UC Santa Barbara

UC Santa Barbara Previously Published Works

Title

Meeting information literacy outcomes: Partnering with faculty to create effective information literacy assessment

Permalink

https://escholarship.org/uc/item/4zh470nm

Journal

Journal of Information Literacy, 6(2)

ISSN

1750-5968

Authors

LaBonte, Kristen

Hoffmann, Debra

Publication Date

2012-12-01

Copyright Information

Peer reviewed

Article
Hoffmann, D. and LaBonte, K. 2012. Meeting information literacy outcomes: partnering with faculty to create effective information literacy assessment. *Journal of Information Literacy*, **6(2), pp. 70-85.**
http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/LLC-V6-I2-2012-1

Meeting Information Literacy outcomes: Partnering with faculty to create effective Information Literacy assessment

Debra Hoffmann, Information Literacy Coordinator, Broome Library, California State University Channel Islands

*Kristen LaBonte, Life Sciences Librarian, UCSB Library, University of California, Santa Barbara
*Ms. LaBonte was Digital Resources & GIS Librarian at California State University Channel Islands at the time this research was conducted

Abstract

This paper outlines the attempt by librarians at California State University Channel Islands (CI) to authentically assess the information literacy levels of first-year and third-year students, their partnership with faculty from CI's writing and rhetoric programme in receiving a grant for this endeavour, the creation of a rubric and specialised assignment to facilitate the assessment process and the initial assessment data that came from the three-year grant period. Information gathered during our pilot study suggests that student information literacy proficiency levels can been determined by assessing student writing assignments, and that a targeted rubric is an effective authentic assessment measure in this endeavour. This study is of use to practising librarians as it highlights the efforts of the authors to partner with faculty, not only in assessing student papers, but also in creating a rubric and specialised bibliography assignment that can be used by librarians and faculty at their institutions.

This article is based on a paper presented at LILAC 2011.

Keywords

---

1. Introduction

In 2005, librarians from all 23 California State University (CSU) campus libraries were asked to beta-test an assessment product from Educational Testing Service (ETS). The product was designed to assess information competency and technology (ICT) literacy in students at various academic levels in their university careers (first-years, third-years and graduating fourth-years). Librarians at CSU Channel Islands (CI) were asked by ETS to beta-test the ICT literacy assessment product with 50 random student participants from various academic levels. ETS returned score reports on these students with only minimal data. Students were shown to be either at, above or below baseline levels of ICT proficiency; no other data (such as proficiency in a particular competency) were reported. Librarians at CI wondered if a more authentic measure of IL (as opposed to a standardised test) would yield better information about the IL levels of students at CI. This paper outlines the attempt by librarians at CI to authentically assess the IL levels of first-year and third-year students, their partnership in receiving a grant for this endeavour with faculty from CI's writing and rhetoric programme (hereby referred to as "writing faculty") who instruct first-year students on composition and rhetoric, the creation of a rubric and specialised assignment to

facilitate the assessment process, and the initial assessment data that resulted from the three-year grant period.

1.1 Institutional context

CI is a relatively new four-year university in the twenty-three campus California State University (CSU) system. The first freshman class started in 2003, and the campus was fully accredited by the Western Association of Schools and Colleges (WASC) in 2007. At CI, IL is seen as a *campus* responsibility—three IL standards are included in the university's General Education student learning outcomes. Meeting these General Education outcomes is a requirement for students to graduate from the university. The three IL outcomes determined by the university are:
- the information literate student accesses information effectively and efficiently;
- the information literate student evaluates information sources critically;
- the information literate student explains legal, ethical and social issues associated with information.

In deciding to include IL outcomes as part of its General Education requirements for graduation, the university adopted standards for IL that are similar to the broader Association of College & Research Libraries (ACRL) *IL Competency Standards for Higher Education* (2000).

The library's IL Coordinator targets specific first-year (freshman), third-year (upper division) and fourth-year (capstone) courses for library instruction each semester. As a result, approximately 1700 students come into the library for course-related IL instruction each semester; instruction librarians lead IL sessions for over 3500 students each year. At CI, the terms *library instruction session* and *library IL session* are used interchangeably.

2. Literature review

A review of the literature focused on three areas: authentic assessment of IL (specifically portfolio assessment), partnering with faculty to assess IL, including tutor- and student-centred approaches, and the use of rubrics as an effective authentic assessment measure.

2.1 Authentic assessment of IL

Interest in alternatives to traditional measures of IL has been growing in recent years, with many librarians developing their own tools to assess aspects of IL (Walsh 2009). Concern about students' ability to locate, evaluate and incorporate relevant information into their academic work, along with a desire from educators to highlight evidence of student learning, has accelerated interest in new methods and tools that measure IL (Brown and Kingsley-Wilson 2010). Increasingly, "performance" or "authentic" assessments that look at students' demonstration of skills are gaining popularity (Knight 2006). Authentic assessment focuses on the practical application of tasks in real-world settings and is a direct measure of the acquired knowledge and skills that students use to perform authentic tasks (Fook and Sidhu 2010). Additionally, authentic assessments examine students' analytical skills as well as their ability to integrate new learning into existing knowledge, giving equal weight to the process as much as the finished product (Snavely and Wright 2003; Jacobson and Xu 2004). Various types of authentic assessment include performance assessment, portfolio assessment and self assessment (Sharma 2007; Callison 1998).

2.2 Portfolios for authentic assessment of IL

Portfolio assessment of IL skills is increasingly popular (McGuinness and Brien 2007; Andretta 2005; Fourie and van Niekerk 1999). Portfolios can provide a multilayered view of student performance, experience and reflections (Hunt et al. 2000) and can afford instructors evidence of student growth as well as other information that can be used for both formative and summative

assessments (Sharma 2007). Walsh (2009) notes that while there is considerable discussion of the benefits and drawbacks of portfolio assessment within the literature (Sharma 2007; Sonley et al. 2007; Fourie and van Niekerk 1999), discussion often focuses on assessment of specific aspects or *modules* of IL, not on how reliable or valid portfolio assessment is for assessing what it means to be information literate. Walsh points to the work of Scharf et al. (2007) as an example in the literature of portfolio assessment that attempts to produce a reliable and valid tool to assess IL.

2.3 Partnering with faculty to assess IL

Academic librarians are not alone in their interest in student IL skills (Oakleaf 2011). Examining student assignments such as research papers, writing portfolios and research journals can help librarians and faculty not only assess writing assignments but the research process as well (Belanger and Bliquez 2012). Literature on this topic often challenges librarians to rethink their traditional roles and to build relationships with faculty outside of the library in order to become more active partners in the educational process (Ducas and Michaud-Oystryk 2003). Rockman (2002) asserts that it is essential to collaborate with faculty to advance IL goals. At CI, librarians have faculty status, serve on university-wide committees, participate in university governance and teach credit-bearing courses in disciplines outside of the library. Because we collaborate with faculty on a daily basis, we have seen first hand the benefits of partnering with faculty to enhance student learning. Going beyond traditional library goals and viewing assessment from other departments' viewpoints creates opportunities for librarians (Mark and Borouff-Jones 2003; Brasley 2008). "Librarians and teaching faculty have many mutual goals and concerns. Both want to…help students become…critical thinkers, and self-directed, lifelong learners" (Yousef 2010). Collaboration is not only useful for improving student achievement; it is essential in improving students' IL skills and behaviours (Immroth and Lukenbill 2007). In seeking partnerships with faculty, librarians discover that faculty are also interested in critical thinking, the effective use of information and technology, the search process and collaborative reasoning (Smith 2001).

2.4 Tutor-centred and student-centred approaches to IL and assessment

'A tutor-centred approach to IL focuses on the transmission of knowledge…with tutors concentrating more on content than on student processing' (Brown 2003). In examining the work of Rosenshine and Stevens, Schug (2003) found that effective teacher-centred instructors provide students with a statement of goals, give clear, detailed instruction and explanations and provide a high level of practice for students. By contrast, student-centred IL encourages students to take responsibility for their own learning by engaging with resources independent of tutors, and to perceive tutors as learning facilitators (Andretta and Cutting 2003). Keene et al. agree, finding that the most successful IL strategies were student-centred approaches that enabled students to appreciate the relevance of evaluating resources, and helped them develop appropriate criteria for evaluation, a process which they would be likely to continue to use in future learning contexts (2010). IL instruction in higher education is necessary, because it cannot be assumed that students acquire information-seeking and evaluation skills on their own (Helvoort 2010; Brand-Grewel et al. 2005). Learning goals are achieved by active collaboration between the teacher and students, who together determine what learning means for each individual student (Schuh 2004).

Librarians at CI employ a mixture of tutor-centred and student-centred approaches to learning. In each IL session, librarians plan and teach concepts and skills to students based on the research assignment students will be undertaking in the course. Librarians impart expert knowledge and map out for students the scope and direction of the session so that students know the goals and intent of the session. Students gain skills and confidence through hands-on, active learning, searching and research exercises that allow them to locate and evaluate sources for quality and relevance. Instruction sessions with a librarian are always crafted around students' own research topics and assignment needs, as well as their individual IL proficiency levels. There is never a one-size-fits-all approach to IL instruction. It should be noted that the assessment effort addressed in our study takes a more tutor-centred approach. Student assignments were assessed by librarians

and faculty using a specially devised rubric. These assignments had previously been assessed by writing faculty using their own programme rubric. We desired to examine authentic, previously graded writing assignments for evidence of IL and student learning. Our tutor-centred approach allowed both librarians and faculty to gauge student learning since both were familiar with what students had been taught in class and in IL sessions (if they had one). Both librarians and faculty were also aware of the grade students received on assignments completed after these IL sessions.

2.5 Rubrics as an authentic assessment measure

Current literature supports the trend that using rubrics for authentic assessment can provide a more meaningful picture than traditional assessment methods. In higher education, rubrics are considered a form of authentic and objective assessment (Knight 2006). Fielden and Foster (2010) reviewed of the literature on the history and use of rubrics, citing the work of Oakleaf (2007), Stevens and Levi (2005), Knight (2006) and Moskal (2000), among others. An important facet of authentic assessment is its focus on *process.* Authentic assessment looks at a product as well as the process that students go through to create that product (McGuinness and Brien 2007). Assessing student work allows for an examination of the process of student learning, not simply the outcome (Bussert and Pouliot 2010). Sharma (2007) found that assessing the process students undertake in gathering information and approaching problems is as important as evaluating the search results that students find. "Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes" (Pausch and Popp 1997, n.p.). Helvoort (2010) surveys the literature on the potential disadvantages associated with using rubrics, including rubric creation issues (Diller and Phelps 2008; Knight 2006) and issues related to reliability of the rater (Oakleaf 2009; Scharf et al. 2007). How we addressed issues of rater reliability is explored in our Methodology section.

3. Methodology

In 2006, librarians and faculty began the process to authentically assess student work. At the start of the grant, the university had only been in operation for three years. The focus was on creating and growing a university, not on assessment of students or programmes. Consequently, assessment data related to the IL levels of students at CI was non-existent.

The pilot study took place between 2006 and 2009. From the beginning, the authors sought to examine student writing as a way to authentically assess student success in achieving the university's IL outcomes. To that end, the authors sought partnership with faculty. Students in writing and rhetoric courses receive library instruction each semester, and the authors have a strong history of collaboration with writing faculty. Participants included three librarians and five faculty members. Both the authors and faculty agreed that a rubric would be the best way to authentically assess student writing; faculty already assessed student work using their own rubric based on their programme's writing and research outcomes, and librarians desired to pursue an authentic assessment of student work. The intent was to create a rubric that could be applied to all first-year writing assignments that require research, with the idea that the rubric could eventually be used to assess third-year student writing and fourth-year capstone research projects as well.

The group met often to brainstorm, examine existing rubrics from other colleges and universities and devise possible criteria for the rubric (see Appendix A). The authors and faculty agreed to align rubric criteria to the three campus GE outcomes for IL and not to any additional criteria, such as those reflected in ACRL's *IL Competency Standards for Higher Education* (2000)*.* The rubric contains three proficiency levels per criteria: *emerging, proficient and advanced.*

The rubric was applied to student writing assignments from first-year writing courses that had IL sessions with librarians. Throughout each term, students self selected writing assignments to submit to their writing portfolio (a collection of work each student submits for a grade). At the end of each term, librarians and faculty *separately* applied the rubric to student portfolios using a score

sheet created along with the rubric (see Appendix B. Note that COMP classes are writing and rhetoric classes). Faculty had previously applied their own programme's grading rubric to these assignments and librarians purposely had no knowledge of these prior grades.

Librarians were also unaware of the "normalising" process (a process by which raters grade sample papers together and review results as a group in order to maximise rater reliability) that faculty undertook in assessing these assignments. While both librarians and faculty applied the rubric score sheet to the same student products, they did so independently of each other during the first year. Study participants met again at the end of the semester to examine scores and evaluate the process.

During the second year, the same rubric was used to assess the same lower division writing courses. While librarians and faculty were satisfied with the rubric in terms of criteria, it was clear that some student writing assignments were easier to apply the rubric to than others (student portfolios contained self-selected writing assignments that ranged from problem/solution papers to narratives to individual or group research papers). To address this issue, a specialised reflective annotated bibliography component (see Appendix C) was created to minimise the difficulties that arose in trying to apply the rubric to a disparate array of writing assignments. It was also clear to librarians that rating the assignments separately from faculty was problematic; rubric scores tended to vary widely between faculty (who had previously assessed the assignments) and librarians (who were assessing the assignments for the first time). During the second year, librarians and faculty applied the rubric to student assignments together, eliminating confusion and improving scoring consistency.

The reflective annotated bibliography requires students to reflect upon the research assignment at hand, locate what they consider to be appropriate resources and then reflect upon each of these sources *individually*, using criteria stated in the bibliography prompt. By pairing the reflective annotated bibliography component with student research, librarians and faculty sought to highlight the research *process* undertaken by students and to discern the reasoning behind why students chose and incorporated the sources that they did. The reflective annotated bibliography is flexible enough to be paired with any research assignment, and having student reflections as part of assignments helped raters better identify evidence of IL in students' written work.

At the conclusion of year two, librarians and faculty reflected upon the effect, if any, of pairing the annotated bibliography assignment to student research assignments. Both librarians and faculty agreed that the reflective component of the annotated bibliography greatly facilitated the rating process. Raters were better able to see evidence of a student's *intent* in choosing or incorporating a source into an assignment, even if that intent wasn't immediately clear from examining the assignment alone.

During year three of the study, additional third-year, upper division (UDIGE) student writing assignments were assessed along with assignments from first-year writing courses. Over the course of the grant, all participating faculty were paid a small stipend (funded by the grant) to collect student writing assignments and rate the assignments with librarians.

3.1 Applying the rubric

Using the rubric score sheet, raters reported the type of research assignment, whether the assignment included the reflective bibliography component and the amount of IL instruction given (and by whom) in conjunction with the assignment. Both librarian and faculty raters had knowledge of the amount of IL instruction given to each class; this may have introduced unintended bias to the rating process. Librarians and faculty were interested in discerning IL levels of students. For their part, librarians were also curious to see if the rubric would indicate a correlation between the amount if IL instruction and the IL levels of students. Writing assignments were scored as *emerging, proficient or advanced,* summarized as:

- **Emerging:** Student fails, struggles, is unaware or demonstrates little understanding;
- **Proficient:** Student demonstrates proficiency, understanding;
- **Advanced:** Student demonstrates thoroughness, critical thinking, comprehensive understanding.

IL instruction in courses ranged from "one-to-multiple sessions with a librarian *in addition* to IL instruction by the faculty member" to "no IL instruction of any kind by either the faculty member or librarian". IL instruction occurred more often in first-year courses than in UDIGE courses (see Table 1). At CI, all IL instruction by librarians is tailored to the research assignment and specific needs of instructors. A primary goal of the library's instruction programme is to provide assignment-specific IL instruction that is unique to the individual needs of students in a particular course. Variations in the amount and type of IL instruction in these courses were not taken into account in applying the rubric, nor was any attempt made to standardise the amount and type of IL instruction in these courses. Librarians and faculty wanted to conduct the assessments in authentic course environments.

Table 1: Amount of IL instruction by course

Group	Course	Assignment	IL instruction (from Librarian unless otherwise noted)
1	Comp 105	Individual annotated bibliography	None
2	Comp 105	Group or individual annotated bibliography as part of an individual research paper	None
3	Comp 102/103	Individual annotated bibliography in paper as part of a narrative essay that requires research	None
4	Comp 105	Individual annotated bibliography with a proposal	1 hour
5	UDIGE	Individual research paper and annotated bibliography	Minimal (from instructor)
6	UDIGE	Individual research paper and literature review	1 hour 1 hour (from instructor)
7	Comp 105	Individual hybrid annotated bibliography (which included an introduction and conclusion)	1 hour 1 hour (from instructor)
8	UDIGE	Group research paper	2 hours (course co-taught by librarian)
9	Comp 105	Group annotated bibliography and group research paper	2 hours

4. Data findings

Between 2006 and 2009, 190 individual and group writing assignments were assessed using the grant rubric with the aim of discovering information regarding the IL levels of students whose work was part of the study. The writing assignments assessed were from first-year and third-year students, and they comprised a range of assignments, from individual problem/solution papers to group research projects. Using the rubric score sheet, librarians and faculty assigned scores of *emerging*, *proficient* or *advanced* for each of the rubric's three criteria: the information literate student accesses needed information effectively and efficiently; evaluates information and its sources critically; explains the economic, legal, social and ethical issues surrounding the use of information.

Table 2: Score distribution by outcome based on group

Group[n]	Rubric outcome 1	Rubric outcome 2	Average
1[25 (COMP)]	1.60	1.54	1.57
2[9 (COMP)]	1.50	1.57	1.54
3[55 (COMP)]	1.47	1.39	1.43
4[23 (COMP)]	1.58	1.75	1.67
5[15 (UDIGE)]	1.79	1.70	1.75
6[24 (UDIGE)]	1.96	2.08	2.02
7[29 (COMP)]	2.27	2.29	2.28
8[6 (UDIGE)]	2.22	2.28	2.25
9[4 (COMP)]	2.67	2.54	2.61
Average	1.90	1.90	1.90

1.0 = Emerging; 2.0 = Proficient; 3.0 = Advanced   n = number of assignments assessed

Scores ranged from 1.43 ("emerging") to 2.61 ("proficient") (see Table 2). Here, Outcome 1 refers to: *"the information literate student accesses needed information effectively and efficiently"* and Outcome 2 refers to: "the information literate student evaluates information and its sources critically". Outcome 3, "the information literate student explains legal, ethical, and social issues associated with information," was intentionally not included in Table 2. Raters found they were unable to assign scores for this outcome to student papers. Unless explicitly asked in their assignment to explain the legal, ethical and social issues associated with information (which no student was assigned to do), both librarian and faculty raters found no evidence of this outcome in the student writing assignments they assessed. Although Outcome 3 is one of the university's student learning outcomes for IL, librarians and faculty concluded that unless a student explicitly references legal, ethical or social implications associated with information in their papers or reflective essays, assessing evidence of this outcome will always be problematic, if not impossible. To this end, both librarians and faculty encourage students to think critically about these issues in their research and writing and incorporate facets of this outcome into their work when appropriate. This outcome is infused throughout the university curriculum, so students have opportunities to think about and interact with these issues in meaningful ways.

Scores from Table 2 show that indications of the IL levels of students can be determined by applying an assessment rubric to student writing assignments. Additionally, a positive correlation appears between the amount of IL instruction a student receives and the increased evidence of IL in their written assignments. For example, students in both UDIGE (#6) and COMP (#7) received one hour of IL instruction by a librarian as well as one additional hour of IL instruction from their professor and received "Proficient" scores of 2.02 and 2.28 respectively. Additionally, student papers in #8 (UDIGE) were rated as "Proficient" with a score of 2.25. Group #8 reflects a third-year, upper-division course that was co-taught for the entire term by a librarian.

5. Discussion

The findings from this pilot study suggest that a) IL proficiency levels in students can be shown by assessing student writing assignments with a targeted rubric, and b) IL instruction has a positive

correlation to the amount of discernible IL proficiency in students' written work. While the authors expected that incoming first-year students would likely rank in the "Emerging" range for criteria involving *accessing* and *evaluating*, the authors were satisfied to see that students in composition courses that received the most IL instruction scored higher in those areas ("Proficient" scores of 2.61 and 2.28 for groups #7 and #9; see Table 2) than in courses that had little or no IL instruction. The authors were again pleased by a "Proficient" score of 2.61 for group #9: first-year composition students who received two hours of library instruction. Again, the authors had expected first-year student papers to be rated in the "Emerging" range. The authors were excited to find that the two groups that received the highest amount of IL instruction (groups #7 and #9) and also received the highest scores from raters were first-year composition courses. This trend continued with third-year, UDIGE students who received the most IL instruction (scores of 2.25 and 2.02 in groups #6 and #8; see Table 2).

Overall, data from these scores suggest that IL instruction from librarians coupled with IL instruction from course faculty may afford students the best opportunity to achieve IL proficiency (such as the scores from group #7 that show that first-year composition students produced papers rated as "Proficient" after two hours of IL instruction). Additionally, the data suggest that *any* amount of IL instruction to students increases IL proficiency over courses that provide no IL instruction to students at all (see Tables 1 and 2, groups #1, #2, #3).

For both librarians and faculty, this study affirmed the importance of examining the *process* students undertake when conducting research, not simply the papers students produce from that research. The reflective annotated bibliography component of the writing assignments allowed librarians and faculty to chart the steps a student undertook to complete an assignment as well as follow the student's thought process from start to finish in a way that is not usually apparent in final written work. There was an unanticipated benefit to students as well. By allowing students to reflect upon the research process *as they were conducting their research,* students were afforded opportunities to redirect, rethink, celebrate successes or vent frustrations that are not usually present in a traditional written assignment. The annotated bibliography component informed both librarians and faculty as to the clarity of the assignment (from the students' perspective) as well as the effectiveness of the research process the students undertook.

Findings from this study echo those addressed in the literature review: authentic assessment (such as portfolio assessment) was found to be a valid and reliable assessment measure to determine IL levels of students at CI. Additionally, the reflective annotated bibliography assignment illuminated the process students undertake when engaging in research, writing and critical thinking. Partnering with faculty on assessment was beneficial to both librarians and faculty; we share mutual interests in helping students to become information literate, critical thinkers and to be able to achieve university outcomes for student learning. Though our focus on the research process was student-centred, our use of the rubric and subsequent assessment was more tutor-centred. The literature addresses positive aspects in both tutor-centred and student-centred approaches to assessment of student learning. A tutor-centred approach fit our needs. Our study assessed student work that had already been assigned and graded by faculty. As librarians and faculty, we were aware of the scope and pace of instruction that students received in their courses and IL sessions, and we sought to discover evidence of student learning through examination of student writing.

The authors acknowledge limitations of this study. Librarians and faculty had no knowledge of the IL levels of students prior to receiving IL instruction in the courses assessed in this study. Nor was a "pre-test" conducted to generate data that could then be compared to scores received after IL instruction. Because the authors intended to ascertain the IL levels of students *at the time of the study,* no prior data regarding the IL levels of students was pursued. Being able to compare new information with existing data about the prior IL levels of students would have strengthened this study and provided a stronger foundation and clearer direction for future studies. Additionally, raters knew how many hours of IL instruction were given to students prior to rating assignments, which may have introduced an unintentional bias. Another limitation of the study involves the

research assignments themselves. The array of assignments that students selected for their portfolios occasionally made the assessment process difficult (a problem/solution paper was often easier to assess with the rubric than a personal narrative), though the reflective annotated bibliography assignment that was used in the second and third years of the study helped greatly in this area. The authors acknowledge that in rating group assignments, raters did not take into account student learning outcomes for each student in the group, rather the group as a whole. This potentially allowed for group scores to reflect the efforts of the best individual in the group, rather than the efforts of all individuals in the group. All of these issues will need to be addressed in subsequent studies.

The study brought an unanticipated benefit. At CI, a new portfolio assessment system (based on the assessment rubric and annotated bibliography assignment) is in place and is being successfully used by the writing and rhetoric programme. This system also supplies data that is used in the university's accreditation process and generates student characteristic information for the university. Results from this project were used in the California State University Channel Islands *General Education Assessment Plan* (2006) and as part of the report from the Western Association of Schools and Colleges (2007) that accredited the university.

6. Conclusion

Information gathered from our pilot study suggests that IL proficiency levels in students can been determined by assessing student writing assignments, and that a targeted rubric is an effective authentic assessment measure in this endeavour. Our information further suggests that IL instruction has a positive correlation to the amount of discernible IL proficiency in students' written work, and that any amount of IL instruction for students increases IL proficiency levels over courses that provide no IL instruction at all. The data highlighted limitations in our study that warrant further investigation and addressed the potential pitfalls and benefits for librarians seeking to undertake similar assessment efforts. This study highlights the efforts of the authors to partner with faculty, not only in assessing student papers but in creating a rubric and specialised bibliography assignment that can be used by librarians and faculty at their institutions, and emphasises the importance of *process:* the process that students carry out when they participate in research as well as the process that needs to be undertaken by librarians attempting to conduct successful assessment of student work.

Acknowledgements

References

Association of College & Research Libraries. 2000. *Information Literacy competency standards for higher education* [Online]. Available at: http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm [Accessed: 22 October 2011].

Andretta, S. 2005. *Information literacy: a practitioner's guide.* Oxford: Chandos.

Andretta, S. and Cutting, A. 2003. Information literacy: a plug-and-play approach. *Libri* 53 pp. 202-209.

Belanger, J. and Bliquez, R. 2012. Developing a collaborative faculty-librarian IL assessment project. *Library Review* 61(2), pp. 68-91.

Brand-Gruwel, S., Wopereis, I. and Vermetten, Y. 2005. Information problem solving by experts and novices: analysis of a complex cognitive skill. *Computers in Human Behavior* 21(3), pp. 487-508.

Brasley, S.S. 2008. Effective librarian and discipline faculty collaboration models for integrating information literacy into the fabric of an academic institution. *New Directions for Teaching and Learning* 114, pp. 71-88.

Brown, C.P. and Kingsley-Wilson, B. 2010. Assessing organically: turning an assignment into an assessment. *Reference Services Review* 38(4), pp. 536-556.

Brown, K.L. 2003. From teacher-centered to learner-centered curriculum: Improving learning in diverse classrooms. *Education* [Online] 124, n.p. Available at: http://www.questia.com/googleScholar.qst?docId=5002018664 [Accessed 1 June 2012].

Bussert, L. and Pouliot, N. 2010. A model for information literacy self-assessment: enhancing student learning in writing courses through collaborative teaching. In: Mackey, T.P. and Jacobson, T.E. eds. *Collaborative information literacy assessments: strategies for evaluating teaching and learning.* New York: Neal-Schuman Publishing, Inc., pp. 131-149.

California State University Channel Islands. 2006. General education assessment plan. In: Seven-year plan for student learning outcomes assessment [Online]. Available at: http://hdl.handle.net/10139/4922 [Accessed 22 April 2012].

Callison, D. 1998. Authentic assessment. *Library Media Activities Monthly* [Online] 14(5), n.p. Available at: http://www.ala.org/aasl/aaslpubsandjournals/slmrb/editorschoiceb/infopower/selctcallison85 [Accessed 12 April 2012].

Diller, K.R. and Phelps, S.F. 2008. Learning outcomes, portfolios, and rubrics, oh my! Authentic assessment of an information literacy program. *Libraries and the Academy* 8(1), pp. 75-89.

Ducas, A.M. and Michaud-Oystryk, N. 2003. Toward a new enterprise: capitalizing on the faculty-librarian partnership. *College & Research Libraries* 64(1), pp. 55-74.

Fielden, N. and Foster, M. 2010. Crossing the rubicon: evaluating the information literacy instructor. *Journal of Information Literacy* [Online} 4(2), pp. 78-90. Available at: http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/LLC-V4-I2-2010-3 [Accessed 22 September 2012].

Fook, C.Y. and Sidhu, G.K. 2010. Authentic assessment and pedagogical strategies in higher education. *Journal of Social Sciences* 6(2), pp. 153-161.

Fourie, I. and Niekerk, D. van. 1999. Using portfolio assessment in a module in research information skills. *Education for Information* 17(4), pp. 333-352.

Helvoort, J. van. 2010. A scoring rubric for performance assessment in information literacy in Dutch higher education. *Journal of Information Literacy* [Online] 4(1), pp. 22-39. Available at: http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V4-I1-2010-2 [Accessed 22 September 2012].

Hunt, S.K., Simonds, C.J. and Hinchliffe, L.J. 2000. Using student portfolios as authentic assessment of the basic communication course. *Journal on Excellence in Teaching* 11(1), pp. 57-77.

Immroth, B. and Lukenbill, W.B. 2007. Promoting collaboration through a human information behavior study. *Texas Library Journal* 83(2), pp. 66-67.

Jacobson, T.E. and Xu, L. 2004. *Motivating students in information literacy classes.* New York: Neal-Schuman.

Keene, J., Colvin, J. and Sissons, J. 2010. Mapping student information literacy activity against Bloom's Taxonomy of Cognitive Skills. *Journal of Information Literacy* [Online] 4(1), pp. 6-20. Available at: http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V4-I1-2010-1[Accessed 22 September 2012].

Knight, L.A. 2006. Using rubrics to assess information literacy. *Reference Services Review* 34(1), pp. 43-55.

Mark, A.E. and Borouff-Jones, P.D. 2003. Information literacy and student engagement: what the national survey of student engagement reveals about your campus. *College & Research Libraries* 64(6), pp. 480-493.

McGuinness, C. and Brien, M. 2007. Using reflective journals to assess the research process. *References Services Review* 35(1), pp. 21-40.

Moskal, B.M. 2000. Scoring rubrics: what, when and how. *Practical Assessment, Research and Evaluation* [Online] 7(3). Available at: http://PAREonline.net/getvn.asp?v=7andn=3 [Accessed 2 April 2012].

Oakleaf, M. 2007. Using rubrics to collect evidence for decision-making: what do librarians need to learn? *Evidence Based Library and Information Practice* [Online] 2(3). Available at: http://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/261/524 [Accessed 2 April 2012].

Oakleaf, M. 2009. Using rubrics to assess information literacy: an examination of methodology and interrater reliability. *Journal of the American Society for Information Science and Technology* 60(5), pp. 969-983.

Oakleaf, M. 2011. Are they learning? Are we? Learning outcomes in the academic library. *Library Quarterly* 81(1), pp. 61-82.

Pausch, L.M. and Popp, M.P. 1997. *Assessment of information literacy: lessons from the higher education assessment movement* [Online] Available at: http://www.ala.org/acrl/publications/whitepapers/nashville/pauschpopp [Accessed 22 September 2012].

Rockman, I.F. 2002. Strengthening connections between information literacy, general education, and assessment efforts. *Library Trends* 51(2), pp. 185-198.

Rosenshine, B. and Stevens, R. 1985. Teaching functions. In: Wittrock, M.C. ed. *Handbook of research on teaching.* New York: Macmillan, pp. 376-391.

Scharf, D., Elliott, N., Huey, H.A., Briller, V. and Joshi, K. 2007. Direct assessment of information literacy using writing portfolios. *The Journal of Academic Librarianship* 33(4), pp. 462-478.

Schug, M.C. 2003. Teacher-centered instruction: the Rodney Dangerfield of social studies. In: Leming, J., Ellington, L. and Porter-Magee, K. eds. *Where did social studies go wrong?* [Online] Washington, DC: The Thomas B. Fordham Foundation, pp. 94-110. Available at: http://208.106.213.194/detail/news.cfm?news_id=317&pubsubid=875 [Accessed 17 July 2012].

Schuh, K. 2004. Learner-centered principles in teacher-centered practices? *Teaching and Teacher Education* 20, pp. 833–846.

Sharma, S. 2007. From clarity to chaos: using the research portfolio to teach and assess information literacy skills. *Journal of Academic Librarianship* 33(1), pp. 127-135.

Smith, K.R. 2001. New roles and responsibilities for the university library: advancing student learning through outcomes assessment. *Journal of Library Administration* 34(4), pp. 29-36.

Snavely, L.L. and Wright, C.A. 2003. Research portfolio use in undergraduate honors education: assessment tool and model for future work. *Journal of Academic Librarianship* 29(5), pp. 298-303.

Sonley, V., Turner, D., Myer, S. and Cotton, Y. 2007. Information literacy assessment by portfolio: a case study. *Reference Services Review* 35(1), pp. 41-70.

Stevens, D.D. and Levi, A. 2005. *Introduction to rubrics: an assessment tool to save grading time, convey effective feedback, and promote student learning.* Sterling, VA: Stylus Pub.

Walsh, A. 2009. Information literacy assessment: where do we start? *Journal of Librarianship and Information Science* 41(1), pp. 19-28.

Western Association of School and Colleges. 2007. *Report of the WASC visiting team*, *Educational Effectiveness Review, California State University Channel Islands* [Online]. Available at: http://www.csuci.edu/accreditation/WASC Site Team Report EER06.pdf [Accessed 13 May 2011].

Yousef, A. 2010. Faculty attitudes toward collaboration with librarians. *Library Philosophy and Practice 2010* [Online] (annual volume). Available at: http://unllib.unl.edu/LPP/lpp2010.htm [Accessed 11 Nov 2011].

Appendix A: Rubric

Criterion	Questions	Emerging	Proficient	Advanced
Accesses needed information effectively and efficiently.	**Does the student create a search strategy?**	Student creates an ineffective search strategy using limited and/or inappropriate research methods.	Student creates a search strategy using somewhat varied and appropriate research methods.	Student creates a thorough search strategy using a variety of appropriate research methods.
	Does the student allow an appropriate amount of time to implement the search strategy?	Student develops an unrealistic or inadequate timeline for implementation of the search strategy.	Student develops a realistic timeline for implementation of the search strategy.	Student develops a flexible timeline that allows for implementation and revision of the search strategy.
	Does the student gather a variety of sources?	Student gathers insufficient and/or inappropriate sources of limited variety.	Student gathers sufficient and somewhat varied sources.	Student gathers numerous and varied sources in multiple formats.
Evaluates information and its sources critically.	**Does the student evaluate sources for relevance, accuracy and credibility?**	Student fails to or is unaware of how to evaluate sources for relevance, accuracy and credibility.	Student evaluates sources for relevance, accuracy and credibility.	Student uses critical thinking to evaluate sources for relevance, accuracy and credibility to establish his or her own authority.
Explains the economic, legal, social and ethical issues surrounding the use of information.	**Does the student demonstrate an understanding of intellectual property and fair use of copyrighted material?**	Student demonstrates little or no understanding of intellectual property and fair use of copyrighted materials.	Student demonstrates a working understanding of intellectual property and fair use of copyrighted materials.	Student demonstrates a comprehensive understanding of intellectual property and fair use of copyrighted materials.

Appendix B: Rubric score sheet

Reviewer:
Product Type:
Annotated Bibliography: Yes   No   **Type:**
Original Assignment Information
Semester/Year: **Professor:**   COMP   UDI

1.   **The information literate student accesses needed information effectively and efficiently (CSUCI GE Outcome).**

     X   Rater cannot determine.

     1   Emerging.   Student creates an ineffective search strategy using limited and/or inappropriate research methods. Student develops an unrealistic or inadequate timeline for implementation of the search strategy. Student gathers insufficient and/or inappropriate sources of limited variety.

     2   Proficient.   Student creates a search strategy using somewhat varied and appropriate research methods. Student develops a realistic timeline for implementation of the search strategy. Student gathers sufficient and somewhat varied sources.

     3   Advanced.   Student creates a thorough search strategy using a variety of appropriate research methods. Student develops a flexible timeline that allows for implementation and revision of the search strategy. Student gathers numerous and varied sources in multiple formats.

2.   **The Information literate student evaluates information and its sources critically (CSUCI GE Outcome).**

     X   Rater cannot determine.

     1   Emerging. Student fails to or is unaware of how to evaluate sources for relevance, accuracy and credibility.

     2   Proficient. Student evaluates sources for relevance, accuracy and credibility.

     3   Advanced.   Student uses critical thinking to evaluate sources for relevance, accuracy and credibility to establish his or her own authority.

3.   **The information literate student explains the economic, legal, social, and ethical issues surrounding the use of information (CSUCI GE Outcome).**

     X   Rater cannot determine.

     1   Emerging.   Student demonstrates little or no understanding of intellectual property and fair use of copyrighted materials.

     2   Proficient.   Student demonstrates a working understanding of intellectual property and fair use of copyrighted materials.

     3   Advanced. Student demonstrates a comprehensive understanding of intellectual property and fair use of copyrighted materials.

Hours of IL Instruction: **Type of IL Instruction:**

Appendix C: Annotated bibliography assignment

<u>Reflective Annotated Research Bibliographies</u>

Instructors: you may want to begin the search process by asking your students to reflect upon the following:

- What is my research question? (OR: "have I developed a research question based on my assignment?")
- What would a GOOD resource for this assignment/research question look like? Where would I look for good resources for my question or assignment?
- Who is my audience? (Instructor? Peer?) What type of resources will be accepted by my audience?

Students: create an annotation (length of annotation to be determined by instructor) including the following components:

- Citation of the work, using either MLA, APA style (ie: author, title of the work, date of publication, publisher, page numbers, etc.)
- Main focus or purpose of the work—what is this resource that I've found? (ie: is it a journal article, web site, press release, etc.) What is the scope or purpose of the work? What makes it a GOOD resource for my assignment/research question?

Students: you may want to consider the following questions when creating your annotations:

- Does currency matter when choosing resources for my topic?
- Who is the intended audience for this resource? Is it discipline –specific or written for a general audience?
- What is its usefulness or relevance of the resource to my research topic?
- Are there economic, social or ethical considerations related to this resource- ie: is it from a subscription database or free on the Internet? Is the author of the resource an authority on the topic? Can I detect author bias in the resource?

Students, once you've created an annotation, assess the annotation in light of your research question:

- How will I use (or not use) this resource to address my research question or assignment?
- In light of this first resource, what will my NEXT resource look like? Do I need to refine/adjust my research question? Do I need to locate a different type of resource to address my research question or assignment?

Students, repeat the above process of creating annotations for your additional resources, continuing to reflect upon the research process as you continue to develop or refine your research question. **[assignment continued on next page]**

Sample Annotation*

Finneran, K. (2001). What's food got to do with it?
  ***Issues in Science and Technology 17*, 24-25.**
In this editorial, Finneran questions why many people on both sides in the debate over the safety of genetically engineered food base their arguments on speculation, rumor, and emotion rather than scientific research. He references an article by Harvard biologist Richard Lewontin. Lewontin discusses an anti-genetic engineering physicist whose arguments are based on Hindu scripture instead of lab results and pro-genetic engineering scientists who advertise "Golden Rice" (a genetically engineered variety of rice rich in beta carotene) as a benefit for victims of malnutrition who lack vitamin A, even though many people suffering from malnutrition are too weak to properly metabolize the beta carotene into vitamin A.

Kevin Finneran is editor-in-chief of *Issues in Science and Technology*, a policy journal sponsored by the National Academy of Sciences, the National Academy of Engineering, and the University of

Texas at Dallas, making him someone qualified to write about forming opinions on scientific matters.

This editorial serves as a cautionary reminder that sensible decisions on important issues must be grounded in fact and not influenced by vague fears, unrelated beliefs, unwarranted enthusiasm, or knee-jerk emotional reactions.

Students, consider the following questions as you reflect upon the research process:
- Am I satisfied with the amount and quality of my resources? Do I have enough variety and breadth of resources to successfully complete my research question or assignment?
- Was the search process I used adequate to complete my assignment? What could I have done differently to yield more useful/relevant resources or to make the search process more efficient?

*Annotation example from Florida Gulf Coast University Library Services:
http://library.fgcu.edu/RSD/Instruction/handouts/writing%20an%20annotated%20bibliography.pdf