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Information Competence at UCLA:
Report of a Survey Project

Spring 2001

UCLA Library Instructional Services Advisory Committee
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Executive Summary

Librarians have long had anecdotal evidence that undergraduates do not possess adequate information skills for some of the coursework they are required to complete. To obtain an objective measure of their information competence, the UCLA Library's Instructional Services Advisory Committee (ISAC) conducted an assessment project. The committee created a list of competencies and a survey instrument, which was administered to a sample of 453 undergraduates in Spring 1999. This report explains the research problem and methodology, explores the findings and conclusions of the research project, and makes recommendations based on the data.

The main goal of the project was to identify ways to make library instruction more effective at UCLA. A practical objective was to obtain data to use in discussions with faculty about students' information and research skills, the impact of those abilities on students' coursework, and the potential of library instruction to improve them.

The instrument ISAC created sought to measure how skillful or knowledgeable students were in general with library resources, online searching, and information-seeking concepts, rather than to assess the efficacy of existing library instructional programs. The instrument was vetted in several ways over the course of the project and was administered in a non-course-related classroom setting to a broad sample of students. A data analyst from the Institute for Social Science Research (ISSR) oversaw the coding of data and performed several types of analysis on it to test hypotheses and verify significant findings.

Results indicate many gaps in students' understanding of resources and methods, which are discussed in detail in the report. The general level of information literacy as assessed by the instrument was low. Statistically significant findings based on an analysis of average scores and student demographics are:
- Students who reported frequent use of library resources scored higher on the test.
- Seniors scored higher than each of the other classes taken separately or combined. While seniors scored highest, class level was otherwise not a significant factor; that is, there was no difference between the mean scores of freshmen, sophomores, and juniors.
- Students whose majors are in the humanities scored higher than students majoring either in the social sciences or sciences.

The results did not allow ISAC to identify causes for these findings, although a number of hypotheses are possible. It is not clear whether or in what way the statistically significant results are substantively significant.

The mean scores of students who reported having had a high quantity of library instruction or tours were also analyzed. Although these students did not score significantly higher on the test, two thirds of them had their library classes or tours in high school; the number who had these sessions in college was so small that the result for this variable is not particularly meaningful.

Based on the results of this project and the collective experience of committee members, ISAC has made several recommendations aimed at the goal of increasing information competence. Library staff should share the key findings with faculty and create a dialogue about the information competence of their students. This might include discovering how faculty view students' information skills and exploring the effect of increased library use on information competence. Library staff should work with faculty and academic departments to define, adopt, and promote sets of basic and discipline- or major-oriented competencies; these should be used to develop library instruction that is part of a curriculum-integrated information literacy program. The Library should take a more systematic approach to instructional initiatives – which may include Web-based instruction, course-integrated instruction, courses, and remote learning mechanisms. Areas for further research and recommendations about the use of the instrument are also included in the report.

TableofConte nts

Tables

4

Acknowledgments

I. Introduction

A. The Information Need

Based on information from instructors and from their own experiences, librarians have long had anecdotal evidence that undergraduates do not possess adequate information skills for some of the coursework they are required to complete, let alone for lifelong learning. UCLA's approach to teaching undergraduates these basic skills through library instruction has been vigorous but decentralized, and basic information literacy goals for undergraduates do not currently exist. Therefore, to obtain hard data on the information competencies of UCLA undergraduates that will further a campus-wide discussion regarding establishing and implementing basic information literacy goals for all undergraduates, the UCLA Library's Instructional Services Advisory Committee (ISAC) embarked on an assessment project supported by the Library administration.

B. Literature Review

There are many articles on information literacy, lists of competencies, and descriptions of information literacy programs and courses. However, there is a paucity of actual assessment tools that measure student competencies rather than evaluate library instruction. For example, pre-test/post-test measures assess the efficacy of particular library instruction sessions but do not test general information competence, and user surveys rating satisfaction and describing library use do not provide an objective skills assessment. Thus, one of the problems to be addressed in this study was the creation of an assessment tool.

To create a tool, the committee first had to decide on a list of competencies. Although this study was completed before the publication of the ACRL Information Literacy Competency Standards for Higher Education,[1] the list of competencies it measures was derived from a review of articulations by colleagues in the profession as well as from discussions among ISAC members, who represented libraries across campus. The competence lists in print and on academic library Websites are too numerous to cite; however, several Websites from the California State University libraries are worth noting because of the enormous amount of information literacy work they have done here in California.[2] Lorie Roth describes information competence assessment initiatives at several universities in California, including a study at California State University, San Marcos, to measure student attainment in information literacy over a four-year period.[3] Susan Carol Curzon describes the California State University Information Competence Skills Assessment, a telephone survey in

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

[2] California State University Information Competence Work Group, Information Competence in the CSU: A Report, 1995 <http://www.calstate.edu/tier3/itpa/Docs/html/info_comp_report.html> (September 14, 2000); California State University Information Competence Work Group, Information Competence, 2000 <http://library.csun.edu/susan.curzon/infocmp.html> (September 14, 2000); California State University Information Competence Assessment Project, 2000 <http://www.csupomona. edu/~kkdunn/ictaskforce.html> (September 14, 2000); California State University Fullerton Pollak Library, Assessing Information Competence Across Disciplines, 2000 <http://users.library.fullerton.edu/infocomp/index.htm> (September 14, 2000).

[3] Lorie Roth, "Educating the Cut and Paste Generation," Library Journal 124 (November 1, 1999): 42-44.

which3,000studentsrespondedtohypotheticalresearchandinformation   -seekingscenarios. [4]; the resultsofthissurveyhavenotyetbeenpublished.

Otheracademiclibrarieshaveundertakenr   elatedassessmentsandhavedevelopedtheirown instruments,whichwereofinterest.Anefforttocomparestudentself   -assessmentofinformation skillswithobjectiveevaluationwasdescribedbyGreer,Weston,andAlm. [5] TwosurveysatJohns HopkinsUniver sitycomparedfreshmenandupperclassmenatthatinstitution,focusingfirston evaluatingbasiclibraryskillsandthenaddingsomeadvancedskills. [6] TheIndianaUniversity BloomingtonLibrariesAssessmentPlanforInformationLiteracy,whilenotofferin   gasingle assessmenttool,describesaplanforassessinginformationliteracyandarticulatesspecific objectivesandpossiblemeasurementtechniquesforeachinformationliteracygoal. [7] KentState librariansreportonapretestusedtoassessbasiclib   raryskillsprimarilyoffreshmenenrolledinan EnglishIIcourse. [8] TheTeachingLibraryatUniversityofCalifornia,Berkeley,firstsurveyed graduatingseniorsinthepoliticalscienceandsociologydepartmentsinMarch   -May1994andhas repeatedthesu rveywithstudentsintheseandotherdisciplines [9];PatMaughaniscompletingan articlesummarizingtheresults.

C. ObjectivesoftheStudy

1. TogainanunderstandingofinformationcompetenciesofundergraduatesatUCLA. [10]

2. Toimprovetheeffectivenessofl   ibraryinstructionatUCLAbymakingrecommendationsto Library'sPublicServicesCouncilbasedonanalysisofthedata. [11]

3. ToprovideUCLAlibrarianswithdatatheycanuseindiscussionswithfacultyaboutstudents' informationliteracyandlibraryinstru   ction.

Thecommitteehopedthatthe   results wouldprovideanimpetusforcampus   -widediscussionson informationliteracyneedsandgoals.Afterrealizingthattheinformationliteracyliterature

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[4] SusanCarolCurzon,"DevelopingaProgramofInformationLiteracy," College&ResearchLibrariesNews   61(June2000): 483+.

[5] ArleneGreer,LeeWeston,andMaryAlm,"AssessmentofLearningOutcomes:AMeasureofProgressinLibraryLi   teracy," CollegeandResearchLibraries   52 (November1991) :549 -57.

[6] JillCoupe , "UndergraduateLibrarySkills:TwoSurveysatJohnsHopkinsUniversity," ResearchStrategies 11(Fall1993): 188-201.

[7] IndianaUniversityBloomingtonLibrariesAssessmentPl   anningCommittee,"AnAssessmentPlanforInformationLiteracy,"May 1,1996,< http://www.indiana.edu/~libinstr/Information_Literacy/assessment.html>(September 19, 2000).

[8] LilithR.Kunkel,SusanM.Weaver,andKimN.Cook,"WhatDoTheyKnow?:AnAssessmentofUndergraduateLibrarySkills," TheJournalofAcademicLibrarianship   22(November1996): 430-34.

[9] PatDavittMaughan,,"InformationLiteracySurvey,"University   ofCalifornia,BerkeleyLibrary,1995,<   www.lib.berkeley. edu/TeachingLib/Survey.html>(September 19, 2000).

[10] Anearlierversionofthefirstgoalreflectedthecommittee'soriginaldesir   etocomparethecompetenceoffreshmenwiththatof seniors.Thesurveydesignwaslaterchangedforlogisticalreasons,andthefirstgoalwasalteredtoreflectthatchangebyreferring simplyto"undergraduates."

[11] Thesecondgoalreflectsthecommitt   ee'shopeattheproject'soutsetthatthestudywouldgivelibrarystaffinformationthatcould beusedtohelpimprovelibraryinstruction.Innowaydidthecommitteeviewthestudyortheinstrumentascapableofmeasuring theeffectivenessoflibrary   instructionatUCLA.

containedsolittleonassessmentofcompetence,ISACalso determinedthatthisstudywould contributetotheunderstandingofinformationliteracyassessment.

D. WhatWasTested

Theoverallgoalwastoassesswhetherexposuretothelibrary –overthecourseofanunder - graduate'syearsatUCLA,throughthere quirementsofamajor,throughlibraryinstruction,or simplyduetoahigherrateoflibraryuse –hasanyimpactatallonstudentinformationcompetence. Severalindicatorsofexposurewereexplored,and *hypotheses*werethat:

    (a) Thehighertheclasslevel ,thehigherthestudents'scoresontheInformation CompetenciesSurveywillbe.

    (b) Studentsindisciplinesthatrequireindependentlibraryresearchwillscorehigherthan studentsindisciplinesthatdonot.

    (c) Studentswhovisitthelibraryfrequently(at leastonceaweek)touseitsresourceswill scorehigherthanstudentswhodonotvisitthelibraryfrequently.

    (d) Themorelibraryinstructionstudentshavehad,thehighertheywillscore.

Thecommitteehypothesizedinthebroadersensebutdidnotvent urehypotheseson particularcompetencies(e.g.,whetherstudentswerecompetentatonlinesearchingwith Booleanoperators,whethertheyknowwhenitisappropriatetomakeafootnote,etc.). However,theprojectdidproduceinformationonparticularcom petencies,whichare reportedinsectionIV.F.

Thecommitteedefinedthefollowing *informationcompetencies* thatallUCLAgraduatingseniors shouldpossess.Thenumbereditemsonthelistarethecompetencies;thelettereditemsarethe specificbehavior sandskillsastudentneedstoemploy *effectively*inordertoachievethat competence.

InformationcompetenceofundergraduatestudentsatUCLAis **definedbytheabilityto** *:*

    1) Definetheresearchtopicandtheinformationneed
        a) statearesearchquestion, problem,orissue
        b) understandtheneedtoidentifyanddefinerelevantterminologyandkeywordsand theconceptofcontrolledvocabulary
        c) understandwhattypesofmaterialsexist(includingbooks,journals,Internet, governmentdocuments,fieldwork,datasets ,media,primaryvs.secondarysources, popularvs.scholarly,etc.)andwhichareneededfortheresearch
        d) determinewhowouldbetheproducersandprovidersoftheinformationrequiredfor theresearch
        e) understandthelimitationsofinformationavailabilit y

2) *Developandimplementaneffectivesearchstrategy/processappropriateforan informationneed*
   a) *understandwhattypesofreferencesourcesexist(specializedencyclopedias,indexes, abstracts,databases,bibliographies,librarycatalogs,searchengines,   etc.)andthe purposeofeach*
   b) *identifyappropriatereferencesourcesforagivenresearchquestionorinformation need*
   c) *selectappropriatesubjectheadings,keywords,andBooleansearchstrategies*
   d) *determinehowtoaccessandusethereferencesources*

3) *Locateandretrieveinformation*
   a) *accessandeffectivelyusethelibrary'sonlinecatalogsandindexesandanInternet browser*
   b) *accuratelyread,interpret,andwritecitations*
   c) *downloadoremailcitationsfromcomputer   -basedsystems*
   d) *understandkeyelementsofc   allnumbersandURLsandbeabletousethemtolocate librarymaterialsandWebsites*

4) *Evaluatetheinformationandthesearchstrategy*
   a) *checkthereliability,authority,level,accuracy,andtimelinessofinformation sources,includingreferencesources,   books,articles,Websites,massmedia,etc.*
   b) *determinewhethertheinformationretrievedisrelevantandsufficientforthe researchquestionandiffurthersourcesareneeded*

5) *Organizeandsynthesizeinformation*
   a) *criticallyuseandintegrateinformationfr   omavarietyofsourcesappropriatetothe researchquestion*
   b) *understandtheneedtocitethesourceofinformation*
   c) *compileabibliographyandcreatefootnotes*

II.   DesignoftheStudy

A.   TheSample

Thegoalwastoadministerthequestionnaireto500undergrad   uatestudents;thefinalsamplesize was453.TheRegistrar'ssamplewasrandomizedbysystematicsamplingsoeveryundergraduate hadanequalchanceofbeingpicked.Theresponserate(calculatedasthenumberofstudentswho tookthetestdividedbyth   enumberwhoreceivedtheemail)was14.3%.Itwasassumedthatthe numberofstudentswhoactuallyopenedtheemailoropeneditintimeforoneofthetestdates wouldbelowerthanthenumberwhoreceivedtheemail.Alowernumberinthedenominator wouldhaveyieldedahigherresponserate,butthereisnowaytoknowhowmanyopenedthe email.Howtoincreasetheresponserateremainselusive.

ThedataaboutthesampleinTable1arederivedfromthedemographicportionoftheinstrument. Thedata aboutUCLAundergraduatesasawholearederivedfromthe UCLACampusProfilefor 2000,[12]whichgivesdatafor1999.Withthelowresponserate,itisnotpossibletosaythissample wasrepresentativeoftheentireUCLAundergraduatepopulation,eventho ughthesampling techniquewasrandomized.Still,thepercentagesforsexandmajorarefairlysimilar.

Table1:CharacteristicsoftheSampleandofUCLAUndergraduatesasaWhole

	Sample	UCLA Undergraduates
Sex		
Female	61%	55%
Male	39%	45%
GPA[13]	3.1	N/A
Class		
Freshman	28%	15%
Sophomore	24%	20%
Junior	18%	29%
Senior	30%	37%
Major		
SocialSciences	36%	28%
Sciences	34%	41%
Humanities	8%	10%
Arts	4%	3%
Unknownor Undeclared	18%	16%

B. TestAdministra tion

Beforeadministeringthetest,thecommitteefiledforan"ExemptionfromHumanSubject ProtectionCommitteeReview"throughtheUCLAOfficeforProtectionofResearchSubjects.The exemptionwasgrantedonApril23,1999(UCLAExempt#99   -091).Thi sprocessisrequiredofall campusresearchprojectsusinghumansubjects.

Participationwassolicitedandthetestwasadministeredasfollows:

- TheRegistrarsentanemailwrittenbythecommitteetosolicitparticipationtoasystematic sampleof1500 undergraduatesonMay3,1999(seeAppendixD);themessageoffered recipientsanincentiveof$10tocometoalocationoncampusandcompletethequestionnaire.

[12]UCLAOfficeofAcademicPlanningandBudget,"StudentData"in   UCLACampusProfilefor2000   ,2000.Tablesused:"Fall 1999ActualEnrollmentbySexandLevel,""EnrollmentbySchoolandCollege,"and"1998   -993 -QuarterAverageEnr ollmentBy Department,ByLevelofStudent."<http://www.apb.ucla.edu/prof00.htm>(July25,2000)

[13]TheaverageGPAgivenforthesampleistheaverageforthe439studentswhosuppliedthisinformation.AverageGPAforall UCLAundergraduateswasnotav   ailable.

- OnMay10theemailwassentagaintothese1500plusanother2000students.Ofthe3500 studentsemailed,320had"undeliverable"emailboxes,whichbringstheactualnumberto3180. Thereisnowaytoknowhowmanyofthesestudentsactuallyopenedtheemail.

- Studentshadachoiceofdatesandcouldcomeonadrop -inbasistotheroomwheret hetestwas administeredonMay5,6,12,and13.RoomswereusedinAckermanUnionandKerckhoff Hall,centrallylocated,non -librarybuildings.

- Oneofthecommitteememberslookedatthestudent'sBruinCardandcheckedhis/hernameoff thelist(provid edbytheRegistrar)ofthosewhohadreceivedtheemail.Thiswastoverifythe studentwasamongthosewhodidreceivetheemail,andtomakesurenostudenttookthetest twice.TheRegistrar'slistswerelatershredded.

- Studentssatatdesksandtook about10 -20minutestofinishthetest.Uponreturningthe completedquestionnaire,eachstudentwasgivena$10billbyastaffmemberfromLibrary FinancialServices.

ISACspentagooddealoftimereviewingadvicefromvariousexpertsandreadingart iclesinorder tocometoadecisiononhowbesttoadministertheinstrument.Thecommitteeweighedthe advantages,disadvantages,andexpenseofmultiplemailingsoftheinstrumentwithandwithout telephonefollow -upandconsideredprivacyissuesrelat edtopostingitontheWeborsendingitvia email.Intheend,certainfactswereevident.Itisnotaninterestingorenjoyabletesttotake,it lackshumor,anditsolicitsnopersonalopinionsontopicsofconcerntostudents.Regardlessof howit wasadministered,withoutanincentive(andevenwithone)therewasconcernabout obtainingasampleofsufficientsize.Somecommitteemembersalsofeltthathavingthestudents takethetestinaclassroomsetting,wheretherewasnopossibilityofcon sultingothersorthe computertoanswerthequestions,wouldbeabettertestofwhattheyknewatthatmomentintime.

C.TypeofStudy

Thisstudyproduced"informationongroupsandphenomenathatalreadyexist"andcreatedno controlorcomparis ongroups.Itthereforehasa"descriptive,"orobservational,design. Specifically,itisa"crosssection"study,providingdescriptivedataatonefixedpointintime.[14] Participantswillnotberetestedatalaterdateasnocodingfortrackingthem wasbuiltin,aswould happeninacohortstudy.

D.Budget

TheLibraryadministrationsupportedtheproject;specifically,theassociateuniversitylibrariansfor publicservicesandforhumanresourcesallocatedthefundstocompleteit.Theamount ofmoney spentwas$9,566,brokendownbelow.Thisrepresentscashoutlaysandinnowayaccountsforthe amountofperson -hoursspentoverthethree -yearperiod.

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[14]ArleneFink, TheSurveyHandbook ,TheSurveyKit,v.1(ThousandOaks,CA:SagePublications,1995),25.

$3861   DataanalysisbyISSR
840   Roomrental
335   Photocopies
4530   Inc   entives
$9566   TOTAL

III.TheSurveyInstrument

A. Description

The25 -item,self -administeredquestionnaire(inAppendixA)consistsof:
- Elevendemographicquestionsdesignedprimarilytoascertainstudents'classlevelandmajor, theamountofprior   libraryinstructionstudentsreceived,andtheamountandextenttowhichthe studentsuselibrary(includingonline)resources
- Fourteenquestions(47variables)designedtotestoneormoreoftheinformationcompetencies listedinsectionI.D.

Theinstr umentdoesnottesttheeffectivenessofparticularlibraryinstructionsessionsorwhole programs,norisitasurveyofopinion.Itisatesttodiscoverhowskillfulorknowledgeable studentsaregenerallywithlibraryresources,onlinesearching,and   information-seekingconcepts. Forthisstudy,thetestwasadministeredonpaperinanon   -libraryclassroomsetting.Studentstook about10 -20minutestocompleteit.

B. TheProcessofCreatingtheInstrument

Focusingonthelistofcompetenciesandmemb   ers'knowledgeofundergraduateinformationneeds andbehaviors,thecommitteecreated,discussed,andrevisedthetestquestions.Eachquestionwas keyedtooneormoreofthecompetenciesonthelist.Adraftoftheinstrumentandthecompeten   - cieslistwasthensharedwithotherlibrariansinvariouslibraryunits,whowereaskedtokeythe questionstothecompetencies,iftheycould;theideawastoseeiftheirmatchesandthoseof committeememberswouldbethesame.Asaresultofthisvaluablee   xerciseandthesuggestionsit produced,somequestionswererevisedandchangesweremadeinsomeofthequestion   -competence matches.Theexercisealsogavethecommitteeabettersenseofboththecontentvalidityandface validityoftheinstrument.T   hisprocessoffront -linelibrarianscreatinganinstrumentandadditional librarianswithfresheyesprovidingfeedbackonhowwellthequestionstestedthecompetencies seemedtobethebestmethodatthecommittee'sdisposal.Theonlypublishedsurvey   thecommit - teereferredtoinanysignificantwayduringthisprocesswasfromJohnsHopkins(1993).   [15]

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[15] JillCoupe,"UndergraduateLibrarySkills:TwoSurveysatJohnsHopkinsUniversity,"   ResearchStrategies 11(Fall1993):188   - 201.

C. Vetting the Instrument

When a solid draft of the instrument was completed in February 1998, it was tested on a group of nine students who work in the Research Library's Access Services Department. Based on information from the test results and verbal feedback solicited through the process, several revisions were made to the instrument.

In October 1998 a more ambitious pilot test of the revised instrument was conducted on a convenience sample of three large lecture classes.[16] Blank tests were distributed to 683 students, which they were told to complete on their own time and return at the next class session; the instructor did not require the students to take the test, and 127 completed samples were returned. Although these samples were not scored, a question-by-question analysis was conducted to determine how many and what percentage of students got each question right, wrong, or partially correct. This enabled the committee to see which questions might be problematic. Based on the results and further refinement of the questions, some wording was changed and reformatting done to improve the test's look, content, and the location of instructions.

Finally, in April/May 2000 (well after the May 1999 study was completed), the instrument was sent by email to students in the library school, asking only second-year students to complete and return it either by email or to the YRL reference desk. No incentive was offered. From a pool of approximately 70 second-year students, 16 completed samples were returned (a response rate of 23%). The goal was not to improve the instrument, which had already been used to test undergraduates, but rather to compare the average scores of the undergraduates with those of a group of "expert" subjects, i.e., students expected to do well. The mean score of the library students (86.8%) was significantly higher than the mean score of the undergraduates tested (61.7%). This increased the committee's confidence in the study and provided a basis for comparison with which to characterize the undergraduate scores and answers.

IV. Summary of Major Findings

A. Library Use

Through analysis of variance it was possible to compare the mean score of students who had a high rate of library use[17] (N=188) with the mean score of students who had a low rate of library use (N=226). The average score of the high library use students (64.2%) was higher than the average score of the low library use students (59.7%), and the difference is statistically significant, that is, it was not due to chance, nor was it due to other factors (class or major). Since these scores appear fairly close, however, it is not certain that the difference indicates something meaningful.

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[16] The classes were GE 20A, Political Science 10, and Sociology 1.

[17] "High library use" was defined as using specific library resources such as online catalogs ORION and Melvyl, reference books, journals, books, reserve lists, the Web, etc., four or more times since fall quarter and visiting a library to use its resources at least once a week. The data came from variables 20-30 on the instrument.

Itisinterestingtolookatsomeofthespecificfindingswithinthelibraryusedata.Aslightly greaterdifferenceinscoresthantheoverallonewasseenbetweenthehighandlowusersof ORION,Melvyl,andjournalsandbooks.Thi   sisshowninTable2.

Table2:MeanScoresbyLevelofLibraryUse [17]

	N	MeanTestScore
LibraryUse(allvariables)		
High (4+)	188	64.2%
Low (0-3)	226	59.7%
ORIONUse		
High (4+)	199	64.7%
Low (0-3)	254	59.2%
MelvylU se		
High (4+)	141	65.9%
Low (0-3)	307	59.7%
Useofjournals,books		
High (4+)	148(jour) 167(books)	65%
Low (0-3)	303(jour) 284(books)	60%

B.   Class

Analysisofvarianceandt -testsindicatedthattheaveragescoreofs   eniors(66%)wasstatistically significantlyhigherthanthemeanscoresofanyoftheotherclasses.Thisfindingwasnotdueto chanceorotherfactors(majororlibraryuse).Therewasnosignificantdifferencebetweenthe meanscoresoffreshmen,sop   homores,orjuniors.Comparisonsweremadeclassbyclassaswellas betweeneachclassandeveryoneelse.Althoughseniorsscoredhigher,forthegrouptestedthere wasnotrendindicatingthehighertheclasslevelthehigherthescore.Fromthisdata   itisnot possibletotellwhetherthestatisticallysignificantsix   -percentage-point-differencebetweenseniors andtheothersissubstantive.

Table3:MeanScoresbyClass

Class	N	%ofSample	MeanTestScore
Freshman	124	28%	59.9%
Sophomore	109	24%	59.5%
Junior	82	18%	59.9%
Senior	137	30%	66%
Total	452	100%	61.7%

C.   Major

Therewere33majorsrepresentedbythe373studentswhoreportedmajors(80reportednomajor or"undeclared").The33majorswererecodedintofourmai   ngroupsbecausethereweretoofew studentsineachmajortomakecomparisonsmeaningful.Table1showsthatthestudentsinthe samplewerenotevenlydistributedbetweenthefourgroups,buttheyroughlycorrespondedto undergraduatesingeneralatUCL   A.Studentswhosemajorfellintheareaofthehumanitiesscored statisticallysignificantlyhigheronthetest(withameanof66.3%)thanstudentsinthesocial sciences(62%),arts(63.9%),andsciences(60.2%).Thisfindingwasnotduetochanceand   was independentofotherfactors(class,libraryuse).

However,againthedifferencesarenotgreatenoughtoconcludethatthereisasubstantivesigni   - ficancetothefinding.Fromthedataitisnotevidentwhetherthehypothesisthat"studentsin disciplinesthatrequireindependentlibraryresearchwillscorehigherthanstudentsindisciplines whichdonot"isvalid.Whilehumanitiesstudentsmaywelldomoreindependentlibraryresearch thansciencestudents,itisnotpossibletotellifthedi   fferenceshereareduetothis,norarethe differencesgreat.

Table4:MeanScoresbyMajorArea

MajorArea	N	%ofSample	MeanTestScore
Humanities	37	8%	66.3%
Arts	16	4%	63.9%
SocialSciences	164	36%	62%
Sciences	156	34%	60.2%
Unknown/Undeclared	80	18%	N/A

D.   LibraryInstruction

Thestudentswhoreportedhavinghadahighquantity   [18] oflibraryinstructionortoursanytimefrom highschoolthroughcollegedidnotscoresignificantlyhigheronthetest.However,almos   ttwo thirdsofthe52studentsinthe"high"grouphadtheirlibraryinstructionortoursinhighschool, wheremostoftheskillsandconceptstestedbythisinstrumentwouldprobablynothavebeen covered.Thenumberofstudentsinthe"high"groupwho   hadtheirlibraryinstructionincollege wassosmall(N=19,   [19]or4.2%ofthesample)thatitisimpossibletosaythatthisresultindicates anythingmeaningfulintheuniversitysetting.Table5showshowmanyandwhatpercentageof studentsfellintot   he"high"libraryinstructiongroup.

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[18]A"high"quantityoflibraryinstructionwasdefinedashavingtakenawholecourseinlibraryresearchmethodsand   resourcesor havinghadalibraryclassortourmorethanfivetimesinhighschoolorcollege.

[19]Fourteenofthe19reportedhavingtakenawholecourseinlibraryresearchmethods.Althoughresponsesdonotindicatewhether itwasatUCLA,anothercoll   ege,orinhighschool,these14aregroupedwiththefiveknowntohavehadtheirlibraryinstructionin college.

The very small number of students who had had more than five instruction sessions or tours at UCLA (N=3) is a reflection of the fact that library instruction at UCLA is not systematically infused into the curriculum. If library instruction were broadly integrated into courses and objectives for majors, it is likely more students would have been in the "high" library instruction group, and the survey results might have been informative regarding the relationship between library instruction and information competence; as it is, the small numbers do not allow any conclusions to be drawn. Section V.C. below on further research includes a suggestion on this.

Table 5: Students in the "High" Library Instruction Group

Variable	N	%ofSample
Whole course (v11)	14	3.1%
Over 5 at UCLA (v12)	3	0.7%
Over 5 at another college (v13)	2	0.4%
Over 5 in High School (v14)	33	7.3%
Total	52	11.5%

E.   Question Clusters

The test questions were grouped into f ive clusters corresponding to the five main information competencies. The data was analyzed to see how many students got all the questions correct in a single cluster in order to find out what percentage of students were knowledgeable enough to answer cor rectly all questions about a *set* of skills as opposed to individual skills. Hardly any students succeeded in doing this. The fifth competence ("Organize and synthesize") was covered with only one test question, so the cluster approach was not meaningful for that competence. The highest number of students getting all correct in a given cluster (not counting competence five) was the eight students who got all three questions (eight variables) correct in the "Develop a search strategy" cluster. The negligib le number of students getting all correct in any of the first four clusters indicates sporadic knowledge rather than competence. This conclusion is supported by the generally low scores of the undergraduates. Table 6 contains the data on the question clu sters.

Table 6: Question Clusters

Competence	Test questions in cluster	Variable numbers	Percent of students answering all questions in cluster correctly
1. **Define the topic**	1,5,8,12	v31,v49,v56,v66	1.3%
2. **Develop a search strategy**	2,3,10	v32,v33- 38,v58	1.8%
3. **Locate & retrieve information**	4,6,9,11	v39-47,v50,v57,v59-65	0.4%
4. **Evaluate information & strategy**	13,14	v67-75,v77	1.5%
5. **Organize & synthesize**	7	v51-54	35.8%

F.   Findings from Individual Questions

1.   Online Catalog & Boolean Str ategies

Only 18% of the sample did not know how to proceed if their online search result was too big; 82% knew to add search terms and try again. Yet 45.5% did not know that in a Boolean statement, OR retrieves more records than AND or NOT. While 68% kne wto change their search terms if they retrieved zero results on "French revolution," one -third of the sample did not know what to do in that case. The mixed results here (reflecting competencies 2c and 3a) perhaps indicate sporadic knowledge as opposed t o solid competence.

2.   Critical Approach to Information

About half (52%) the respondents said they would check a statistic from a newspaper in a govern -ment source before using it in a term paper, meaning the other half would simply use the unverified data or check it in the prior year's newspaper. A more intriguing result is that although 84% of the students thought the date and author of the Website would help them evaluate the authority and accuracy of the information provided on the site and about ha lf thought the Web address (including "arco.com") would help them evaluate it, two thirds (66%) did not include the link to "What ARCO does" as an element that would help evaluate the site's authority and accuracy. Most of the students correctly did not c heck off the parts of the Website which would not help in this regard (variables 71,72,74, and 75). [20] Yet 67% said that the Website created by ARCO would be valuable as an

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[20] A fair percentage of the students (27% for v71 and v74, 14% for v72, and 42% v75) thought that the links to the information offered by the   site would help them in the task of evaluation. While it is understandable to want to see the information to be able to

objective source on which to base a paper on air pollution in Los Angeles. If the student was unaware of what ARCO is, the "don't know" option would make sense, but only 5% chose this option. Only 28% correctly said it would not be a valuable resource for this purpose. (Among the library school students, 75% said it would not be a valuable resource.) Oddly enough, although 15% said they did not know which elements of the Website would help them evaluate its authority and accuracy, only 5% said they did not know if the site would be valuable.

3. Citation

About 62% of the sample could not identify a correct and complete journal article citation for a bibliography. Although the "wrong" choices given were not extremely wrong, they did lack the entire article's page numbers and they included extraneous information; moreover, the correct answer was not dependent on knowing a particular style of citation. A similar number, about 60%, did not identify as a journal article one of the article citations in the question 11 reference grid, and 40% could not identify the other one. Between 55-58% thought the three book citations were journal articles or other forms or checked "don't know." This stands in contrast with the 97% who correctly identified the Website.

4. Crediting of Sources

In addition to the ability to decipher bibliographic references (competence 3b) is the intellectual process of citation (competence 5b). In question 7 three instances are given, all of which would require a footnote in a research paper. Ten percent of the students either checked "don't know" or said none of these instances required footnotes. Slightly over one-third of the students would not include a footnote if they copied a whole paragraph in their paper. And 56% would not include a footnote in a research paper if they read an article and wrote it over in their own words. But 76% knew that if they quoted a sentence from the article they should include a footnote. These results again indicate sporadic knowledge rather than solid competence.

5. Call Number

Although only 11% of the sample checked "don't know" on what information can be discerned from a call number in question 4, it is clear many more did not know. About one quarter of the students said the publication date could not be determined (although the example included one), and about the same percentage said the number of pages can be determined. About a quarter said the owning library can be discerned from the call number, and a slightly smaller percentage said the location of the item cannot be determined from the call number. For each of the variables just mentioned (publication date, number of pages, owning library, location), about three-quarters of the respondents knew what was discernible from the call number. Still, 60% did not think they could tell which cataloging system the library uses by looking at the call number. And fully 72% did not indicate that the subject can be discerned from the call number; this stands in comparison with the library school students, all but one of whom knew that the subject can be discerned. The results here (competence 3d) speak to familiarity with and understanding of a very basic aspect of libraries which most librarians take for granted that all undergraduates already know.

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judge it, a more critical approach would lead to the conclusion that it hardly matters what the information is when the author cannot be seen as an objective or reliable source of information on the topic for a research paper.

6.   Choosingthe"Best"Resource

Fully78%ofthesamplesaidthatsearching   theWebwouldbethebestwaytoidentifycurrentand
authoritativeinformationforaresearchpaperontheY2Kproblem;only15.5%woulduseaperio   -
dicalindex.Two -thirds(67%)ofthestudentscouldnotidentifytheprimarysourceonthelistin
question8.TofindthebordersoftheformerYugoslavia,38.6%wouldcorrectlyusethe   Encyclo-
pediaAmericana ,but35%woulduse the   AtlasofAmericanHistory orthe   EncyclopediaofAssoc -
iations.Theaveragepercentcorrectforallthevariablesinquestion   3,inwhichstudentshadto
choosethebestsourceforeachtopic,was61.4%.(Thelibraryschoolstudents'averageforthese
variableswas90.7%correct.)Onceagain,theundergraduateswereawareofsomegoodstrategies
andresources,butmanyother   esultsaredisappointing.

V.   ConclusionsandRecommendations

A.   Conclusions

Aswithmuchresearch,answersleadtomorequestions.Therandomlyselectedgroupofunder   -
graduatestudentstesteddidnotdisplayahighlevelofinformationcompetenceasme   asuredbythe
instrument.Theaveragescoreof61.7%isquitelowrelativetotheaveragescore(86.8%)ofthe
groupoflibraryschoolstudents.Thestatisticallysignificantdifferencesnotedforseniors,human   -
itiesmajors,andstudentswhouselibrary   resourcesfrequentlyareintriguing.Ifthereisnogradual
riseinscoresforthefourclasses,whydidtheseniorsscorehighest?Whatisitaboutmajoringin
thehumanitiesthatledtohigherscores?Thedatadonotanswerthesequestions.Speculati   onasto
whythehighlibrary -usegroupdidbetterincludes:moreexperiencewiththeonlinesystems,more
trialanderror,andmoreexposuretoinformation   -seekingproblemsandsolutionsmayleadtosome   -
whatmoreknowledge."Statisticalsignificance,h   owever,neednothaveanythingtodowithsub   -
stantiveinterpretationsofthefactors,sinceastatisticallysignificantfactormaynotalwaysbe
identifiedcorrectlyintermsofempiricalphenomena."   [21]

Ithastobestatedagainthatthedifferencesbetwee   nthegroups,althoughnotduetochancealone
(bydefinitionof"statisticallysignificant"),werenotlargeenoughonthefaceofittobetruly
impressive.Thedifferencebetween66%and60%issmallwhenoneconsidersthatthehigher
scoremeansanav   erageof31correctoutof47variables,whilethelowerscoremeans28correct
outof47variables.Thecommitteecannotnecessarilysaythatthestudy'sstatisticallysignificant
findings"revealsomethingmeaningfulabouttheobjectofstudy,"   [22]i.e.,ar esubstantivelysignifi -
cant.Yettheydobearouttovaryingextentsthreeofthefourhypotheses,whichwereinturnbased
onlibrarians'observationsandexperiences.

Thestatisticallysignificantfindingsarebasedonaveragescoresofgroupsdefined   byclass,library
use,major,andpastlibraryinstructioninordertotestthehypotheses.The453students'individual
scoresrangedmuchmorewidelythantheaveragescoresofthegroupsstudied(from27%   -89%),
butthedataanalysesdonotexplainthe   differencesbetweenthehighestandlowestscores.Might

[21]PeterH.Rossi,JamesD.Wright,andAndyB.Anderson,eds.,   HandbookofSurveyResearch (SanDiego:AcademicPress,1983),
274.

[22]W.PaulVogt,   DictionaryofSta tisticsandMethodology:ANontechnicalGuidefortheSocialSciences   (NewburyPark,CA:Sage
Publications,1993),226.

therehavebeenotherwaystodefinegroups?Perhapsbygradepointaverage,ethnicorlanguage factors,gender,evenpersonalitycharacteristicsrelatedtoinformation   -seekingoreducation?As thesearefactorslibrarianscannotaffect,theywerenotexamined.Theyneverthelessmightbe worthinvestigatinginordertounderstandinformationcompetencebetter;thus,theseconclusions leaddirectlyintorecommendationsforfurtherstudy.

Aclose lookatthefindingsfromtheclusters,theindividualquestions,andtheoverallscoresleads totheconclusionthatwhilestudentsarenotatatotallosswhenitcomestotheconceptsandskills tested,atbesttheypossesssporadicknowledge.Thelibr   ariansonthecommitteehadconsideredthe testaneasyonefromtheoutset;hadmoredifficultquestionsbeenincludedandalargernumberof questionstestingeachcompetenceinmoredepth,thescoreswouldprobablyhavebeenevenlower.

Withrespectto thefindingrelatedtolibraryinstruction,itissignificantthatlibraryinstructionat UCLAisdecentralizedandsonot,inanoverallway,gearedtowardanestablishedsetofinforma   - tionliteracyobjectivesnorcharacterizedbysystematiccurriculart   ie-in.Individualsessionsincor   - porateobjectivesandcurricularrelevance,butthereisnoprogressive,formalinstructionsustained throughthefouryearsoraspartofthemajor;libraryinstructionisnotformallyincludedbyaca   - demicdepartmentsor universityadministrationasarequiredpartofaUCLAeducation.Giventhat, anddespitethehypothesisthatthe"high"libraryinstructiongroupwoulddobetter,itisnotwholly surprisingthattheydidnot.Ifthisgrouphadbeenlarger,wouldther   esulthavebeenthesame?It isnotpossibletotell.Nonetheless,anewhypothesisarisesfromthisfinding:thatundergraduates whosecollegesrequireorincorporatesystematic,curriculum   -integratedinformationliteracyeduca   - tion,withallthegoals,   ways,andmeansinplace,willbemoreinformationcompetentthanstudents inschoolswhichlacksuchafocus.Itispossiblethatwhatmakesthedifferenceisnotjustthe numberoflibraryinstructionsessionsastudenthashad,butwhethertheyarepa   rtofanintegrative program.

Theinstrumentwasnecessarilyneutralintermsofacademicdiscipline;yetassessment,likeinfor   - mationliteracyeducation,mightbestbeaccomplishedinthecontextofparticulardisciplines,"as informationliteracymanif estsitselfinthespecificunderstandingoftheknowledgecreation, scholarlyactivity,andpublicationprocessesfoundinthosedisciplines." [23] Itisimpossibletoknow ifthestudentswouldhavedonebetterifthequestionshadrelatedsolelytotheir   majorsubjects;the committee'sassumptionisthatthebasicorgeneralcompetencetheinstrumentsoughttoassess wouldstillbeimportantinordertodowellonamoresubject   -orientedtest.

B.   Recommendations

Basedonacarefulreviewofquestionres   ponses,thescoresandotherdatafromthequestionnaires, andmembers'combinedexperience,thecommitteerecommends:

1. Thatlibrarystaffinitiateadialoguewiththefacultyaboutinformationliteracytoobtaintheir opinionsonstudents'abilitiesandh   owitimpactstheircourseworkandtodiscusshowto reaffirmorenhancetheseskillsaspartofaUCLAeducationandforlifelonglearning.

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[23] AssociationofCollegeandResearchLibraries, InformationLiteracyCompetencyStandardsforHigherEducation   (Chicago: AmericanLib raryAssociation,2000),6.

2. That library staff share with faculty the finding that increased use of library resources to find materials and do research increases students' general information competence. The Library might collaborate with faculty to create more library and online resource-based assignments in which students are required to find, use, and evaluate books and articles apart from the list of course readings.

3. That the Library in partnership with interested faculty from a group of academic departments initiate a systematic program of information literacy education. This might include:

   (a) establishing basic competencies, perhaps by adopting the ACRL standards, which did not exist when this project began;
   (b) creating specific expectations for particular academic majors of information resources and methods students in the major should know and use;
   (c) working creatively with more faculty to create assignments that will contribute to students' information literacy skills;
   (d) finding multiple ways to teach students sophisticated Web search and evaluation skills to counterbalance the prevalence of the Web and students' uncritical use of it;
   (e) working with academic departments to add a for-credit information literacy component to existing courses;
   (f) creating an information literacy course that would be a learning laboratory for students;
   (g) making more effective use of Web-based instruction, Web tutorials, virtual reference, and remote learning mechanisms;
   (h) considering methods and responsibility for assessing students' information competence to identify areas of weakness.

C.   Further Research

In addition to these recommendations, the committee has ideas for further research. Some of these ideas arose from members' experience of conducting the research and using the instrument, others from analyzing the results.

1. Test incoming freshmen to identify areas of particular weakness so these can be addressed in library instructional programming or directly by faculty.

2. Redesign the instrument with a particular subject discipline as a context for information competence and use it to test students majoring in that discipline.

3. In order to address hypothesis b (whether independent library research being more important in some majors affects information competence), test students majoring in subjects at opposite ends of the "independent library research" spectrum to compare the two groups.

4. Given the limitations of multiple choice tests and survey research (see Appendix B), explore other methods of testing in order to get a better, more comprehensive impression of information competence and where the weaknesses and misunderstandings lie. Examples: live sessions in which the tester watches the student search online; open-ended questions in which students have to come up with their own research strategies for given topics.

5. Incollaborationwithfaculty,conductpre-testsandpost-testsatthebeginningandendofa quarter tocomparescoresofstudentswhohadalibraryassignmentorresearchpaperwiththose whodidnot.Thiswouldmeasuretheeffectsoflibraryuseoninformationcompetence.

6. Withfocusgroupsand/orpre-testsandpost-tests,determinewhichinstructional methodsor techniquesaremosteffectiveinincreasinginformationliteracy.

7. Workwithanacademiclibraryataninstitutionthathasinplaceaprogramofsystematiclibrary instruction(e.g.,oneoftheCaliforniaStateUniversitysystemschools?)tot eststudentsand compareresultswiththoseatUCLA.

8. UsetheACRL InformationLiteracyCompetencyStandardsforHigherEducation (2000)not onlytocreateaUCLAinformationcompetencelistbutalsotoredesignthetestinginstrument, toopendiscussions withfacultyandadministration,andtoaidinthedesignoflibrary instructionprogramming(inpersonandremote).

APPENDIXA

UCLA Library
Instructional Services Advisory Committee
Questionnaire

Student data:
Please complete the following about yourself:

1. Class: (**Circle one number**)
   Freshman….1 Sophomore….2 Junior….3 Senior….4   V3

2. Age: ﹍﹍﹍   V4(2)

3. Sex: F….1   M….2   V5

4. What is your G.P.A. (grade point average)? ﹍﹍﹍﹍﹍﹍﹍﹍﹍ V6V7(2)

5. Please indicate your major at UCLA. If you have not declared a major, write "Undeclared." If you have two majors, name both.

   ﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍
   V8(3)

   ﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍
   V9(3)

6. What is your career goal? ﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍﹍ V10

7. I have taken a course lasting a quarter (or a semester or year) in library research methods and resources (such as LIS 110)

   Yes….1 No….2   V11

8. I have had a class session on how to use the library (for example, on library resources, research strategies, online catalogs and indexes, or tours)

(**Circle one number for each category at left**.)

	never	once	2-5 times	over 5 times	
at UCLA……………….	1	2	3	4	V12
at another college………	1	2	3	4	V13
in high school……………	1	2	3	4	V14

9. Which self-guided methods of library instruction have you used?

(Circle all numbers that apply).

Computer-based tutorial........................... 1		V15
"Help" screens in online systems........... 2		V16
Workbooks... 3		V17
Handouts... 4		V18
None... 5		V19

10. I visit a library to use its resources:

(Circle one number for "UCLA library" and one number for "Another library.")

	never	1-2 times a year	1-2 times a month	once a week	several times a week	
a) A UCLA library...	1	2	3	4	5	V20
b) Another library...	1	2	3	4	5	V21

11. Since the beginning of fall quarter, 1998, I have done the following:

(Circle one number for each action category at left.)

	never	1-3 times	4 or more times	
a) used ORION..............................	1	2	3	V22
b) used MELVYL............................	1	2	3	V23
c) used the World Wide Web...........	1	2	3	V24
d) used a book in the reference section at a UCLA library.......	1	2	3	V25
e) asked for help at the reference desk at a UCLA library..........	1	2	3	V26
f) looked up an article in a journal....	1	2	3	V27
g) located a needed book in the stacks at a UCLA library.......	1	2	3	V28
h) checked a class reserve list........	1	2	3	V29
i) used the self-renewal option (BUS) on ORION..........................	1	2	3	V30

Questions:

1. Which of the following topics can reasonably be covered in a 5-page research paper?) _{V31}

(**Circle one number**)

Koreans in Los Angeles 1
Asians in the United States………………………………………….. 2
Japanese Americans in the nursing profession in Beverly Hills…3
Don't know………………………………………………………….. 4

2. The best way to identify current and authoritative information for a research paper on the Y2K problem is: _{V32}

(**Circle one number**)

search the World Wide Web………………….. 1
check an encyclopedia………………………… 2
consult a book………………………………….. 3
use a periodical index………………………….. 4
Don't know……………………………………… 5

3. For **each** information category at left, **circle the number of the ONE best** source to use to find the information:

Source → _Information ↓_	NY Times	Encyclo-pedia of Associa-tions	Journal index	Encyclo-pedia Americana	Atlas of American History	Statistical Abstract of the U.S.	Don't Know
a) Contact information for the Daughters of the American Revolution V33	1	2	3	4	5	6	7
b) Borders of the former Yugoslavia V34	1	2	3	4	5	6	7
c) Current research on cloning V35	1	2	3	4	5	6	7
d) Unemployment data for 1996 V36	1	2	3	4	5	6	7
e) Latest presidential election results V37	1	2	3	4	5	6	7
f) Description of Brazilian rain forests V38	1	2	3	4	5	6	7

4. What information can be discerned from this call number?
     QD 96 N8 P159 1979

(**Circle all that apply**.)

subject	1	V39
author..	2	V40
title...	3	V41
where the book is located.............................	4	V42
which library owns the book..........................	5	V43
when the library acquired the book..................6		V44
which cataloging system the library uses...........7		V45
how many pages in the book..........................	8	V46
the date of publication..................................	9	V47
Don't know...	10	V48

5. If you were writing a paper on crime in Los Angeles and you found a newspaper article with statistics indicating that there was a 10% decline in 1997, which of the following is the next best step?

V49

(**Circle one**.)

Verify the accuracy of the figure by comparing
   with last year's newspaper.. 1
Check the statistics in a government source 2
Use the data, being sure to cite the article in your paper...... 3
Don't know... 4

6. If your keyword search in the online catalog on "public health United States" retrieves 827 books, what would be the best next step?

V50

(**Circle one**.)

Add terms to the search and try again................................... 1
Try searching under "United States public health".................. 2
Try the search again with fewer terms................................. 3
Scan the list to choose the most relevant books....................4
Don't know... 5

7. Suppose you are writing a research paper and you read an article on your topic. In which of the following instances would you write a footnote in your paper?

(**Circle all that apply**.)

when you copy a whole paragraph....................................	1	V51
when you write it over in your own words..........................	2	V52
when you quote one sentence from the article....................	3	V53
None of the above...	4	V54
Don't know...	5	V55

8. For your history class you must select a primary source and write a brief paper placing it in context. From the list below, choose the **one** best primary source on which to base your paper.   V56

(**Circle one**.)

Chapter in your text book………………….. 1
Journal article……………………………… 2
Scholarly monograph………………………. 3
Collection of letters………………………. 4
Critical biography…………………………. 5
Don't know………………………………. 6

9. Which of the following would be a correct and complete citation for this item in a bibliography?   V57

> Meyer, Harris.
>   *John Rother's road trip*.(studies managed care around the US) (Interview)
>   Hospitals & Health Networks v71, n16 (August 20, 1997):23-25.
>   Pub Type: Interview.
>   Type D 1 AB to see abstract.

(**Circle one**.)

Meyer, Harris. "John Rother's road trip." *Hospitals &*
    Health Networks 71 (August 20, 1997): 23-25. …………………. 1
Harris Meyer. John Rother's road trip. (Studies managed
    care around the U.S.) *Hospitals & Health Networks*,
    vol. 71, no. 16, August 20, 1997, p. 23. ………………………… 2
Meyer, Harris. "John Rother's road trip." Interview.
    Hospital & Health Networks 71 (16), August 20, 1997. ………. 3
Don't know……………………………………………………. 4

10. In an online database (for instance, ORION) which search below would retrieve the greatest number of records?   V58

(**Circle one**.)

cognition and emotion………………………. 1
cognition or emotion………………………. 2
cognition not emotion………………………. 3
Don't know………………………………. 4

11. Decide whether each citation below (left column) refers to a book, a journal article, a World Wide Web site, or a government document.

(**Circle one number for each citation**.)

Citations:	Book	Journal article	World Wide Web site	Govern- ment docu- ment	Don't know
a) Oaklander, C.I. 1992. Pioneers in folk art collecting. Folk Art 17:48-55. V59	1	2	3	4	5
b) Bay, C. Human needs and political education. In Fitzgerald, R., Ed. Human needs and politics, 1-25. V60	1	2	3	4	5
c) Winslow, Donald J. Thomas Hardy as a Subject of Biography. THY 5 (1975):15-21. V61	1	2	3	4	5
d) Birks, L. S. Electron probe microanalysis. Wiley-Interscience, 1971. V62	1	2	3	4	5
e) New Zealand. Dept. of Statistics. External trade: imports. 1973-74. Aug. 1977. V63	1	2	3	4	5
f) University of Chicago Library. Slavic and East European Studies. http://www.lib.uchicago.edu/LibInfo/Sources BySubject/Slavic/ V64	1	2	3	4	5
g) Cabinet Ministers and Parliamentary Government. Ed. M. Laver. Cambridge University Pr., 1994. V65	1	2	3	4	5

12. Suppose you perform a subject search in the library online catalog on the "French Revolution" and the computer retrieves zero results. Which one of the following best applies? _{V66}

(**Circle one**.)

The library has no books on the subject……………………………….. 1
Adding more terms to the search will retrieve books on the topic…...2
The library's books on the topic are listed under different terms ……3
The system is down…………………………………………………. 4
Don't know…………………………………………………………… 5

13. Identify the components of this Web site which help you evaluate the authority and accuracy of the information it provides.
(**Circle all that apply**.)

1

2

3

4

5

6

7

8

9

10 —————— Don't know   V76

14. How valuable do you think the above Web site would be as an objective source on which to base your paper on air pollution in Los Angeles?   V77

                                                               (**Circle one.**)

    Valuable..   1
    Not valuable..   2
    Don't know...   3

APPENDIXB

EvaluationoftheInstrument

Asasidelightofthestudy,oneofthecommittee'shopeswastolearnaboutinformationliteracy assessmentandtocontributesomethingtotheliteratureonit.Itisthereforeappropriatet   orecord someofthestrengthsandlimitationsoftheinstrumentdevelopedforthisproject.

Althoughitwouldhavebeenpreferabletoincludemorequestionsonthetestpartoftheinstrument inordermorethoroughlytocoverparticularcompetencies,i   fithadbeenanylongerormoretedious totake,therewouldcertainlyhavebeenfewervolunteers.Itisadifficultbalancetoachieve.Asit is,somecompetencieswerecoveredwithtwoorthreequestions,otherswithone,andsomewith none(2d,3c,   5a).Thiswassometimesbecauseatestinginstrumentdoesnotlenditselfto assessingcertaincompetencies.

Forexample,number5a,"criticallyuseandintegrateinformationfromavarietyofsourcesappro   - priatetotheresearchquestion"was,thecommi   tteefelt,impossibletotestwiththissortofinstru   - ment.Thebesttestofthatcompetencemightbeareview(bytheprofessor)ofatermpapertosee whethertherewasacriticalandanalyticalapproachtoinformationfromappropriateandvaried sources.Atestitemforthismighthavehadthestudentreviewapieceofwritingandanswer questionsaboutitsuseofinformationandresources(notexactlythesamethingashiswritingthe piecehimself),butthiswouldhavemadethetestfartootimecon   sumingtotake.

Forthe453completedquestionnaires,scoresrangedfrom27%to89%,whichappearasabell   - shaped(or"normal")curveonagraph(seeAppendixC).Whenananalysisof"predictive association"wasrun,afewitems(4outof44variables)   werefoundnottobepredictive.Thatis, gettingtherightansweronthequestionwasnotpredictiveofinformationcompetence(asdefined byahighscoreonthetest).Whenthefourvariablesthatfellintothiscategorywereexamined carefully,three ofthemdidnotposeaconcern;inotherwordsthecommitteedidnotbelievethat theseweresomehowbadquestions,onlyhardones.Thefourthnon   -predictiveitem(question number1onthetest,whichwasvariable31)gavethecommitteemuchmoreconcern   becauseit couldbeseenastoosubjectiveaquestionfromacertainviewpoint.Wheneverystudentinthe "expert"groupfromthelibraryschoolgotthisquestionwrong,committeememberswerefinally convinceditwasabadquestion.Ifthetestwereto   begivenagain,thisquestionwouldhavetobe rewritten.

Inthedemographicportionoftheinstrument,aquestionshouldhavebeenincludedaskinghow manyresearchpapersthestudenthaddone.Itwouldperhapshavebeenamoremeaningful measureof"li braryuse"thansomeoftheotheritemsinquestion11(v22   -30).

Onthewhole,theshortmultiplechoicetesthasitslimitsforassessingalargeandcomplexsetof knowledgeandskill.Thesuggestionsforfurtherstudy(sectionV.C)offerideasforc   ompletely differenttypesoftesting,wherethestudentwouldactivelyhavetodemonstratecompetencewith researchstrategyconceptsandtoolsratherthanpassivelypickfromgivenchoicesonatest.

APPENDIXC

GraphShowingRangeofTestScores
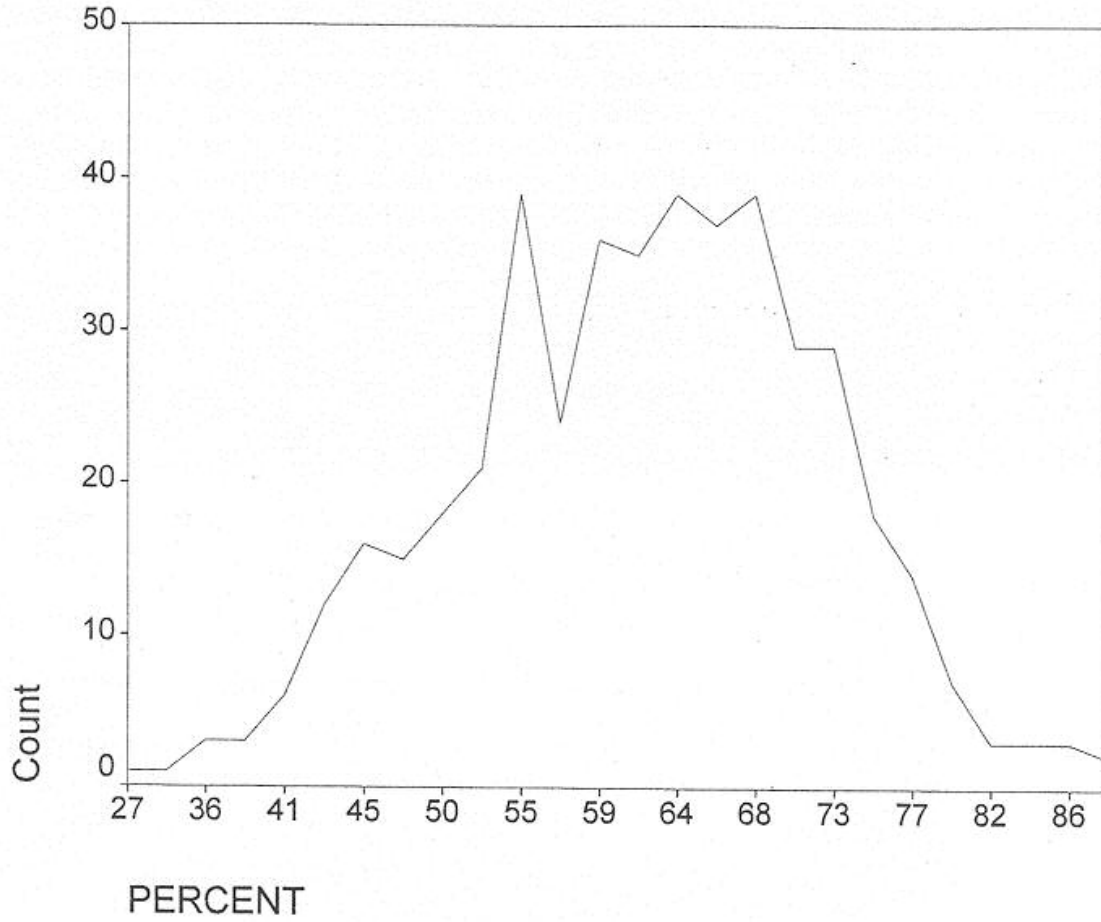
APPENDIXD

EmailAskingForParticipationInProject

TO:(studentname)
FROM:PattiS.Caravello,Librarian,UCLAYoungResearchLibrary
DATE:May10,1999
RE:$10foryourthoughts

Howwouldyouliketoreceive$10.00for15   -20minutesofyourtime   andhelpimprovetheUCLA Library'sservicesatthesametime?

YouareamongasmallgroupofUCLAundergraduatesIamaskingtofilloutashortquestionnaire oninformationresourcesandresearchskills.Youwillbepaid$10.00cashwhenyouhandinth   e completedquestionnaire.

Here'sallyouneedtodo:
* Comeanytimebetween10a.m.and1:30p.m.toeitherthe
    * AckermanViewpointConferenceRoom(A   -Level)onWednesday,May12or
    * KerckhoffStateRoom(1   stfloor)onThursday,May13
* BringyourUCLAstude   ntID(BruinCard)sowecancheckyournameoffthelistofthosewho receivedthisemail.
* Completethequestionnaireandreceivea$10bill.

Note:Youranswerswillbekeptstrictlyconfidentialbythelibrary'sInstructionalServices AdvisoryCommittee .Youranswerswillneverbematchedwithyourname.

Byansweringthequestionsyouwillhelpusgainvaluableinformationthatwillhelpustoprovide undergraduate-friendlylibraryservices.Ifyouhaveanyquestions,pleasereplytolib   - survey@library.ucla.edu.

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This is the first publication of the UCLA Library's Information Literacy Initiative, which has been created to enhance the Library's efforts to instruct students in information literacy skills and to encourage and inform a campus-wide dialogue on this subject. To be placed on the mailing list for future publications, please send your name, mail and email addresses, and telephone numbe r to: Dawn Setzer, Director of Library Communications, UCLA Library, 53442 Young Research Library, Los Angeles, CA 90095 -1575 or email <dsetzer@library.ucla.edu>.