Student Learning Outcome Information Literacy Instruction 2020_21

Parameters and Timeline

This study assessed the Applied Research Techniques ("r") skill, the goals of which are:

> *1. To identify and select the most appropriate investigative methods or information retrieval systems.*
> *2. To identify, locate, and retrieve information.*
> *3. To use information effectively to accomplish a specific purpose.*

The assessment was designed for Spring 2020. Due to the disruptions caused by the SARS Covid-19 pandemic, it was postponed to Fall 2020.

At this time, the decision was also made to apply the assessment solely to first-year seminar (FYS) courses, as opposed to all courses with "r" designation. FYS course instructors and liaison librarians applied three rubric categories to student work in December 2020/January 2021.

Survey Design and Methods

The assessment was designed by the Dean of Academic Success, the Information Literacy Librarian (who is also the coordinator for the ART skill), and two other members of the teaching faculty. This team created a plan using both the original ART language and a rubric used in previous assessments (2016-2018). We also discussed rater feedback and other lessons learned in earlier iterations.

The new plan addressed each part of the skill separately:

Pt. 1. To identify and select the most appropriate investigative methods or information retrieval systems.

> Librarians administered a written survey to students during or shortly after instruction sessions. 119 responses were received from 13 FYS courses. The survey prompted students to reflect on their search process, and was scored using the rubric in Appendix I.

Pt. 2. To identify, locate, and retrieve information.

> Librarians collected research assignments and final student work from course instructors. 98 assignments were received from 10 FYS courses. They then determined whether the work matched assignment criteria for both the number of sources used, and whether those sources were of the required type(s). See rubric in Appendix II.

Pt. 3. To use information effectively to accomplish a specific purpose.

> Faculty, in consultation with librarians, adapted the rubric from 2016-18 to their course's research assignment. 104 faculty scores were received from 10 FYS courses; faculty applied their rubric as part of the final grading process. See rubric examples in Appendix III.

Changes from 2016-18

Assessment of Pt. 3 with course-specific rubrics addressed the fact that previous results indicated a need for flexibility. FYS instructors use a range of research assignments: while some assign several brief projects, others focus on one research paper. Formats also vary: ART is often paired with writing projects, but also with oral presentations or creative work. While this variety will always present challenges to comparing results across courses, it was felt that direct involvement of the course faculty would give us more accurate measurement of each students' success.

Other limitations from 2016-18 were also addressed. First, investigative methods are almost impossible to divine from a final product such as a research paper or presentation. Our previous assessments attempted to measure student success in ART pt. 1 (*identify and select the most appropriate investigative methods…)* from the use of search "key words," which students recorded in their bibliography annotations. However, the use of one element of search strategy to substitute for the whole was problematic. To capture a set of data that would better represent the full range of methods, the new assessment used a reflective writing prompt.

The 2016-18 process also included a rubric category for ART pt. 1 (…*or information retrieval systems.)* After the library's implementation of a discovery system in 2017 this category had become largely irrelevant and it was therefore removed.

Scoring and Inter-Rater Reliability

In scoring, each group's focus was aligned with their role in FYS instruction: librarians took the lead in assessing search strategy, source numbers and type; faculty looked at how successfully students integrated their sources into the final product.

ART pt. 1 (Appendix I) was scored by the liaison librarians. The team reviewed, then scored a sample of 10 student responses. This was followed by a discussion to norm our responses and ensure shared understanding of both standard and rubric.

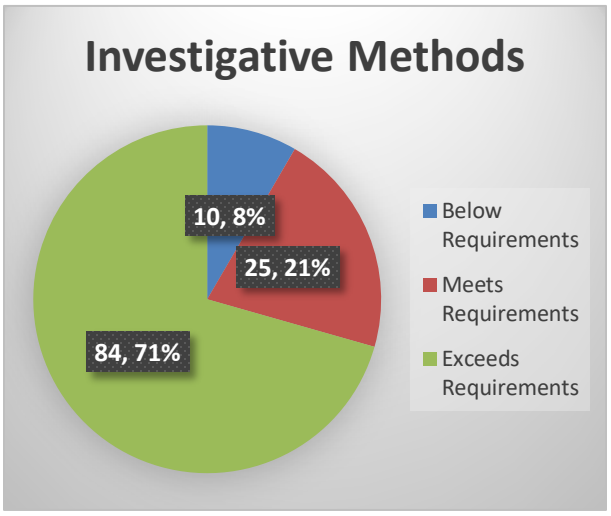
Each response was scored twice, and the scores were reconciled. Reconciliation during the scoring meeting was achieved through discussion; discrepancies remaining after our session were resolved by soliciting a third librarian to break the tie.

ART pt. 2 (Appendix II) was scored by the liaison librarians; each librarian used the assignment instructions from the course instructor to score work from those seminars for which they had provided instruction.

ART pt. 3 (Appendix III) was scored by the course instructors, who were asked to incorporate this process during grading (with the caveat that scores for the assessment did not need to be included in their grades).

Used Appropriate Investigative Methods: Pt. 1 Results

- Below Requirements: 8%
- Meets Requirements: 21%
- Exceeds Requirements: 71%



To meet requirements, the team determined that students had to mention two separate steps or strategies for discovering and selecting sources. 92% of students either met or exceeded requirements.

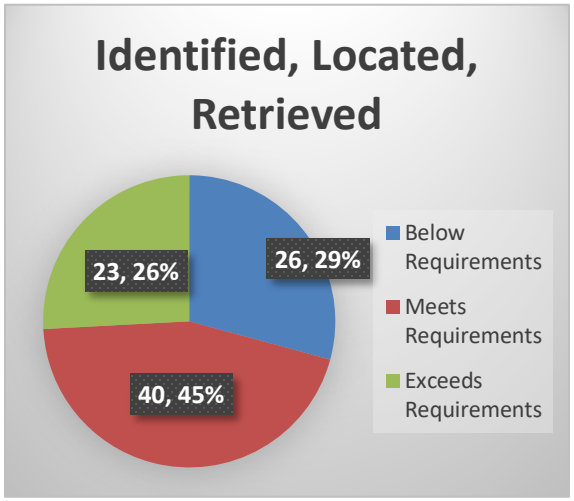
Acceptable answers included methods for:

- structuring and revising a search
- using different databases
- seeking out different source types
- evaluating sources

In the "exceeded" category some students named as many as nine different strategies.

Identified, Located and Retrieved Information: Pt. 2 Results

- Below Requirements: 29%
- Meets Requirements: 45%
- Excellent: 26%



Since one professor did not specify a required number of sources in the assignment, work from this course (nine students) was labeled as "N/A" for this category.

To exceed requirements a student's bibliography had to include more than the minimum required number of appropriate sources. The number of sources required varied; also, particular formats were required for some but not all courses.

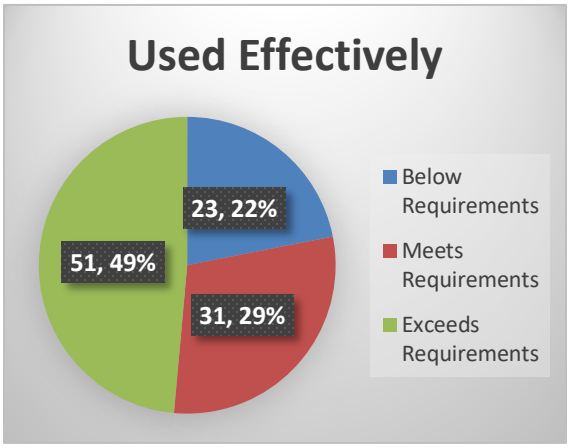
When we exclude the "N/A" work, 71% of bibliographies either met or exceeded the professor's requirement for identifying, locating and retrieving appropriate sources.

Used Information Effectively To Accomplish a Specific Purpose: Pt. 3 Results

- Below Requirements: 22%
- Meets Requirements: 29%
- Excellent: 49%

78% of students either met or exceeded requirements for using information effectively in their projects.

As discussed on pg. 2, assignment requirements varied between courses and course instructors had the opportunity to adapt suggested rubrics before applying them.



Limitations

Note: collection of materials for Pt. 1 happened separately from Pts. 2-3: while the reflective writing prompt was administered during the instruction sessions that tend to take place early or mid-semester, Parts 2-3 assessed student work after completion. It is also possible that we collected survey responses from students who did not complete their assignments or conversely, final work from students who failed to take the Pt. 1 survey. We therefore should consider these parts separately.

When assessing results across FYS courses it must always be kept in mind that assignments vary. One of the FYS courses included in the assessment had students working in teams; all other courses assigned individual projects.

ART Pt. 2 required matching student work to assignment criteria for the number of sources used, and one should note that it is clearly more difficult for a student to reach "Exceeds Expectations" for a 10-source bibliography, than one requiring only half that number. Also, finding nine good sources and skating by with only two both score in the same category, "Below Expectations."

Additional variation can be found in Pt. 3 – as mentioned on pg. 2, scores in this category were applied to various types of student work by each individual course instructor. While this should improve assessing success on the individual level, comparing results across FYS is of limited value.

Finally, as has been noted in previous reports, while information literacy (IL) should be an integral part of both general education and first-year learning, ART is not ideal when we use it to determine success by focusing solely on students' first semester of college. The research clearly shows that IL strategy and methods are learned iteratively; a more effective standard and curriculum will include information literacy in the first year, then return to reinforce and further develop understanding in the later years.

Conclusions

Our results show that a comfortable majority of our first-year students succeed in meeting or exceeding the requirements for the ART skill: they search for, identify and use information effectively in their research projects. The pool of student work collected for this year's assessment was larger than in previous years, which can give us additional confidence in the final numbers.

Note that Fall 2020 brought extraordinary challenges: online instruction, masked and distanced instructors and students – some hybrid classrooms incorporated both types simultaneously. As these conditions were projected to result in learning loss for at least some students, it can be seen as very good news that numbers were not significantly reduced.

The redesign of ART Pt. 1 assessment was a success. The reflective writing prompt produced a rich set of responses which addressed a broad range of investigative methods. Beyond determining understanding across the entire FY class, librarians can analyze these in preparation for next year's round of FYS instruction. For example, we can compare the relative strengths of various seminars.

Assessment of ART Pt. 3 - a complex and important part of the ART standard - was also improved, applied by a large group of teaching faculty rather than a small team of raters. This had been identified as a limitation in previous years; we hope that this year's scores can be seen as more genuinely indicative of student success.

Previous conclusions had also identified Pt. 3 for improvement in teaching: for example, in 2016 we noted students had difficulty articulating their findings in annotations. The success rate was 50%, and the suggestion was made for additional emphasis on making sure students could express the purpose of research. Improvement of the success rate to 70% in 2018 and 78% this year may suggest improvement in the approach taken by liaison and instructor teams. There are caveats: while our sample this year was larger than those used in 2016-18, given course and assignment variety in FYS exact comparison is always a challenge. We should also note that there could be difference in how course instructors rate this category, instead of assessment teams. Ultimately, whether we are improving or only staying steady, librarians and instructors should clearly continue to emphasize purpose and meaning in the teaching of information literacy.

The significant difference in the number of students performing "Below Expectations" – 8% for Pt. 1, 29% and 22% for Pts. 2-3 – might lead us to contemplate what happened to those students who start out stronger than they finish. One potential solution is integrating librarian support during the latter stages of the assignment: for example, a review of student draft bibliographies could prevent students' underperforming when it comes to including the correct numbers and types of sources.

Finally, the changes in the design and execution of this year's assessment point to the another benefit of increased faculty involvement: course instructors and their liaison librarians have been brought into a conversation about results. While it is common for us to plan together before a course begins, it happens far less often that we jointly reflect afterward. This assessment will help us complete the design cycle as we consider, evaluate, and plan to adjust our instruction going forward.

Appendix I: Survey and Rubric for ART pt. 1

Survey Language:

Please write for 3-5 minutes:
Outline the different steps you will take, and strategies you will use, for finding and choosing sources you will use for your research project.

Scoring:

As specified in the class session, the student has:	**Exceeds Requirements**	**Meets Requirements**	**Below Requirements**
Identified and selected the most appropriate investigative methods.	Student mentions three or more separate steps or strategies for discovering and selecting sources.	Student mentions two separate steps or strategies for discovering and selecting sources.	Student mentions one or no steps or strategies for discovering and selecting sources.

Appendix II: Rubric for ART pt. 2 (same as 2016-18)

As specified in the assignment, the student has:	**Exceeds Requirements**	**Meets Requirements**	**Below Requirements**	**N/A**
Identified, located, and retrieved information	Exceeds number of appropriate sources required.	Meets minimum number of appropriate sources required, in total and type.	Number and/or types of sources are incomplete.	Source numbers and types are not required in the assignment.

Appendix III: Rubrics for ART pt. 3

Note that course instructors were encouraged to adapt these rubrics to better match their specific research assignments.

Suggested Rubric for Annotated Bibliographies (same as 2016-18)

As specified in the assignment, the student has:	Exceeds Requirements	Meets Requirements	Below Requirements
Used information effectively to accomplish a specific purpose	Annotations communicate all required information about the source with coherence, depth, and clarity.	Annotations communicate all required information about the source, e.g. • Main ideas • Relevance to the topic • Quality of the source	Annotations are missing required components, or are poorly executed.

Suggested Rubrics for Research Paper (new in 2020-21)

Example 1: Sources as evidence

As specified in the assignment, the student has:	**Excellent**	**Meets Requirements**	**Below Requirements**
Used information effectively to accomplish a specific purpose	Sources are used throughout to provide significant and compelling evidence.	Sources are mostly used to provide significant evidence.	Statements are not supported, and/or sources are included without providing significant support.

Example 2: Sources as integrated into an argument

As specified in the assignment, the student has:	**Excellent**	**Meets Requirements**	**Below Requirements**
Used information effectively to accomplish a specific purpose	Sources are integrated into a well-organized argument using the students' own voice.	Sources are mostly well-integrated.	Sources are presented without being integrated into the students' own voice.