Materials]	
1/26	Library catalogs. Interpreting citations. Location: YRL EEC	Road to Research tutorial [Find it-Books]	Description of research topic <sup>a</sup>
2/2	Article databases. Location: YRL EEC	<i>Soc. Stu.</i> , pp. 172-87 Road to Research tut. [Judge for yrslf-Articles]	
2/9	Web resources. Invisible vs Visible Web. Evaluation. Location: YRL EEC		Essay comparing article databases*
2/16	Students present Web resource evaluations Location: SSC 2035H		Website reports & critiques <sup>a</sup>
2/23	Ethical issues in the use of information. Plagiarism. Common knowledge. Citation. Location: YRL EEC	<i>Guide</i> , chap. 3	Student conferences
3/2	Looking at statistical tables, American FactFinder. Evaluation. Location: SSC 2035H	<i>Soc.Stu.</i> , chap. 8 American FactFinder "Help" link, for reference	Citation tracing & Use of other people's ideas and words (short essay) <sup>a</sup>
3/9	Using online table-making resources. ICPSR. Location: SSC 2035H	<i>Guide</i> , chap. 8 Analyzing Stat Tables	Using American Factfinder to create a statistical table <sup>a</sup>
3/16	Brief student presentations of final projects Location: YRL EEC	<i>Soc.Stu.</i> , pp. 188-94 <i>Soc.Stu.</i> , chap. 4 (style sheet for reference)	Interpreting and citing statistical tables in a scholarly article <sup>a</sup> ; Annotated bibliography <sup>a</sup>

Note: <sup>a</sup> Assignments that count toward the Lab grade

Table AI.

## Appendix 2. Additional information and teaching resources

Two web sites that offer teaching materials complete with freely available lecture materials, data, and assignments:

- (1) *Data and Story Library* (1996, updated 2005), Cornell University, Ithaca, NY, available at: <http://lib.stat.cmu.edu/DASL/> (accessed July 31, 2007).
- (2) Snell, J.L. (1999), *Chance*, Dartmouth College, Hanover, NH, available at: [www.dartmouth.edu/~chance/](http://www.dartmouth.edu/~chance/) (accessed July 31, 2007).

The Inter-university Consortium for Political and Social Research (ICPSR), to which most US colleges and universities belong, provides members with a variety of tools and resources such as:

- *Bibliography of Data-Related Literature*, ICPSR, available at: [www.icpsr.umich.edu/ICPSR/citations/index.html](http://www.icpsr.umich.edu/ICPSR/citations/index.html) (accessed July 31, 2007).
- Barlow, R. *Exploring Data through Research Literature*, ICPSR, available at: [www.icpsr.umich.edu/EDRL/index.html](http://www.icpsr.umich.edu/EDRL/index.html) (accessed 31 July 2007).

*Teaching Sociology* (a journal from the American Sociological Association): “Special Issue on Cultivating Quantitative Literacy” (2006) Vol. 34, No. 1 includes several excellent articles on curricular and pedagogical issues and techniques.

#### **About the authors**

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