

Measuring the Impact of Information Literacy Instruction on Assignment-Level Learning Outcomes

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Abstract

Using artifacts created by students while completing research-oriented course assignments, this study will evaluate the impact of library-provided information literacy instruction on students' learning outcomes. In particular, this study will seek to understand the types of information literacy instruction that are most effective, the times during a student's course of study that instruction is most impactful, and the types of students that most benefit from instructional interventions. Additionally, this study will evaluate the cumulative and long-term effects of instructional interventions on students' acquisition of critical thinking and information literacy skills, and will assist the IUB Libraries in allocating instructional resources and developing course-level and curriculum-level instructional interventions that are most effective, impactful and sustainable.

Purpose

As part of their information literacy¹ instructional programs, IUB librarians teach more than 200 classes per year and contribute to the development of departmental curricula throughout the university. These instructional services represent a significant commitment of time and resources for the Libraries' faculty, and while the Libraries are confident that they represent a critical and important aspect of their academic mission, assessing the impact of these information literacy interventions has proven difficult, particularly when utilizing high-level student success measures such as in-course or cumulative GPA, retention, and completion. The effect of information literacy instruction is typically very difficult to isolate and identify among other variables that are more strongly predictive for these high-level outcomes. For this reason, this study proposes to examine the effect of information literacy instruction on assignment-level student artifacts, which should enable more fine-grained measurements of students' learning outcomes.

This study will focus on three IUB curricula with which the Libraries have established long-term cooperations in information literacy instruction and that have most intensively utilized the Libraries' instructional services: biology, business, and SPEA. Artifacts from students' research assignments that focus on information literacy and critical thinking skills will be obtained from courses in each of these curricula and will be analyzed to assess how well students demonstrate these skills. This study will include both courses that utilize the Libraries' instructional interventions and courses that do not, which will provide a natural experiment for directly observing and evaluating the impact of instructional interventions. The Libraries' long-term relationship with these programs will further allow for the development of a method to classify different types of information literacy instruction, and for tracking what types of instruction

¹ Information literacy is defined as the set of abilities required for individuals to recognize when information is needed, and to locate, evaluate, and effectively use the required information.

students have had over several semesters, thus enabling an evaluation of the cumulative effect of multiple instructional interventions.

The dataset created by the evaluation of these student artifacts will be linked to other student-level data via enrollment records and the course CLA numbers. This will allow the investigation of the impact of information literacy instruction on additional student success indicators. The dataset may also be linked to the results of the Standardized Assessment of Information Literacy Skills (SAILS) survey conducted in Fall 2015, which measured students' abilities across eight skill sets related to identifying, locating, retrieving, evaluating and documenting information sources, and which will provide data points for comparative analysis are not linked to specific assignments. Together, these datasets will allow this study not only to measure the effectiveness of information literacy instructional interventions, but also to investigate how the interrelationships between course sequences, library instruction, and students' preparedness and skill levels affect assignment-level learning outcomes.

Significance & Outcomes

This research will enable the Libraries better understand the efficacy of their information literacy instructional programs, and will help identify the types of instruction that have the most impact, the times in students' course curricula that instruction is most effective, and the characteristics of students that most benefit from instruction. From these results, this study will also suggest best practices and approaches for integrating library and information literacy instruction within other IUB programs.

The results of this study will provide a basis for measuring the benefits of information literacy instruction on students' assignment-level learning outcomes both in courses that receive information literacy instruction and in future courses taken after these instructional interventions. Evaluating these cumulative and long-term effects of information literacy instruction will not only contribute to the Libraries' understanding of how students obtain information literacy and critical thinking skills, but will also help the Libraries to implement instructional interventions at the most effective locations and times in a student's course of study.

By creating a method that will contribute the Libraries' ongoing evaluation of their instructional programs, this study will assist the Libraries in allocating instructional resources and developing course-level and curriculum-level instructional interventions that are most effective, impactful and sustainable.

Methods

Artifacts of students' research assignments will be collected from courses in each of the three participating programs. As of fall 2016, eight course instructors have agreed to participate, and a similar number is expected to participate in spring 2017. A set of rubrics will be developed to assess information literacy skills demonstrated in the student artifacts and to classify the types of information literacy instruction the students have participated in during their courses. A team of raters will norm these rubrics and assign scores to the artifacts. The results of these evaluations, as well as variables from library instruction records, institutional student records, and the SAILS

survey, will be analyzed using a combination of correlation, ANOVA, and regression tests to identify and evaluate the effect of information literacy instruction.

Measures of Success

Developing a method for evaluating the impact of library instruction at the course level that can be applied across IUB Libraries is a key measure of success for this project. Once this method is in place it will allow the Libraries to build a longitudinal dataset based on assignment-level student artifacts, which will provide a basis for ongoing assessments of the impact of the Libraries' information literacy instructional programs.

Previous Research Results

As part of the 2015-2016 learning analytics fellows program I conducted an analysis of impact of course-level library instruction in 2014-2015. While this study suggested that library instruction had a positive impact on students' final course grades for students at the lower end of expected performance spectrum, it also demonstrated both the difficulty in using GPA measures to evaluate library instruction outcomes and the need for more fine-grained assignment-level analysis to understand the acquisition of information literacy skills. Preliminary analyses of information literacy instruction in the biology curriculum has additionally supported the finding that that library instruction sessions have a greater impact on students in the lower range of academic achievement, and has shown that information literacy interventions have a significant positive impact on students' performance in future biology courses. Together, these results suggest that a detailed analysis of assignment-level outcomes will be a fruitful avenue for inquiry into the effects of information literacy instruction.