



Department of MANSFIELD LIBRARY Academic Year 2016-17 Assessment Report

MISSION STATEMENT

Library Mission: The Mansfield Library, the premier research library in Montana, facilitates the intellectual and creative pursuits of all members of the University of Montana community and supports their informational, educational and cultural development as global citizens.

Library Instruction Mission (pre January 2016): The central mission of library instruction is to create information literate students. Information literate students know how to find, evaluate, and use information effectively and ethically.

Library Instruction Mission (approved January 2016): The central mission of library instruction is to create information literate students. According to the Association of College and Research Libraries’ (ACRL) *Framework for Information Literacy for Higher Education* “Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.”

DEPARTMENT OBJECTIVES and ALIGNMENT WITH STRATEGIC ISSUES

1. Create information literate students. (Discovery and Creativity to Serve Montana and the World, Partnering for Student Success)
2. Prepare students for twenty-first century challenges, and to address local and global issues and to make a difference in the cultural and economic fabric of Montana and the world. (Education for the Global Century, Dynamic Learning Environment)
3. Facilitate the intellectual and creative pursuits of all members of the University of Montana community. (Discovery and Creativity to Serve Montana and the World, Partnering for Student Success, Dynamic Learning Environment)
4. Support the informational, educational and cultural development of UM community members as global citizens. (Discovery and Creativity to Serve Montana and the World, Partnering for Student Success, Dynamic Learning Environment)

STUDENT LEARNING GOALS and MEASUREMENT TOOLS

Student Learning Goals	<Measureme nt Tool>	<Measureme nt Tool>	<Measureme nt Tool>	<Measureme nt Tool>	<Measureme nt Tool>
Instruction Learning Goals (pre January 16)ⁱ 1. Define and articulate the need for information. 2. Access needed information effectively and efficiently. 3. Evaluate information and its sources critically and incorporate selected information into one’s knowledge base and value system. 4. Use information effectively to accomplish a specific purpose, individually or as a member of a group. 5.	Information Literacy Topical Module of the National Survey of Student Engagement (NSSE) (Spring 2016)	Learning Outcomes Assessment of 200-level Classes (Academic Year 2015-2016)	LibQUAL+™ (Spring 2015)	Evaluations (continuous): • Student Evaluation of Library Instruction • Instructor Evaluation of Library Instruction	Statistics and Trends (continuous): • Instruction • Reference

Student Learning Goals	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>
<p>Understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally.</p> <p>Instruction Concepts (approved January 2016)ⁱⁱ 1. Authority is Constructed. 2. Information Creation as a Process. 3. Information Has Value. 4. Research as Inquiry. 5. Scholarship as Conversation. 6. Searching as Strategic Exploration. See the revised Library Information Literacy Curriculum for detailed Knowledge Practices and Dispositions.</p> <p>Instruction “Partner in the educational mission of the institution to develop and support information-literate learners who can discover, access, and use information effectively for academic success, research, and lifelong learning.”ⁱⁱⁱ</p>					
<p>Collections “Provide access to collections sufficient in quality, depth, diversity, format, and currency to support the research and teaching missions of the institution.”^{iv}</p>	Price Per Use, Print Status, Overlap in Content, Library Department Representative Feedback (Autumn 2016, Spring 2015)	LibQUAL+™ (Spring 2015)	New Program Proposals and Accreditation Reviews (as proposed or required)	Collection Use Statistics/Trends (continuous)	
<p>Discovery, Technology, and Virtual and Physical Spaces</p> <ul style="list-style-type: none"> “Enable users to discover information in all formats through effective use of technology and organization of knowledge.”^v Serve as “the intellectual 	Whiteboard User Feedback Projects (Spring 2016, Autumn 2015)	Student Employee Focus Groups (Spring 2016, Spring 2015)	LibQUAL+™ (Spring 2015)	User Experience Studies: <ul style="list-style-type: none"> Journey Mapping (Spring 2015) Catalog (Autumn 	Statistics/Trends (continuous): <ul style="list-style-type: none"> Web ScholarWorks Exhibits Programs Program

Student Learning Goals	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>	<Measurement Tool>
commons where users interact with ideas in both physical and virtual environments to expand learning and facilitate the creation of new knowledge.” ^{vi}				2014)	Attendance <ul style="list-style-type: none"> • Building Use • Study Room Use
Professional Values “Commit to a user-centered approach and demonstrate the centrality of users in all aspects of service design and delivery in the physical and virtual environments.” ^{vii}	Whiteboard User Feedback Projects (Spring 2016, Autumn 2015)	Student Employee Focus Groups (Spring 2016, Spring 2015)	LibQUAL+™ (Spring 2015)	User Experience Studies: <ul style="list-style-type: none"> • Journey Mapping (Spring 2015) • Catalog (Autumn 2014) 	

RESULTS and MODIFICATIONS

Learning Goal results	Modifications made to enhance learning
<p>Experiences with Information Literacy Topical Module of the National Survey of Student Engagement (Spring 2016)</p> <ul style="list-style-type: none"> • 55% of Senior students completed an assignment that used the library’s electronic collections. • 88% of both First-Year and Senior students’ instructors emphasized not plagiarizing another author’s work. • Behaviors practiced with low frequencies by both First-Year and Senior students were those that require evaluation. • 80% of Seniors reported that their experience at UM contributed to their knowledge, skills, and personal development in using information effectively, compared with 67% of First-Year students. 	<p>Curricular/Pedagogical modifications: Developed new curriculum for upper-division writing courses.</p> <p>Potential modifications/actions: Several recommendations were developed related to fostering campus discussions on information literacy and informing the ways in which information literacy is taught and integrated into general education and major curriculum such as collaborating with the Writing Committee to review the integrated information literacy learning outcomes in first-year and upper-division writing approved courses, and building instructional elements that focus on evaluation of sources and research discovery to hone research topics.</p> <p>Potential assessment modifications: Measure correlations between student information literacy behaviors and instructor experiences and other institutional experiences and demographics. Explore first-year students’ understanding of the library’s electronic collections. Explore the process students use to evaluate the quality of information sources.</p>
<p>LibQUAL+™ (Spring 2015)</p> <p>The following items were of most importance to UM respondents, as measured by mean desired service level on the survey (scores are scaled from 1 to 9, from Low to High, with 9 being the most favorable):</p> <ul style="list-style-type: none"> • A library web site enabling me to locate information on my own (7.97), 	<p>Modifications/Actions: Continued development of video tutorials and preferring electronic to print format in acquisitions when possible. Repurposed open Associate Professor line to a Web Specialist Librarian (faculty hired Autumn 2016). Implemented new live chat and email software. Conducted internal cross-training of public services employees. Designated Level 5 as a quiet floor;</p>

Learning Goal results	Modifications made to enhance learning
<ul style="list-style-type: none"> • Making electronic resources accessible from my home or office (7.89), • Employees who have the knowledge to answer user questions (7.89), • Employees who are consistently courteous (7.89), and • Making information easily accessible for independent use (7.87). <p>The desired service level for Library as Place overall increased between 2010 and 2015.</p> <p>The majority of positive open-ended comments were written about personnel (8%), the information center (5%), and study space (2%). The majority of negative comments were about the environment (11%), web site (4%), and facilities (4%).</p> <p>See the LibQUAL+™ 2015 Survey report for details.</p>	<p>removed group study rooms from the floor given soundproofing of the rooms is cost prohibitive. Purchased new comfortable furniture.</p> <p>Assessment modifications: The Whiteboard User Feedback Project and Student Employee Focus Group, both conducted during Spring 2016, sought to complement and follow-up on LibQUAL+™ findings, particularly student employee knowledge of the library, spaces and noise in the building, and marketing of library services.</p>
<p>Learning Outcomes Assessment of 200-level Classes (Academic Year 2015-2016)</p> <ul style="list-style-type: none"> • Students compared the articles in a way that indicated that they understood that different types of sources can address research needs and were able to explain the differences with terms that included credibility, scope, audience and intent. 	<p>Potential curricular modifications: Online teaching tutorials are now available that support the instruction of evaluating sources and could be used by all library teaching faculty in advance of or as a complement to classroom instruction. It is further recommended that the tutorials be linked to all online Research Guides so that students might discover them during their personal research.</p> <p>Potential assessment modifications: Revise instrument instructions and distribute articles students are asked to compare.</p>
<p>Instruction Statistics/Trends (continuous)</p> <ul style="list-style-type: none"> • Instruction requests for non-writing designated courses, courses not targeted for instruction in the library's Information Literacy Curriculum. • Increased number of academic programs on campus. • Increased request for workshops, workshops offered at different times, or online access to workshop content. 	<p>Curricular/Pedagogical modifications: Developed nineteen video tutorials. Increased the number and marketing of drop-in research workshops. Revised Information Literacy Curriculum. Developing new curriculum for upper-division writing courses.</p> <p>Modifications/Actions: Repurposed open Associate Professor line to an eLearning and Instructional Technology Librarian (hired Spring 2015). Modified Adjunct Professor responsibilities to include workshop coordination and instruction.</p>
<p>Reference Statistics/Trends (continuous)</p> <ul style="list-style-type: none"> • Increased use of live chat requests as well as evening and weekend email requests (after a new live chat and email software was implemented in September 2015). 	<p>Modifications/Actions: Adjusted staffing hours.</p>
<p>Price Per Use, Print Status, Overlap in Content, Library Department Representative Feedback (Autumn 2016)</p> <ul style="list-style-type: none"> • A high percentage of overlapping content (as measured by over 50%) was identified for five 	<p>Modifications/Actions: Maintained or cut resources from the collection based on data and feedback. Continuing to pursue consortial purchasing for cost savings.</p>

Learning Goal results	Modifications made to enhance learning
<p>full-text electronic resources.</p> <ul style="list-style-type: none"> • Requests to maintain disciplinary resources exceeded requests to maintain multidisciplinary resources. 	
<p>New Program Proposals, Accreditation and Center Reviews (as proposed or required)</p> <ul style="list-style-type: none"> • Collections were identified as meeting the needs of proposed Board of Regents Level II proposals. • Recommendations for additional journal subscriptions or adjustments to the library's approval plan were made in some instances. 	<p>Modifications/Actions: Deans who submitted Level II proposals were notified that cumulative additional new degree programs at UM without increased funding for the Mansfield Library budget or further reductions to the Library budget could impact the ability to adequately support new degree programs, particularly those with a research focus (e.g., Public Health Ph.D., Speech-Language Pathology Ph.D.). And it was recommended to Deans that the Library be included in future grant funding models so that information resources and library services can continue to adequately support research needs and curricular requirements of new majors.</p>
<p>Journey Mapping (Spring 2015)</p> <ul style="list-style-type: none"> • Scenario tasks identified stress points for students in using the library to: locate a specific article, acquire a book, and send a chat query. • Scenario tasks that were easier for students to complete: charge a cell phone, find a quiet study area, and use the main search box. 	<p>Modifications/Actions: Multiple actions related to the website, workflow practices, policies, and advertising were taken including changing linking and language on the website, advertising library services on the library homepage, designating Level 5 as a quiet floor, and implementing new live chat and email software. Additionally, an open Associate Professor line was repurposed to a Web Specialist Librarian (hired Autumn 2016).</p>
<p>Whiteboard User Feedback Projects (Spring 2016)</p> <ul style="list-style-type: none"> • Feedback on respondents' favorite library resource solicited comments covering technology (computers, printers, databases) and spaces (group study rooms, study carrels, place to nap). • The majority of suggestions or requests focused on comfort/sustenance, quiet, and cleanliness. 	<p>Modifications/Actions: Designated Level 5 as a quiet floor; removed group study rooms from the floor given soundproofing of the rooms is cost prohibitive. Purchased new comfortable furniture. Added water bottle filler.</p> <p>Assessment modification: Developed methodology for using whiteboards for assessment projects.</p>
<p>Student Employee Focus Groups (Spring 2016, Spring 2015)</p> <ul style="list-style-type: none"> • Students lack knowledge of the variety of services offered by the library (e.g., Interlibrary loan, government documents, non-traditional circulating items such as media equipment). • Students expressed an interest in learning more about library policies and the various library departments and services. • Students can find the building intimidating. • Students indicated the main role of the library is to provide assistance. 	<p>Potential modifications/actions: Recommendations were developed related to increasing awareness of existing library services through new promotion, outreach, and orientation efforts, as well as for internal employee training.</p>

FUTURE PLANS FOR CONTINUED ASSESSMENT

Future plans include further investigation of the NSSE Experiences with Information Literacy module to triangulate and better understand the data, and usability studies to inform website design and the configuration of a discovery search interface.

APPENDICIES

- A. [Library Information Literacy Curriculum 2013-2015](#)
- B. [Library Instruction Progress Report FY 2015](#)
- C. [Library Instruction Progress Report FY 2016](#)
- D. [NSSE Experiences with Information Literacy Topical Module Charts and Recommendations](#)
- E. [Example Board of Regents Level II Program Proposal Library Response](#)

ⁱ [Information literacy competency standards for higher education](#). (2000). Chicago: Association of College & Research Libraries.

ⁱⁱ [Framework for information literacy for higher education](#). (2016). Chicago: Association of College & Research Libraries.

ⁱⁱⁱ Principle 3 educational role. (2011). In [Standards for libraries in higher education](#). Chicago: Association of College & Research Libraries.

^{iv} Principle 5 collections. (2011). In [Standards for libraries in higher education](#). Chicago: Association of College & Research Libraries.

^v Principle 4 discovery. (2011). In [Standards for libraries in higher education](#). Chicago: Association of College & Research Libraries.

^{vi} Principle 6 space. (2011). In [Standards for libraries in higher education](#). Chicago: Association of College & Research Libraries.

^{vii} Principle 2 professional values. (2011). In [Standards for libraries in higher education](#). Chicago: Association of College & Research Libraries.

A. Library Information Literacy Curriculum 2013-2015

October 2008, Updated August 2009, Updated January 2013

Prepared by: Library Instruction Curriculum Task Force and Library Instruction Coordinator, Julie Edwards, Samantha Hines, Tammy Ravas, Sue Samson, and Kate Zoellner

Introduction

The central mission of library instruction is to create information literate students. Information literate students know how to find, evaluate, and use information effectively and ethically. According to the Association of College and Research Libraries' (ACRL) *Information Literacy Competency Standards for Higher Education* "Gaining skills in information literacy multiplies the opportunities for students' self-directed learning, as they become engaged in using a wide variety of information sources to expand their knowledge, ask informed questions, and sharpen their critical thinking..." (5). Thus, information literacy provides a foundation for life-long learning, the ultimate goal of education, and is common to all disciplines, learning environments, and levels of education. In the recent report *College Learning for the New Global Century*, information literacy is discussed as an essential learning outcome students need to prepare for twenty-first century challenges. As information professionals, faculty librarians are uniquely positioned to guide the process of integrating information literacy within the university curriculum and to ensure that students are prepared for the challenges of a highly competitive, information-rich society.

Library Information Literacy Standards

The ACRL [Information Literacy Competency Standards for Higher Education](#) provide a set of information literacy standards, performance indicators, and outcomes that serve as the basis for assisting learners to master content and extend their investigations, to become more self-directed, and to assume greater control over their own learning.

ACRL Standards for Information Literacy include:

- Standard One: The information literate student defines and articulates the need for information.
- Standard Two: The information literate student accesses needed information effectively and efficiently.
- Standard Three: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
- Standard Four: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
- Standard Five: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

General Education Library Information Literacy Curriculum

The strategic integration of information literacy into the curriculum begins with first-year initiatives that serve as the basis for information literacy instruction in the disciplines at the junior and senior levels (Tables 1-2). First-year curriculum integration decisions have been made on the basis of several factors:

- integration into courses that are a part of the standard university curriculum;
- integration into courses with a research component, usually smaller enrollment classes; and
- integration into courses with a large enrollment through participation in the Global Leadership Initiative, which offers the opportunity to provide cross-disciplinary information literacy instruction.

Specific standards and teaching strategies have been identified for targeted courses to establish quality learning opportunities for first-year students. At every opportunity, librarians seek to serve as research consultants and pedagogical guides and to facilitate the successful delivery of information literacy content by teaching faculty in the disciplines.

Targeted First-year Courses:

- Developmental Writing
- College Writing I
- College Writing II
- Introduction to Public Speaking
- Honors College Seminar
- Global Leadership Initiative
- Service Learning Classes

Upper-Division and Graduate Library Information Literacy Curriculum

Based on the delivery of lower-division information literacy instruction, liaison librarians work collaboratively with faculty in all the departments, schools, and colleges to tailor advanced information literacy instruction to upper-division students in their major studies (Tables 1-2). Liaison librarians target research and writing courses in all majors. At every opportunity, librarians seek to serve as research consultants and pedagogical guides to students and faculty and to facilitate the successful delivery of information literacy content through collaboration with faculty that includes:

- Collaborate with faculty and department curriculum committees to integrate information literacy standards into the curriculum and learning outcomes of the academic unit.
- Provide consultative services to teaching faculty to develop curriculum-integrated library research assignments.
- Promote instruction in the use of library resources to students and faculty, integrating the tiered Library Information Literacy Curriculum.
- Serve as an embedded librarian within classes during sessions focused on research assignments.
- Create web-based subject resources for faculty, students, and staff.
- Maintain regular, advertised office hours each semester to provide individual and small group research assistance.
- Provide Information Center Reference assistance on a regular schedule.
- Provide small group instruction sessions as part of the Learning Commons.

The University of Montana English Writing Competency

The University's English Writing Competency Guidelines include information literacy learning outcomes that students will gain upon completion of the required initial and upper-division writing courses. "Incorporating information literacy across curricula... requires the collaborative efforts of faculty, librarians, and administrators." (4) All liaison librarians are available to work with teaching faculty across disciplines to integrate information literacy into their writing courses and answer questions about information literacy. The Library hopes that the Library Information Literacy Curriculum document will provide guidance throughout the process.

Table 1. Information Literacy Framework

The following information literacy concepts and skills provide a framework for library instructors and teaching faculty to address during each of the indicated class levels.

100-level	200-level	300-level	400-level	Graduate
The role of students as scholars;	Choosing and stating a research	Choosing the appropriate	Identifying important	Information production and

discourse communities inside and outside the university	topic; using research to refine topic	resources, sources, or investigative methods based on research need	associations, publications, and scholars in the discipline	organization; scholarly publication processes, inclusive of publication models and authors' rights; copyright and fair use
Developing research questions and relevant keywords	Keyword and subject searching; broadening and narrowing search terms	Research ethics	Scholarly publication processes	Ethical, legal, and social issues surrounding the use of information
Critical evaluation of information; value and distinctness of information resources (e.g., data sets, finding aids, Internet, library catalog, librarians, subscription databases, etc.)	Value and distinctness of general and subject-specific information resources	Incorporating new information into knowledge base and value system	Economic, legal, political, and socio-economic impacts on information access and use	Critical evaluation of information
Citing research sources of all types formats; academic honesty and plagiarism	Value and distinctness of information sources (e.g., popular, trade, and scholarly; primary and secondary; current and historical, etc.)	Combining new and prior knowledge to create original scholarship	Knowledge of discipline-specific information resources and their organization and use	Research ethics
Information production and organization; copyright and fair use	Tracing citation data back to original source	The ways in which sources are utilized by different disciplines	Advanced search strategies (e.g., use of controlled vocabularies, Boolean operators, cited references)	Economic, legal, political, and socio-economic impacts on information access and use
Ethical, legal, and social issues surrounding the use of information	Interdisciplinary research	Identifying gaps in research; comparing and contrasting research arguments, data, studies, and methodologies	Repeated content: Research ethics	Literature review process
	Repeated content: Critical evaluation of information	Discipline-specific citation styles	Incorporating new information into knowledge base and value system	Incorporating new information into knowledge base and value system
	Citing research sources of all types formats; academic honesty and plagiarism	Information management	Combining new and prior knowledge to create original scholarship	Combining new and prior knowledge to create original scholarship
	Information production and organization; copyright and fair use;	Repeated content: Ethical, legal, and social issues surrounding the use of information	Identifying gaps in research; comparing and contrasting research arguments, data, studies, and methodologies	Identifying important information associations, publications, and scholars in the discipline
	Ethical, legal, and social issues surrounding the use of information	Critical evaluation of information	Choosing the appropriate resources, sources, or investigative	Knowledge of discipline-specific information resources and their organization and use
		Citing research sources; academic honesty and plagiarism		Advanced search

			<p>methods based on research need</p> <p>Information management</p>	<p>strategies (e.g., use of controlled vocabularies, Boolean operators, cited references)</p> <p>Discipline- and journal-specific citation styles</p> <p>Citing research sources of all types formats; academic honesty and plagiarism</p> <p>Information management</p>
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Table 2. Information Literacy Rubric

The following Information Literacy Curriculum rubric identifies information literacy learning outcomes for students to complete at the end of each of the indicated class levels.

100-level	200-level	300-level	400-level	Graduate
<p>Identify and explain discourse communities</p> <p>Identify research questions; translate questions into keywords for searching</p> <p>Recognize different information resources and explain the value and differences between them (e.g., finding aids, library catalog, subscription databases)</p> <p>Construct in-text citations and a bibliography, inclusive of all source types and formats (e.g., articles, images, music; print, electronic)</p>	<p>Identify and describe a research topic</p> <p>Recognize that, based on research, an initial topic may need to be refined</p> <p>Confer with instructors and librarians about appropriate research topics, information resources and search strategies</p> <p>Execute both keyword and subject searches; execute revised searches to refine results</p> <p>Explain why there is usually not "one" source that will meet all research needs</p>	<p>Implement a research strategy appropriate to research need</p> <p>Explain the role of ethics in research</p> <p>Combine, relate, and reconcile new information with prior knowledge and beliefs</p> <p>Compare and contrast research from various sources to create an holistic analysis of a topic</p> <p>Recognize the value of original scholarship; construct an original argument or position based on research findings</p> <p>Compare the use</p>	<p>Identify important associations, publications, and scholars in the discipline; explain the role of these resources in the discipline; explain the contributions of individual scholars to the discipline</p> <p>Describe the scholarly publication process</p> <p>Explain the economic, legal, political, and socio-economic impacts on information access and use (e.g., censorship, constraints, costs, funded research, policies, scholarship)</p> <p>Describe key discipline-specific information</p>	<p>Describe how information is produced and organized, as well as the role of copyright and fair use</p> <p>Describe the scholarly publication process, inclusive of publication models and authors' rights</p> <p>Assess the reliability, validity, accuracy, authority, timeliness, and point or view or bias of information sources</p> <p>Explain the role of ethics in research, including the role of Institutional Review Boards</p> <p>Recognize ethical, legal and social</p>

<p>Explain the importance of citing research sources and academic honesty</p> <p>Describe how information is produced and organized, as well as the role of copyright and fair use</p> <p>Recognize ethical, legal and social issues surrounding the use of information (e.g., academic freedom, right to privacy, free and fee-based information, intellectual property)</p> <p>Assess the reliability, validity, accuracy, authority, timeliness, and point of view or bias of information sources</p>	<p>Recognize and explain the value and differences between general and subject-specific information resources</p> <p>Recognize different information sources and explain the value and differences between them, including their scope, audience and intent (e.g., archival collections; government information; popular, trade, and scholarly publications)</p> <p>Trace source citation to original material, regardless of citation style and source format</p> <p>Categorize research topics by discipline; explain what constitutes an interdisciplinary topic</p>	<p>of information sources by discipline</p> <p>Identify gaps in research findings and modify research strategies accordingly</p> <p>Recognize that different disciplines have different citation styles and style guidelines</p> <p>Apply discipline-specific style guide to research productions</p> <p>Document and organize personal research process and information sources</p>	<p>resources and how they are organized and used</p> <p>Construct advanced searches using controlled vocabularies and Boolean operators; execute cited reference searches</p> <p>Recognize and explain the value of tracking citations forward and backward</p>	<p>issues surrounding the use of information (e.g., academic freedom, right to privacy, free and fee-based information, intellectual property)</p> <p>Explain the economic, legal, political, and socio-economic impacts on information access and use (e.g., censorship, constraints, costs, funded research, policies, scholarship)</p> <p>Distinguish between and explain the steps of a literature review</p> <p>Combine, relate, and reconcile new information with prior knowledge and beliefs</p> <p>Compare and contrast research from various sources to create an holistic analysis of a topic</p> <p>Recognize the value of original scholarship; construct an original argument or position based on research findings</p> <p>Identify important associations, publications, and scholars in the discipline; explain the role of these</p>
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				<p>resources in the discipline; explain the contributions of individual scholars to the discipline</p> <p>Describe key discipline-specific information resources and how they are organized and used</p> <p>Construct advanced searches using controlled vocabularies and Boolean operators; execute cited reference searches</p> <p>Recognize and explain the value of tracking citations forward and backward</p> <p>Apply discipline-specific style guide to research productions</p> <p>Explain the importance of citing research sources and academic honesty</p> <p>Document and organize personal research process and information sources</p>
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Works Consulted

Association of College and Research Libraries. [Information Literacy Competency Standards for Higher Education](#). Chicago: ALA, 2000. American Library Association.

---. [A Progress Report on Information Literacy: An Update on the American Library Association Presidential Committee on Information Literacy: Final Report](#). Chicago: ALA, 1998. American Library Association.

National Leadership Council for Liberal Education and America's Promise. [College Learning for the New Global Century](#). Washington: AAC&U, 2007. Association of American Colleges & Universities.

Presidential Committee on Information Literacy. [Presidential Committee on Information Literacy: Final Report](#). Chicago: ALA, 1989. American Library Association.

The Association of College and Research Libraries (ACRL) maintains an up-to-date [Information Literacy web site](#) that provides an overview of information literacy, guidelines and standards as well as resources and activities.

Discipline-based divisions within ACRL have tailored the Information Literacy Competency Standards for Higher Education for specific disciplines. To date, the following have been completed:

- [Information Literacy Competency Standards for Anthropology and Sociology Students](#),
- [Research Competency Guidelines for Literatures in English](#),
- [Political Science Research Competency Guidelines](#), and
- [Information Literacy Standards for Science and Technology](#).

Select information literacy programs at higher education institutions:

- [California State University Information Competence Initiative](#)
- [University of Connecticut General Education Guidelines](#)
- [University of North Dakota Goals of Essential Studies](#)
- [University of Texas at Austin Campus Information Literacy Initiatives](#)
- [University of Washington Information Literacy Learning](#)

Humes, Barbara. [Understanding Information Literacy](#). Washington: National Institute on Postsecondary Education, Libraries, and Lifelong Learning, 1999. US Dept. of Education.

Humes provides clear distinctions between information literacy, computer literacy and library literacy: "Information literacy is not the same as computer literacy (which requires a technological know-how to manipulate computer hardware and software) or library literacy (which requires the ability to use a library's collection and its services), although there is a strong relationship among all these concepts. Each of these literacies requires some level of critical thinking. ... Information literacy requires an awareness of the way in which information systems work, of the dynamic link between a particular information need and the sources and channels required to satisfy that need (Darch et al. 1997)."

Lau, Jesus. [Guidelines on Information Literacy for Lifelong Learning](#). The Hague, Neth.: IFLA, 2006. International Federation of Library Associations and Institutions.

These guidelines provide a conceptual template to guide the creation of information literacy programs across library types and to frame the efforts of educators, librarians and information facilitators at the international level. Information literacy concepts and the connection of information literacy with lifelong learning are discussed.

Shapiro, Jeremy J., and Shelley K. Hughes. "[Information Literacy as a Liberal Art: Enlightenment Proposals for a New Curriculum](#)." *Educom Review* 31.2 (1996). EDUCAUSE.

Shapiro and Hughes propose a broad view of Information literacy as "a new liberal art that extends from knowing how to use computers and access information to critical reflection on the nature of information itself, its technical infrastructure, and its social, cultural and even philosophical context and impact..." They delineate information literacy as inclusive of the following seven literacies: tool literacy, resource literacy, social-structural literacy, research literacy, publishing literacy, emerging technology literacy and critical literacy.

Spitzer, Kathleen L., Eisenberg, Michael B., and Lowe, Carrie A. [Information Literacy: Essential Skills for the Information Age](#). Washington: ERIC, 1998. ERIC.

This monograph traces the history and development of the term information literacy and provides examples of information literacy in a variety of K-12 and higher education contexts.

B. Library Instruction Progress Report FY 2015

Prepared by: Sue Samson, Professor, Library Instruction Coordinator

Partnering for Student Success

- Information literacy instruction is integrated into the curriculum of select first-year required courses and is facilitated by the Undergraduate Services Librarian.
- During AY2015, 154 classes were taught to 3,116 students through a carefully crafted information literacy curricula in College Writing (WRIT 101), Introduction to Public Speaking (COMX 111), and Global Leadership Initiative seminars.
- Collaborative work with the Honors College and the UM Conference of Undergraduate Research provides multiple opportunities to build information literacy instruction as a partner to student success.
- Library faculty partner with service-learning classes, Office of Student Services, Disability Student Services, TRIO Student Support Services, Association of Students of the University of Montana, and high school research classes in tandem with New Student Services among others.

Education for the Global Century

- Library faculty collaborated with the instructors of Global Leadership Initiative seminars to imbed information literacy into their curriculum.
- Library faculty coordinate orientation activities with Foreign Student and Scholar Services.
- Humphrey Scholars and other groups of foreign visitors are invited into the Mansfield Library for introductory tours and in-depth research assistance.
- A [Studying Abroad Research Guide](#) assists UM students and faculty studying abroad by highlighting contact information and information resource access that is readily available through online connections to the Mansfield Library from anywhere in the world.

Discovery and Creativity to Serve Montana and the World

- A journey mapping project was facilitated during spring semester 2015 to analyze the web page redesign for hosting databases and research guides. Recommendations for changes have been implemented and more are under review. These online resources have been carefully selected and compiled by library faculty to serve the research needs of the University of Montana in an information-rich global environment.

Dynamic Learning Environment

- The Information Literacy curriculum was redesigned to reflect the new *Framework for Information Literacy for Higher Education* published by the Association of College and Research Libraries (2015). Six frames are based on the definition of information literacy as the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.
- This curriculum is offered through a continuum of services and includes in-person reference transactions, virtual reference transactions, web site research guides, individual consultations, curriculum-integrated classes, and credit classes both online and face-to-face.
- During AY2015, library faculty taught a total of 469 classes to 13,527 students across the curriculum through curriculum-integrated and credit classes.
- Workshops and outreach sessions were provided in 173 sessions to 5,221 participants.
- Library faculty and staff also created fifteen exhibits and offered 46 related events attended by 3,000 participants.
- Beyond the classroom, library faculty provided 529 individual consultations to students and faculty needing research assistance; completed 27,851 in-person and 733 virtual reference transactions.

- Our web site was accessed 514,781 times and our subject guides, designed and developed by library faculty to provide virtual research assistance, were accessed 132,076 times. Documentation is provided in the Appendix.

Planning-Assessment Continuum

- A major focus of assessment this year was based on a study designed among other goals to determine if a correlation exists between use of library e-resources and student attainment as defined by grade point average (GPA). The findings statistically confirmed this correlation.
 - A statistically significant relationship was established between GPA and the number of times students use electronic library e-resources at each stage of their academic careers.
- Integral to the Library Instruction Program are multiple opportunities for library teaching faculty to solicit feedback on the effectiveness of their curriculum-integrated instruction.
 - Librarians are encouraged to use their individual feedback information as part of their teaching portfolios to further document their intent to improve instruction based on student need.
- In all categories, the effectiveness of the sessions has been of a very high caliber. Student feedback identified the instruction to be very effective or effective 94.1%, 90.8%, and 93.7% consecutively in the three tabulated questions. Responses to the open-ended questions support these percentages with individually stated outcomes.

Summary and Documentation

The Information Literacy curriculum is based on the central mission of library instruction to create information literate students who know how to find, evaluate, and use information effectively and ethically. This curriculum is offered through a continuum of services, primarily through the Information & Research Services Division (IRSD), and includes in-person reference transactions, virtual reference transactions, web site instructional guides, individual consultations, curriculum-integrated classes, and credit classes. Reference technicians, adjunct librarians, and IRSD liaison librarians serve at the Information Center Reference Desk.

Of all library faculty, 73.3% participate as liaisons with identified departments, schools, and/or colleges to whom they provide collaborative, curriculum-integrated instruction and reference assistance. During 2013-2014, library teaching faculty taught 3 credit classes and 522 curriculum-integrated classes and workshops to 10,665 students (Table 2) that represented all colleges and schools. Of these, 47% of the classes were coordinated by the Undergraduate Services Librarian as part of first-year experience outreach integrated into the curricula of College Writing I (WRIT 101), Introduction to Public Speaking (COMM 111), and the Global Leadership Initiative. Undergraduate classes represented 75.0%, graduate classes represented 07.0%, and other outreach represented 18.0% of the instruction.

Mansfield Library Teaching Faculty

- Barry Brown, Professor, Science Librarian
- Susanne Caro, Assistant Professor, Government Documents and School of Business Administration Librarian
- Angela Dresselhaus, Assistant Professor, History Librarian
- Julie Edwards, Associate Professor, Ethnic Studies Librarian
- Kim Granath, Professor, Public Health and College of Health Professions & Biomedical Sciences Librarian
- Samantha Hines, Associate Professor, Missoula College Librarian
- Donna McCrea, Associate Professor, Archivist
- Tammy Ravas, Associate Professor, College of Visual & Performing Arts Librarian
- Sue Samson, Professor, Humanities and School of Journalism Librarian
- Megan Stark, Associate Professor, Undergraduate Services, Honors College, and Modern & Classical Languages & Literatures Librarian

- Karen Jaskar, Assistant Professor, Social Sciences Librarian
- Kate Zoellner, Associate Professor, College of Education & Human Sciences and Department of Psychology Librarian

Reference, Virtual Reference, Web Site Visits, and LibGuide Usage

Table 1. Reference transaction data is extrapolated from an annual two-week collection period during October of each year. Virtual reference transactions, web site visits, and LibGuide usage are collected by internal software.

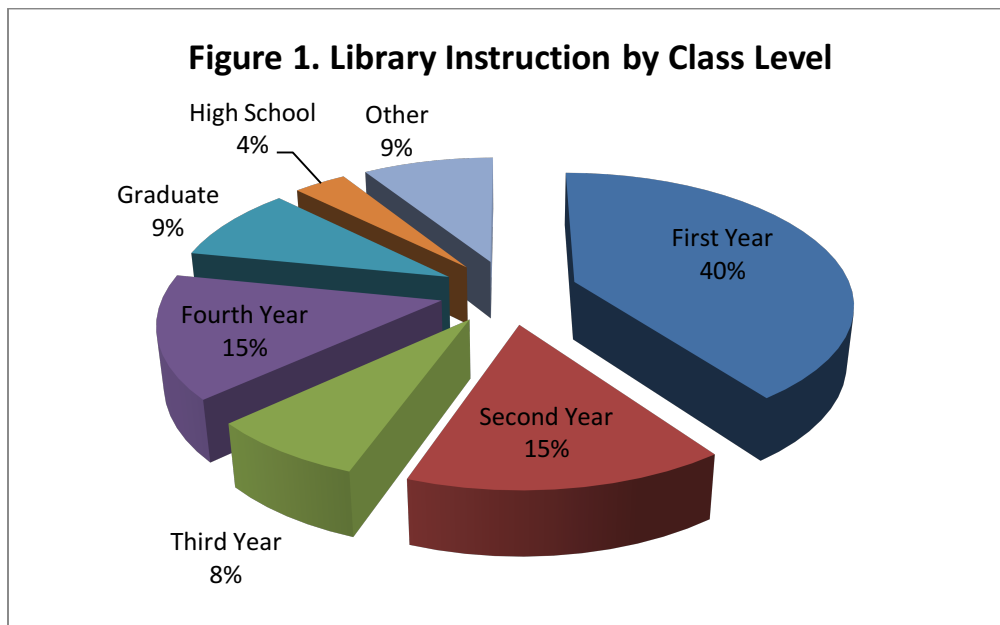
	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Reference Transactions	43,717	42,616	44,259	33,899	24,789	27,851
Virtual Reference	1,387	1,756	1,291	1,979	999	733
Web Site Visits	1,029,568	903,490	732,619	507,416	515,081	514,781
LibGuide Usage	37,770	221,710	274,464	333,519	302,186	328,647
A-Z hits removed		107,502	127,020	164,635	132,076	136,058

Credit Classes

- ENST 201, Environmental Information Resources, 3 credits, Co-taught: Professors Daniel T. Spencer and Barry Brown, Fall 2014; and Professors Vicki Watson and Barry Brown, Spring 2015.
- LSCI 200, Research Strategies, 1 credit, Fall 2014, Spring 2015, Professor Samantha Hines.
- LIT 500, Introduction to Graduate Research, 3 credits, Fall 2014, Co-taught: Professors Nancy Cook and Sue Samson.

Curriculum-integrated Classes and Workshops

During FY2015, 469 classes were taught or facilitated by teaching librarians. A total of 13,527* students attended these classes. Students were taught in classes across the disciplines and at all levels of undergraduate and graduate instruction (Figure 1).



* Student count includes the possibility for individuals to be counted more than once.

Table 2. Aggregated class data includes total number of classes and students, and subsets of first-year experience, undergraduate, graduate, high school, and specialized outreach programs.

Classes and Students	2010	2011	2012	2013	2014	2015
Total Class Count	440	435	428	452	522	469
Total Student Count*	9,960	10,073	9,081	8,750	10,665	13,527
First-year Experience Classes	196	185	169	134	149	154
First-year Experience Students	4,408	3,969	3,710	2,792	3,206	3,116
Undergraduate Classes (not first year)	384	377	361	204	241	177
Undergraduate Students (not first year)	8,769	8,488	8,024	4,006	5,258	7,901
Graduate Classes	27	30	37	29	40	44
Graduate Students	509	958	441	328	603	700
High School Classes	23	18	17	18	16	17
High School Students	542	418	356	354	312	235
Workshops/ English Language Institute/ Bridges to Baccalaureate/ Outreach	6	7	1	62	76	173
Workshops, etc. Attendance	140	123	25	1167	1336	5,221
Events and Exhibits						61
Event Attendance						3,001

*Student count includes the possibility for individuals to be counted more than once.

Instruction Assessment

Integral to the Library Instruction Program are multiple opportunities for library teaching faculty to solicit feedback on the effectiveness of their curriculum-integrated instruction. The aggregated data below represents randomly selected student feedback gathered throughout the year. Librarians are encouraged to use their individual feedback information as part of their teaching portfolios to further document their intent to improve instruction based on student need.

[Online instruction assessment options](#) are made available to all teaching faculty. These options include Student Feedback, Instructor Feedback, and Learning Outcomes for each level of instruction that map to the library's information literacy rubric. The aggregated results of this year's instruction assessments from the Student Feedback forms support a very successful level of instruction (Table 3).

In all categories, the effectiveness of the sessions has been of a very high caliber. Student feedback identified the instruction to be very effective or effective 94.1%, 90.8%, and 93.7% consecutively in the three tabulated questions. Responses to the open-ended questions support these percentages with individually stated outcomes.

Table 3. Student Feedback Statistics 2014-2015

Question 4: The use of examples & illustrations was:					
Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
47.6%	46.5%	4.8%	0.7%	0.3%	100%
N=129	N=126	N=13	N= 2	N=1	N=271
Question 5: The opportunities for hands-on practice were:					
Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
49.8%	41.0%	8.4%	0.4%	0.4%	100%
N=135	N=111	N=23	N=1	N=1	N=271
Question 6: Overall, the session was:					

Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
51.3%	42.4%	4.8%	1.1%	0.4%	100%
N=139	N=115	N=13	N=3	N=1	N=271

Randomly selected responses to two open-ended questions.

- How might you apply what you learned in this session to your assignment?
- I will continue to use these research tools for the rest of my assignments in this class and others.
- I better understand how to use the databases for my research projects.
- Thanks to this session, I will now be able to cite sources for papers much more easily and efficiently. Also, I now am better capable of navigating the library's webpage and accessing useful sources.
- in many aspect of the pharmacy DI class for papers and all other questions to be answered
- Using flow looks convenient
- I would use the information I learned about research guides to formulate a research paper.
- It will be useful to find books and articles for my paper due in this class.
- I'll use it to research my topic and formulate my speech/ reference sheet
- I can use what I've learned to start researching more effectively and to locate resources in the library to put to use.
- How to use the flow website to create a bibliography
- PubMed makes a lot more sense now
- I can now keep my research well organized.
- I will be able to apply what I learned here very easily to my business research project. The census reports will be very useful for me.

In your research, what might you do differently based on what you learned in this session?

- Find my resources
- I can find more respected sources for research purposes
- I won't spend so much time looking through 1000 + search results.
- I will branch out into different subject searches and different mediums- Ebscohost, Project Muse, J-store, etc.- more focused searches.
- Using the articles and flow will help with the bibliography so I won't have to spend as much time.
- Explained very simply, will use in the future! Thank you!
- use quotations
- I'm going to search a little deeper at the validity of my sources.
- I will use different search engines such as JSTOR, WorldCat, ProjectMUSE, etc.
- I would use the PubMed research base.
- Use flow for referencing
- I will be able to narrow down my searches in a proper and concise way.
- Use the information provided and be able to better access information.
- Now I am more likely to use reliable websites, since I have sources to use such as Ebsco, and various others. In the future, my bibliographies will be much more professional looking and be without as many errors as they're used to.
- Use quotation to narrow down my research.

Learning Outcomes

A major focus of assessment this year was based on a study completed and published by: Samson, Sue. 2014. Usage of E-resources: Virtual Value of Demographics. *Journal of Academic Librarianship*, 40 (6): 620–625. The study was designed among other goals to determine if a correlation exists between use of library e-resources and student attainment as defined by grade point average (GPA). The major findings statistically confirmed this correlation:

- A statistically significant relationship was established between GPA and the number of times students use electronic library e-resources at each stage of their academic careers.
- Students are using library e-resources at a higher than expected rate.
- Full, associate and assistant professors are using electronic library e-resources at numbers at a higher than expected rate.
- Full professors are using library e-resources at the highest rate among faculty. This is an important finding that provides evidence of the value faculty place on accessing electronic library resources.

While causal absolutes were beyond the scope of this study, students and faculty are using library e-resources beyond their statistical expectation. This documentation supports the growth of this portion of the collection, underscores the value of library resources to the institutional mission, and supports the importance of information literacy instruction and its integration into the curriculum.

C. Library Instruction Group Progress Report FY 2016

Prepared by: Sue Samson, Professor, Library Instruction Coordinator

Partnering for Student Success

- Information literacy instruction is integrated into the curriculum of select first-year required courses and is facilitated by the Undergraduate Services Librarian.
 - During AY2016, 167 classes were taught to 3,570 students through a carefully crafted information literacy curricula embedded in College Writing (WRIT 101), Introduction to Public Speaking (COMX 111), and Global Leadership Initiative seminars.
- Collaborative work with the Honors College and the UM Conference of Undergraduate Research provides multiple opportunities to build information literacy instruction as a partner to student success.
- Library faculty partner with service-learning classes, Office of Student Services, Disability Student Services, TRIO Student Support Services, the V.E.T.S. Office, Association of Students of the University of Montana, and high school research classes in tandem with New Student Services among others.

Education for the Global Century

- Library faculty partner with UM faculty on sabbaticals and research assignments around the world to provide online access to Mansfield Library resources.
- Library faculty collaborate with the instructors of Global Leadership Initiative seminars to imbed information literacy into their curriculum.
- Library faculty coordinate orientation activities with the Global Engagement Office and International Students and Scholars.
- Humphrey Scholars and other groups of foreign visitors are invited into the Mansfield Library for introductory tours and in-depth research assistance.
- A [research guide](#) assists UM students and faculty studying abroad by highlighting contact information and information resource access that is readily available through online connections to the Mansfield Library from anywhere in the world.

Discovery and Creativity to Serve Montana and the World

- Online resources have been carefully selected and compiled by library faculty to serve the research needs of the University of Montana in an information-rich global environment.

Dynamic Learning Environment

- The [Information Literacy curriculum](#) is based on the *Framework for Information Literacy for Higher Education* published by the Association of College and Research Libraries (2015). Six frames define information literacy as the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.
- The Mansfield Library curriculum is offered through a continuum of services (Table 1):
 - in-person reference transactions,
 - virtual reference transactions,
 - web site research guides,
 - individual consultations,
 - curriculum-integrated classes,
 - credit classes both online and face-to-face, and
 - online tutorials.
- During AY2016, library faculty taught a total of 525 classes to 9,066 students across the curriculum through curriculum-integrated and credit classes and a series of workshops (Table 2).

- Library faculty and staff also created or sponsored 6 exhibits and offered 50 related events attended by 7,307 participants.
- Beyond the classroom, library faculty completed 21,672 in-person and 1,609 virtual reference transactions.
- Our web site was accessed 429,816 times; our research guides, designed and developed by library faculty to provide virtual research assistance, were accessed 67,259 times; and a new suite of online tutorials were accessed 722 times.

Planning-Assessment Continuum

- Assessment focused on two Information Literacy Dispositions identified for 200-level students. Details are provided in Appendix I.
 - Results indicate that the majority of students were able to compare identified sources using good evaluative knowledge, identifying differences of scholarly intent, publication type, and dates of publication.
- Integral to the Library Instruction Program are multiple opportunities for library teaching faculty to solicit feedback on the effectiveness of their curriculum-integrated instruction. Details are provided in Appendix II.
 - Librarians are encouraged to use their individual feedback information as part of their teaching portfolios to further document their intent to improve instruction based on student need.
 - In all categories, the effectiveness of the sessions has been of a very high caliber. Student feedback identified the instruction to be very effective or effective 94.2%, 89.2%, and 95.3% consecutively in the three tabulated questions. Responses to the open-ended questions support these percentages with individually stated outcomes.

Table 1. Overview of all instruction-related services and activities of the Information & Research Services Division.

Reference transaction data is extrapolated from an annual two-week collection period during October of each year. Virtual reference transactions, web site visits, research guide usage, and online tutorials are collected by internal software.

Service	Community Served	Number of Sessions
Reference In-person	21,672	21,672
Reference Virtual	1,609	1,609
Instruction	9,066	525
Research Guide Usage	67,259	67,259
Online Tutorials	722	722
Displays and Events	7,307	56
Outreach	2,564	101
Outreach High School Visits	231	16
Outreach Campus Units	1,034	57
Web Site Visits	429,816	429,816
TOTAL	541,280	521,833

Table 2. Mansfield Library instruction demographics.

Student Status	Enrollment	Number of Sessions	Percent of Total
First Year	4,335	205	47.8%
Second Year	1,511	73	16.7%
Third Year	1,004	45	11.1%

Fourth Year	1,391	104	15.3%
Graduate	687	31	7.6%
Workshops	138	67	1.5%
TOTAL	9,066*	525	100.0%

* Student count includes the possibility for individuals to be counted more than once.

Credit Classes

- LSCI 200, Research Strategies, 1 credit, Fall 2015, Spring 2016, Professor Adrienne Alger.
- LSCI 391, Who Owns Culture, 3-credits, Online, Fall 2015, Professor Tammy Ravas.
- LSCI 398, Internship, 2-credits, Spring 2016, Professor Megan Stark.
- LSCI 398, UM Press Internship, 2-credits, Fall 2015, Professor Megan Stark.
- ENST 201, Environmental Information Resources, 3 credits, Co-taught: Professors Daniel T. Spencer and Barry Brown, Fall 2015; and Professors Vicki Watson and Barry Brown, Spring 2016.

Appendix I. Mansfield Library Information Literacy Curriculum Learning Outcomes Assessment of 200-level Classes (2015-2016)

Compiled by: Sue Samson, Professor, Library Instruction Coordinator, June 2016

Context

Based on the [Mansfield Library Information Literacy curriculum](#), this assessment focuses on two Information Literacy Dispositions identified for 200-level students:

- Understand and explain why there is usually not “one” source that will meet all research needs.
- Recognize different information sources and explain the value and differences between them, including their scope, audience and intent (e.g., archival collections; government information; popular, trade, and scholarly publications).

These dispositions are based on a set of knowledge practices that reflect the six threshold concepts central to information literacy (Association of College and Research Libraries Framework for Information Literacy for Higher Education, 2015). At the 200-level, two knowledge practices are introduced to students that lead to the dispositions under review. They are:

- Manage research with keyword and subject searching; broaden and narrow search terms.
- Execute both keyword and subject searches; execute revised searches to refine results.

Methodology

Students who received 200-level information literacy instruction either as part of a credit class or as part of a curriculum-integrated research session were asked to complete an assessment. The assessments were made available at the end of the semester for credit classes and at the end of the class session for curriculum-integrated classes.

Students were asked to compare two articles. The articles were selected to represent evaluative criteria used to recognize different information sources and explain the value and differences between them. In credit classes, students were provided the full-text of the articles. In curriculum-integrated classes, students were provided the citations only. The analysis was based on keywords and grades. Keywords that reflect the information literacy dispositions expected from students were identified by library teaching faculty. These keywords were then compared to student responses to the assessments. In each case, the keywords were determined to be used accurately in the context of the assessment and then counted. Additional terminology used by students that accurately addressed the assessment questions were added to the keyword list and counted. Finally, each student response was given a grade based on a 4.0 scale with 4 high.

Assessment Tools

Credit Class Assessment: Scan through the two articles provided. Compare these two articles and describe any differences in authors, audiences, intent and scope. What are some ways in which the articles differ in credibility and the expertise of the authors? How would you use each of these in a scholarly paper?

- Senanayake, Ranil. "Sustainable Agriculture: Definitions and Parameters for Measurement." *Journal of Sustainable Agriculture* 1.4 (1991): 7-28.
- Murphy, Kate. "Farm-to-table Living Takes Root." *New York Times* 12 March 2014: D5.

Curriculum-integration Class Assessment: Based on a review of the information provided in the citations listed below, compare these articles in 2-4 sentences.

- Senanayake, Ranil. "Sustainable Agriculture: Definitions and Parameters for Measurement." *Journal of Sustainable Agriculture* 1.4 (1991): 7-28.
- Murphy, Kate. "Farm-to-table Living Takes Root." *New York Times* 12 March 2014: D5.

Analysis

A total of 60 students participated in the assessment. Of these, 17 were enrolled in one of two credit classes, and 43 were enrolled in three of ten curriculum-integrated classes. Three library teaching faculty participated in the assessment.

Keywords correctly used in four specific categories were tabulated to identify responses in which students compared two articles (Table 1). A list of keywords for both assessments is provided in Appendices I and II.

Students in both credit and curriculum-integrated classes used keywords that identified the category of Audience/Credibility most frequently for both articles. Variability between articles occurred for the next most identified categories but was the same for both credit and curriculum-integrated classes: Scope for the Murphy article and Intent for the Senanayake article. Author/Expertise was identified most frequently by credit class students who were given access to the full-text article that provided author information.

Table 1: Tabulation of student usage of keywords correctly used in each category and average grade for all students.

Category	Credit Class (N = 17)	Curriculum- integrated Class (N = 43)
Senanayake Article		
• Author/Expertise	10	2
• Audience/Credibility	28	43
• Intent	13	12
• Scope/Depth/Date	8	12
• Use	11	NA
Murphy Article		
• Author/Expertise	5	2
• Audience/Credibility	30	24
• Intent	6	8
• Scope/Depth/Date	14	13
• Use	8	NA
Comparative Terms		
• timely, timeliness, current, recent	7	10
• audience	3	3
• intent	1	1
• credibility	12	8

• scope, coverage, topic, content	12	14
• publication type, type of publication, source	15	15
• length, pages, depth	0	5
• access	0	0
Average Grade	3.2	2.9

Using comparative terms, students in both credit and curriculum-integrated classes identified publication type most frequently followed by scope. Credit class students then referred to credibility and curriculum-integrated students to timeliness which may well be influenced the amount of information given to them for the assessment.

A final assessment among students was based on individual grades. Each student response was graded on the inclusion of correct information provided about the 4 categories. Students who provided correct responses in all 4 categories received a 4, three categories a 3, etc. Grades were then averaged for each group with the credit class student average at 3.2 and curriculum-integrated student average at 2.9.

Results indicate that the majority of students were able to compare these two articles using good evaluative knowledge, identifying differences of scholarly intent, publication type, and dates of publication. Credit class students were also asked to indicate how they would use these articles in a scholarly paper. The majority of their responses reflected an understanding of the different publications and how they could be effectively integrated into their research.

Recommendations

Based on a review of responses, the assessment tool could be improved with more explicit instructions and with handouts of the articles. For example, several students in the curriculum-integrated classes simply compared the citation format rather than the information provided by the citations. Several credit class students indicated they had difficulty finding the articles in a timely way in order to compare them properly.

For the most part, students compared the articles in a way that indicated that they understood that different types of sources can address research needs and were able to explain the differences with terms that included credibility, scope, audience and intent. Library teaching faculty need to stress this information as they introduce students to the wide range of information available to them.

Online teaching tutorials are now available that support the instruction of evaluating sources and could be used by all library teaching faculty in advance of or as a complement to classroom instruction. It is further recommended that these tutorials be linked to all Research Guides so that students might discover them during their personal research.

Appendix 1. Credit Class Expected Keywords Related to Full-text Article Comparison.

Senanayake Article:

- Author/Expertise: credible author, credentials, faculty, professor, university
- Audience/Credibility: Professional audience, academic audience, scholarly, peer-reviewed, journal, research, study, accurate, professional
- Intent: sustainable agriculture, measures of sustainability
- Scope/Depth: Bibliography, references, citations, documented, data, charts, graphs, values, models
- Scope/Date: Date, 1991, timely, timeliness, old, dated
- Use: documentation, history, background, data, facts, concepts, defines, direct source, evidence-based, cite techniques

Murphy Article:

- Author/Expertise: Credible author, reporter, journalist, staff writer, writer
- Audience/Credibility: Newspaper, general population, reliable, popular, news, story, laypeople, accurate, New York Times, upbeat, less reliable, interviews
- Intent: Sustainability, information
- Scope/Depth: agrihoods, real estate, community, housing, land, farm, farmland, green space, open space, development, neighborhood, way of life, health, farm-to-table, Agritopia
- Scope/Date: date, 2014, timely, timeliness, current, recent, up-to-date
- Use: application, timeliness, current, implementation, benefit, engage reader, background information, example, cultural-based

Comparative Terms:

- timely, timeliness, current, recent
- audience
- intent
- credibility
- scope, coverage, topic, content
- publication type, type of publication, source
- length, pages, depth
- access

Appendix 2. Curriculum-integrated Class Expected Keywords Related to Citation-based Comparison.

Senanayake Article:

- Author/Expertise: scholarly
- Audience/Credibility: professional audience, scholarly, peer-reviewed, journal, research, study, scientific, magazine
- Intent: sustainable agriculture
- Scope/Depth: research, data, technical, evaluate, definition
- Scope/Date: date, 1991

Murphy Article:

- Author/Expertise: journalist, reporter
- Audience/Credibility: Newspaper, general population, reliable, popular, New York Times, magazine
- Intent: sustainability, farm-to-table
- Scope/Depth: news, story, not reliable, book, cookbook
- Scope/Date: date, 2014

Comparative terms:

- timely, timeliness, current, recent
- audience
- intent
- credibility
- scope, coverage, topic, content
- publication type, type of publication, source
- length, pages, depth
- access

Appendix II. Instruction Assessment

Integral to the Library Instruction Program are multiple opportunities for library teaching faculty to solicit feedback on the effectiveness of their curriculum-integrated instruction. The aggregated data below represents randomly selected student feedback gathered throughout the year. Librarians are encouraged to use their individual feedback information as part of their teaching portfolios to further document their intent to improve instruction based on student need.

[Online instruction assessment options](#) are made available to all teaching faculty. These options include Student Feedback, Instructor Feedback, and Learning Outcomes for each level of instruction that map to the library's information literacy rubric. The aggregated results of this year's instruction assessments from the Student Feedback forms support a very successful level of instruction (Table 1).

In all categories, the effectiveness of the sessions has been of a very high caliber. Student feedback identified the instruction to be very effective or effective 94.2%, 89.2%, and 95.3% consecutively in the three tabulated questions. Responses to the open-ended questions support these percentages with individually stated outcomes.

Table 3. Student Feedback Statistics 2014-2015

Question 4: The use of examples & illustrations was:					
Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
44.1%	50.1%	4.0%	0.8%	0.8%	100%
N=67	N=192	N=15	N= 3	N=3	N=379
Question 5: The opportunities for hands-on practice were:					
Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
46.2%	43.0%	9.1%	0.7%	0.4%	100%
N=176	N=164	N=35	N=3	N=1	N=381
Question 6: Overall, the session was:					
Very Effective	Effective	Neutral	Ineffective	Very Ineffective	Total
47.8%	47.5%	3.4%	0.3%	0.7%	100%
N=181	N=115	N=13	N=1	N=3	N=379

Randomly selected responses to two open-ended questions.

How might you apply what you learned in this session to your assignment?

- I will be able to do research more effectively and use less time searching.
- Searching newspapers for primary sources
- Going to use flow, nice seeing the other data bases
- I will apply what I learned in this session to my assignment by using the library databases to enhance my research for my informative speech.
- Researching more on my topic for the speech
- I will use what I learned in my session to my assignment by saving information onto Flow.
- I will use this information to collect information on my topic for discussion.
- Learning about flow was FANTASTIC!!!!
- I really loved learning about FLOW and have been using that to organize my thoughts and notes for my assignment.
- The pacing was a bit slow for me personally, but I was familiar with the material, it was a great beginner's pace.
- i can use the databases to find information on my topic.
- The use of PubMed and the Flow apps will be incredibly useful for future papers and research!

- Gathered a lot of resources to ultimately use on my paper, as well as knowledge in how to research more sources.
- I will most likely be using what i learned about RefWorks Flow and the research databases for most of my classes.
- I now know how to more properly navigate the search engines to more effectively search for articles.
- I found multiple databases that will help me with my topic.
- All the different research engines are going to play a key role in shortening the whole process.
- I will research many databases for the information i need to know.

In your research, what might you do differently based on what you learned in this session?

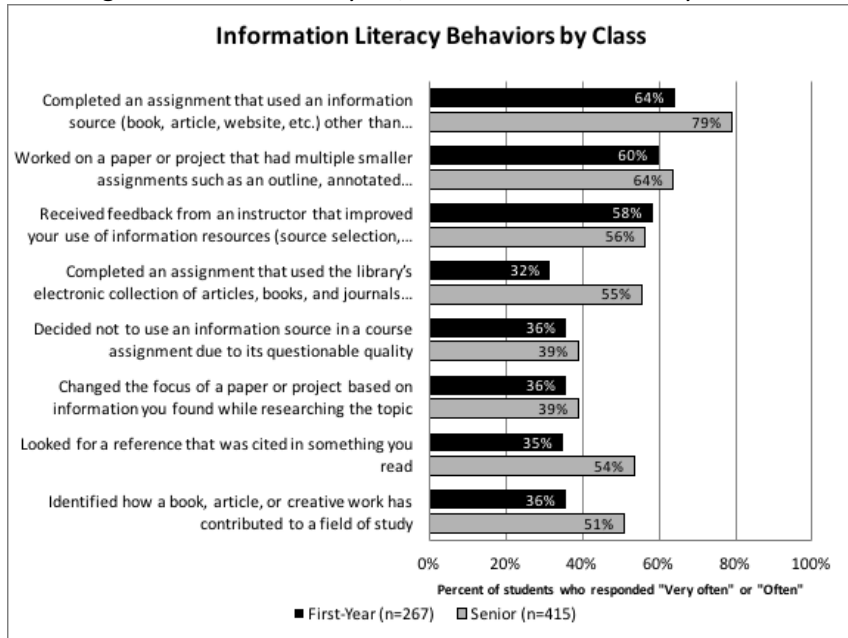
- Narrow down my searches and don't just use google
- Be a lot more organized in the body of my speech.
- I might use the library databases to find my information about my topic.
- I will use these data bases to complete research and find good sources for my speech
- Usually with research I simply type key words into google and choose the best/first articles that appear. With this new information I can now find information much easier and actually find useful and helpful information that is more relevant to my main topic(s).
- Move through the steps to access the site more thoroughly or write them out. I noticed people getting lost attempting to find the right database.
- I will make sure ha my articles are creditable and have good metadata.
- Definitely use the Boolean operators more. It makes it infinitely easier to sift through information.
- I can use credible sources to develop a better speech.
- I will be able to look at a different perspective of my topic that was not necessarily on my radar prior to this class.
- I will be much more inclined to not do a minimum amount of research because I will be more prepared to search efficiently.
- I now know how to double check to make sure that all my sources are cited properly and how to fnd more reliable sources
- I now know of more research sites than just google. It's nice that we have a good system in place for citations. All these tools will make research not just in this class but my future classes that much easier.
- Use the resources that the library research guide gives rather than google.
- I will try not to solely use google as much and I will use more honorable and scholarly search engines to do my research

D. NSSE Experiences with Information Literacy Topical Module Charts and Recommendations

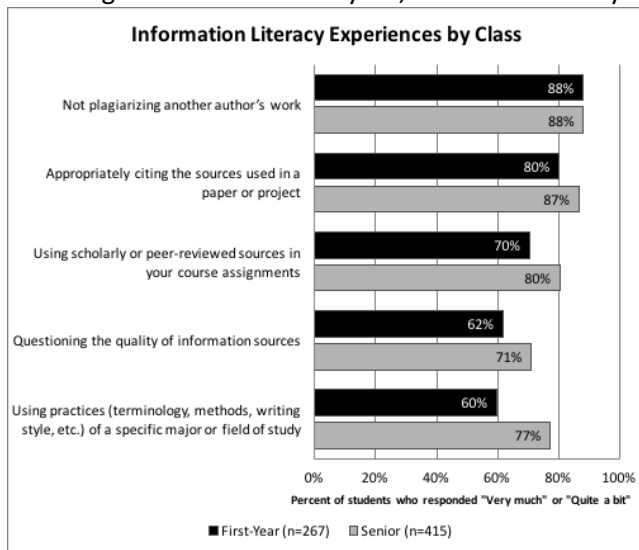
Prepared by Kate Zoellner and Sue Samson, October 2016

Charts

1. During the current school year, about how often have you done the following?



2. During the current school year, how much have your instructors emphasized the following?



Recommendations

Foster campus discussions on information literacy.

- Schedule conversations with campus stakeholders; create flyer snapshot of findings.
- Collaborate with the Writing Committee to review the integrated information literacy learning outcomes in first-year and upper-division writing approved courses.
- Provide joint faculty workshops with the Writing Center that focus on effectively integrating writing and research opportunities within the curriculum.

- Provide faculty workshops as part of the Faculty Development Office series to build assignments that incorporate information literacy.

Inform the ways in which librarians teach information literacy and how it is integrated into general education and major curriculum.

- Present, and host a conversation of, NSSE data and analysis to library teaching faculty.
- Hone and enhance first-year and upper-division instruction based on data findings.
- Enhance first-year instruction in the identification of research questions and their translation into keywords for searching electronic resources, critically evaluate information, recognize and assess the value of information resources, identify key stakeholders interested in the topic, and construct in-text citations and a bibliography.
- Enhance upper-division instruction by building instructional elements that focus on evaluation of sources and research discovery to hone the research topic.
- Encourage faculty to provide feedback directly on the quality of bibliographical sources.
- Provide pre- and post-tests as in-class opportunities to identify the instructional focus for students and to make them aware of their knowledge.
- Redesign the library instruction curriculum to focus teaching opportunities on upper-division writing approved courses and the creation of credit classes that meet general education approval.
- Using disciplinary data, librarians contact faculty who teach writing-approved upper-division classes and work collaboratively to integrate sequenced information literacy learning outcomes into the curriculum.
- Build a common upper-division curriculum with instructional elements that target NSSE findings and complement disciplinary differences.
- Librarians offer credit classes approved as general education and writing classes.

Delve deeper into NSSE data.

- Measure correlations between student information literacy behaviors and instructor experiences and other institutional experiences (e.g., higher order learning and writing survey questions) and demographics (e.g., full- and part-time status).
- Explore first-year students' understanding of the library's electronic collections.
- Explore the process students use to evaluate the quality of information sources.

E. Example Board of Regents Level II Program Proposal Library Response

DATE: September 29, 2015
TO: Shali Zhang, Dean of Libraries, The University of Montana
FROM: Barry Brown, Collection Development Group Chair
CC: Kate Zoellner, Liaison Librarian for College of Education & Human Sciences
RE: Ph.D. in Speech-Language Pathology proposal – Mansfield Library Response

RECOMMENDATION

The Department of Communicative Sciences and Disorders in the Phyllis J. Washington College of Education and Human Sciences seeks approval for the development of a Ph.D. Program in Speech-Language Pathology. The proposed Ph.D. program builds on the currently offered master's level training program in Speech-Language Pathology. Given the current level of collections in relevant disciplines at The University of Montana, I recommend library approval of this proposed new Ph.D. degree without additional resources. However, some additional discipline specific journal subscriptions and increased approval plan purchases would be beneficial for this program. Furthermore, cumulative additional new degree programs at UM without increased funding for the Mansfield Library budget or further reductions to the Mansfield Library budget could impact the ability to adequately support this new degree program. Particularly given its research focus. It is recommended that the Mansfield Library be included in future grant funding models so that information resources and library services can continue to adequately support research needs and curricular requirements of this new major.

LIBRARY DESCRIPTION

The University of Montana libraries are teaching and research libraries that provide an array of information resources and services in support of the curricular and research programs of the University. These resources include traditional library collections and electronic access to a network of research databases, ejournal packages, electronic journal subscriptions, and a web-based library catalog. The Maureen and Mike Mansfield Library comprises the heart of UM's library system. Collections exceed 1.6 million bound volumes, including more than 298,000 electronic books, access to over 38,000 current, unique serials (print and electronic journals), an array of electronic databases, nearly 100,000 media, a federal government documents depository collection, and an archives and special collections. These collections are supplemented by an active interlibrary loan service through which the resources of other libraries are made available, free of charge, to students, staff, and faculty.

LIBRARY COLLECTIONS

The Mansfield Library (including the College of Technology Missoula campus) has an acquisitions budget of over 4.2 million dollars. The acquisitions budget has decreased over the last four years. The Mansfield Library strives to maintain a balance between monograph/media and journal and database acquisitions. The Mansfield Library supplements the acquisitions budget with gifts and endowments and collaborative campus funding. The Mansfield Library has greatly increased journal holdings over the last decade through collaborative, consortial group purchases, while also increasing monograph and media purchases and ensuring rapid and comprehensive acquisitions through an Approval Book Plan.

See the [Collection Development Policy](#) for more information.

Collection Assessment Criteria:

- A. Description of New Program and Related Programs at UM and Other Universities: The Department of Communicative Sciences and Disorders in the Phyllis J. Washington College of Education and Human Sciences seeks approval for the development of a Ph.D. Program in Speech-Language Pathology. The department currently offers master's level training program in Speech-Language Pathology. The department states that at present, the resources at the University of Montana are sufficient to meet the needs of the proposed program. The University of Utah also offers a Speech Language Pathology Ph.D.

- B. Journals: Based on a subject category browse of Journal Titles the Library has access to 8 journals with "speech pathology" contained in their title; 20 journals with "audiology" contained in their title; 23 journals with "speech language" contained in their title; 8,989 journals categorized as relevant to Health Sciences; and within Health Sciences 2,163 journals categorized as related to Clinical Health; 301 journals categorized as relevant to Pathology; and 307 journals categorized as related to Pediatrics. Note that the numbers represented here are not unique, in that there is likely overlap of journals in multiple subject areas.
- C. Quality of Core Journals: According to Journal Citation Reports (JCR 2014), and use of Impact Factor to determine the top journals for each discipline, the Mansfield Library has current access to 65% (13 out of 20) of the top 20 journals in Audiology & Speech Language Pathology. Top journals for which UM does not have access to current issues include: *Augmentative and Alternative Communication* (ASHA); *International Journal of Audiology* (Taylor and Francis); *Audiology and Neurotology* (Karger); *Journal of the American Academy of Audiology*; *Journal of the Acoustical Society of America* (AIP); *International Journal of Speech-Language Pathology*; and *Logopedics, Phoniatrics, Vocology*. In comparison, the University of Utah library provides access to 75% (15 out of 20) of the top journals in Audiology & Speech Language Pathology. A related subject heading in JCR for audiology journals is "rehabilitation" and the Mansfield Library has current access to 87% (35 of the 40) of the top 40 journals in Rehabilitation.
- D. Databases: Relevant databases currently available include: Academic Search Complete; ASHA Archive; CINAHL Plus Fulltext; Cochrane Library; ERIC; Journals@Ovid Fulltext; Linguistics and Language Behavior Abstracts; ProQuest Dissertations Database; PsychInfo; PubMed; R2 Digital Health Sciences Library; SAGE Online Journals (including backfiles); ScienceDirect (including backfiles); Springer Ebooks; Springer Ejournal (including backfiles); Web of Science; Wiley Ejournal; and WorldCat. Relevant discipline specific databases not currently available include: ComDisDome (Proquest); EMBASE; Linguistics Abstracts; Nature Ejournal backfile; and Wiley Ejournal backfiles.
- E. Books and Media: A keyword phrase search of "speech pathology" in the Search Library Resources discovery box finds 611 results for books, 70 results for electronic books, and 29 results for media (Audio Visual) in the Mansfield Library collection. Limiting those results to the last five years (2009 to the present) finds 223 items available. A similar search of "language pathology" finds 139 items available (2009 to the present). A comparison of YBP GOBI results shows approval book purchases, for the subject area of Speech and Hearing Impairment over the last 12 months, of: 15 for University of Montana and 18 for University of Utah. Additionally, the Mansfield Library is a Regional Federal Depository library with a comprehensive collection of U.S. government documents; the library also has an Archives and Special Collections unit with archival and manuscript holdings related to the cultural, environmental, and legislative history of Western Montana.
- F. Interlibrary Loan: Interlibrary loan supplements the collection and is free of charge to UM faculty, students, and staff. The Mansfield Library is a net lender. During Fiscal Year 2015 the Mansfield Library borrowed over 8,000 books and articles for UM faculty, students, and staff and lent over 16,000 books and articles for users at other libraries.

LIBRARY SERVICES

Core library services available to faculty, students, and staff associated with The University of Montana are summarized on the library's webpage:

- [Faculty and Staff Services](#)
- [Student Services](#)
- [Distance Education Services](#)
- [Information Literacy Curriculum](#)

Note that with new academic programs and increasing numbers of students and faculty, additional demands and resource needs will be placed across the scope of library services.