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“This Is What Learning Looks Like!” Backward Design and the Framework in First Year Writing

Jenny Mills, Claire Wiley, and Judy Williams

Abstract: The Framework for Information Literacy for Higher Education calls on librarians to teach complex concepts rather than discrete skills, but many librarians have struggled with implementing such teaching. This article reports on a revised lesson for information literacy instruction in First Year Writing classes, created using Grant Wiggins and Jay McTighe’s backward design framework. Wiggins and McTighe’s model focuses on teaching “enduring understandings” and designing lessons and assessments that provide evidence of student learning. The authors employed a scaffolded approach to teaching the concept “searching as strategic exploration,” providing successive levels of temporary support to move the students toward greater independence and asking them to document and reflect on their searches. Results indicate that backward design is a valuable planning model that may increase student learning and collaboration with faculty.

Introduction

Library instructors, like all teachers, aspire to design learning experiences that create “aha” moments in their students. Teachers want to see learning take shape in the minds of students as they struggle through an activity and then cross the threshold to greater understanding. Librarians teaching information literacy (IL) concepts strive for this ideal but are often frustrated when students fail to grasp the main concepts of a lesson. Librarians at Belmont University in Nashville, Tennessee, knew they had discovered something important when an English faculty

member and long-time library collaborator said, “This is what learning looks like!” The librarians had followed a revised library instruction session for the faculty member’s First Year Writing class developed using Grant Wiggins and Jay McTighe’s backward design model.¹

After years of demonstrating search techniques in class and then observing students quickly revert to their old, less effective search methods, the authors knew it was time for a change. Assessment results of in-class student work only confirmed that students often missed the big picture in terms of conducting research. Why did they abandon the search strategies taught to them in class? Why did they fail to see searching as a process, an intellectual exercise that would help them develop good topics and work out appropriate research questions? While search engines and databases continue to improve, students still struggle with this aspect of conducting secondary research. “Formulating effective and efficient searches” was one of four categories of difficulties identified by the Project Information Literacy study “Learning the Ropes,” which surveyed college freshmen on their information-seeking habits. A majority of the students reported that they found searching the academic literature daunting. Nearly three-fourths of the sample (74 percent) said they struggled with selecting keywords and formulating efficient search queries. Over half (57 percent) admitted feeling “stymied by the thicket of irrelevant results their online searches usually returned.”² At Belmont, library instruction for First Year Writing focused on these two most difficult research tasks: coming up with keywords to narrow down searches and filtering and sorting through irrelevant results.

The revisions began with the new Association of College and Research Libraries (ACRL) Framework for Information Literacy for Higher Education. The Framework helped to refocus the librarians’ efforts, but they needed an intimate understanding of the principles of backward design to teach the big ideas of the Framework.³ Previously, standards-based library instruction

for First Year Writing was organized around teaching a set of discrete skills, such as brainstorming keywords, identifying controlled vocabulary, and using Boolean connectors. Even if students mastered the mechanics of searching, which many never did, they still demonstrated only surface-level learning. They employed few or none of the search strategies taught and showed little refinement or improvement as they went along. The Framework, with its focus on more complex concepts, knowledge practices, and dispositions, was a welcome change from the former ACRL Information Literacy Competency Standards for Higher Education. The Framework expressed what students failed to “get” about searching for information with the concept “Searching as Strategic Exploration.”⁴ The language of the Framework helped librarians articulate what they wanted students to achieve. But although the work of Wiggins and McTighe was mentioned in the Framework, librarians grappled with using it to teach the essential concepts of information literacy. Only when the instruction coordinator took an online class on backward design did the library instructors achieve their own “aha” moment that caused them to reflect on and rethink their habits related to planning, teaching, and assessing.⁵

The basic idea of backward design is to focus on the big ideas or enduring understandings that students should remember long after the instruction concludes. Teaching begins with the end, or the desired results, in mind. Once instructors have identified the learning outcomes, or what students should know or be able to do as a result of instruction, instructors determine how students will demonstrate their learning.⁶ In the fall of 2016, Belmont librarians used a revised lesson that reflected a backward approach to instructional design with initial assessment indicating improved student learning. They revised the lesson again in the fall of 2017 and gathered evidence, including student work, English faculty feedback, and librarian reflections, that all points toward improved teaching and student learning.

Literature Review

Many educators recognize that backward design is not a radical new idea but one that may prompt changes in thinking about habits related to planning, teaching, and assessing. Grant Wiggins and Jay McTighe formally introduced their model in their book *Understanding by Design*. It calls for designing lessons with the end in mind but also crafting lessons with a focus on developing and deepening the understanding of important ideas or concepts. The authors promote the teaching of “big ideas,” with such an idea defined as “a concept, theme, or issue that gives meaning and connection to discrete facts and skills.”⁷ The work of Wiggins and McTighe is well-known throughout the instructional design field, and the scholarly literature of various disciplines reveals numerous examples. C. R. Marshall and Lyna Matesi describe a redesign of an organizational behavior course, using student feedback to identify the enduring understandings of the course.⁸ A 2014 article by Jan Emory describes the application of backward design principles to nursing curricula, thereby generating more authentic learning, understanding, and transfer of learning to applications in the field.⁹ In a 2015 article relating backward design to the teaching of the scientific method, Huda Alenezi explains how the process generates an intrinsic motivation to learn. Students are more engaged with content that they perceive as relevant and valuable, and are more motivated to master it.¹⁰ Kelly Massey finds ways to apply the backward design process to an art curriculum for young children, thereby avoiding activity-focused teaching. She develops lessons that are “anchored to big ideas and responsive to core interests” of children.¹¹ In a broader higher education context, Nancy Michael and Julie Libarkin reference the absence of specific pedagogical training for higher education faculty. Michael, a new instructor, and Libarkin, her more experienced mentor, worked together

over a six-month period to design a new course using the backward design model. They discovered that the model “has the potential to generate courses with direction and purpose that would otherwise be missing.”¹² Heather Reynolds and Katherine Dowell Kearns developed a backward design-inspired planning matrix that guides the structure of a single class period or unit of instruction. They advocate flipping the classroom with a pre-class assignment, a “hook” to engage and motivate students at the beginning of class, and active learning activities in the classroom designed to lead students to deeper learning. By using this design, they found that “the feel of the classroom shifted to that of a learning community.”¹³

Although Wiggins and McTighe are mentioned in the introduction to the Framework for Information Literacy for Higher Education, few examples in the library literature explicitly discuss how backward design changed instructional practices or student learning outcomes. Many of the earliest mentions occur in the school library literature, well before the Framework was created.

Backward Design in the School Library Literature

In 2010, Jean Donham, writing about the school library environment, asked, “Does the library curriculum have ‘enduring understandings’ for students to take away from learning experiences in the library?”¹⁴ She cites the perspective of David Loertscher, Carol Koechlin, and Sandi Zwaan that learning often stops when students arrive at the answer and fail to reflect on what that answer means in the broader context of their knowledge.¹⁵ Marjorie Pappas urges library media specialists to adopt a backward design model to connect their lessons to state standards and to provide evidence of student learning. She shares her “Designing Learning for Evidence-Based Practice” matrix to help in the planning process. The matrix “provides a sequence of steps or a process for designing learning with documentation or evidence of the learning outcomes” based

on the principles of backward design.¹⁶ Hilda Weisburg and Ruth Toor write that many state standards require learning units to be framed in terms of essential questions. Weisburg and Toor reference *Understanding by Design* when explaining the difference between objectives and essential questions and write that “essential questions can be answered by learners once they have attained Enduring Understandings.”¹⁷ They go on to identify enduring understandings and essential questions from the American Association of School Librarians Standards for the 21st-Century Learner, presenting their examples as a guide for library media specialists to create their own understandings and questions for their teaching units.

Backward Design in the Academic Library Literature

One example from the higher education library literature provides a detailed description of the three-stage process of backward design for a variety of delivery formats including face-to-face, flipped, and online environments. The author places the third stage, the implementation of learning activities, in the context of key learning theories, which she argues instructors should use to decide how students will acquire new knowledge, skills, and understandings.¹⁸ Examples from the higher education library literature tend to focus on how backward design can be used as a collaborative tool or to improve assessment. Bruce Fox and John Doherty describe a case study in which librarians, faculty, and instructional designers created podcasts to deliver IL instruction. They emphasize the importance of such collaborations with a focus on student learning outcomes, backward design, and intentionality to help students learn, an approach they call “intentional teaching.”¹⁹ In a 2014 article, Kacy Lundstrom, Britt Anna Fagerheim, and Elizabeth Benson present backward design as a way for librarians to collaborate with writing instructors. They describe a summer workshop at Utah State University in Logan in which they worked alongside instructors to revise IL learning outcomes for the introductory courses in the English

writing program.²⁰ The authors found value in having all stakeholders participate in the design process, creating “a trusting, collaborative environment.” They noted that, had the librarians attempted the revisions independently, they would have achieved less impact and support from the English instructors.²¹

Ada Emmett and Judith Emde write about using backward design to improve assessment tools for a chemistry bibliography class. In the third iteration of their three-year study, Emmett and Emde changed the way they created assessment questions for students to better demonstrate their degree of competency. After mapping each assessment question to an ACRL Standards performance indicator or outcome, they developed lectures and assignments that would address each outcome. The study was a first attempt at using the *Understanding by Design* model. Seeing the potential for improvement, the authors planned “to be more rigorous in using the backward design method to develop assessment questions directly from the desired outcomes.”²² While these studies focus on how backward design can improve collaboration and assessment of IL instruction, the current study adds to the literature by taking an in-depth look at how backward design changed the planning process, and how, as a result, it improved student learning and faculty satisfaction with the instruction.

The study also provides an example of how to teach using the Framework, which many library instructors have struggled to implement. There are many examples in the literature related to teaching the Framework, but few mention *Understanding by Design* by name, even if they cover some of the same principles. In addition to Wiggins and McTighe’s work, the Framework is also informed by the concepts of threshold concepts, knowledge practices, dispositions, and metacognition. Much more than backward design, threshold concepts have received the most attention in the library literature.

Some of the earliest mentions of threshold concepts are by Lori Townsend, Korey Brunetti, and Amy Hofer. In their seminal work, “Threshold Concepts and Information Literacy,” they introduce threshold concepts as the “core ideas and processes that define the ways of thinking and practicing for a discipline, but are so ingrained that they often go unspoken or unrecognized by practitioners.”²³ They posit that using the threshold concept framework allows instructors to focus on big ideas and to prioritize instructional content, all principles of backward design. In critiquing the Standards, they point to Wiggins and McTighe, who themselves identified problems typically associated with content standards, such as too much content, a wide variation in learning outcomes, and the vague nature of some standards that lead to difficulties in assessment.²⁴ They credit Wiggins and McTighe with suggesting that content standards need to be reframed to focus on the “big ideas” of a discipline.²⁵ In a subsequent article, they identify seven threshold concepts for information literacy.²⁶ Focusing less on threshold concepts and more on the developing Framework, Nicole Pagowsky asserts that the *Understanding by Design* model is one of few instructional design models that develops deeper understandings and promotes inquiry.²⁷ She addresses some of the principles of backward design by promoting a “pedagogy of inquiry,” which “can emerge from the Framework through a focus on holistic teaching and designing instruction from big questions.”²⁸

Other works offer more practical guidance on implementing the Framework. Trudi Jacobson and Craig Gibson offered some curricular and instructional structures for implementation.²⁹ ACRL published a book, *Teaching Information Literacy Threshold Concepts: Lesson Plans for Librarians*, that includes lessons for each of the six frames. The book does not mention Wiggins and McTighe, but it focuses on a threshold concepts approach to teaching

information literacy and emphasizes the importance of writing lesson plans, recommending a lesson design model called Instruction Theory into Practice.³⁰

The authors identified only a few studies that mention the Framework and backward design explicitly. Rachel Scott examined whether undergraduates could comprehend the concepts presented in the Framework to improve their conceptual understanding of research practices. She planned the curriculum of a credit-bearing course using the Framework and backward design.³¹ Another study designed one-shot instruction sessions with a focus on the threshold concepts of the Framework and backward design, in addition to using the ARCS (attention, relevance, confidence, and satisfaction) model of instructional design and BEAM (background source, exhibit source, argument source, and method source) to teach source evaluation, thus creating a toolkit for instruction librarians “that allows a new approach to balancing, theory, practice, and innovation in the classroom.”³² More research on how to achieve this balance for information literacy instruction is warranted. A 2018 survey of information literacy practices found that the largest number of respondents (41 percent) did not use the Framework to inform their instruction, with most focusing on skills rather than on threshold concepts. Almost half (49 percent) felt that they were not meeting instructional goals.³³ The authors propose that using the backward design method can help library instructors with implementation of the Framework.

Background

The information literacy program at Belmont’s Bunch Library began in 2005 with the hiring of an instruction coordinator. This program started with 81 classes in the first year and has grown to 239 during the 2017–2018 academic year. It targets courses in the general education curriculum to achieve IL learning outcomes. At Belmont, the general education curriculum is called the

BELL Core (the Belmont Experience: Learning for Life). The purpose of the BELL Core is to foster the “skills, knowledge, perspectives, values, and dispositions that will enable students to apply their understandings and abilities beyond the classroom, encouraging them to become responsibly engaged in their community and in the world.”³⁴ The five core learning outcomes of the BELL Core are (1) connecting disciplines, (2) communication, (3) collaboration, (4) critical thinking, and (5) citizenship, all of which echo themes from information literacy. These similarities make the program a natural opportunity for partnership with librarians.

Bunch Library’s IL program is rooted in three foundational courses in the BELL Core, First Year Seminar, First Year Writing, and Third Year Writing. Librarian participation in these courses has been steady, and learning outcomes and pedagogies have evolved over the years. Engagement in the first-year courses, First Year Seminar and First Year Writing, is especially high, with 87 percent and 82 percent participation rates for the fall 2017 semester, respectively. Many professors who teach these courses are highly invested in the development of critical thinking skills. They also use innovative teaching practices and willingly experiment with new pedagogies, which makes these courses fertile ground for collaboration with librarians on IL initiatives.

Before the Framework, the First Year Writing lesson plan targeted ACRL Standard Two, “The information literate student accesses needed information effectively and efficiently.”³⁵ Learning outcomes focused on the search process and included such skills as conducting background research, brainstorming to focus a topic, developing keywords, and generating an appropriate research question. The curriculum for IL sessions in First Year Writing has evolved based on in-class assessments, librarian reflections, and feedback from writing instructors.

The first iteration of this IL session opened with a discussion on brainstorming keywords and an introduction to search strategies, including using Boolean operators and subject headings, and then transitioned to a brief demonstration of a general library database. Following the demonstration, the librarian distributed a handout that guided the students through this process for their own topics. The librarian walked around the classroom to assist as needed. At the end of the class session, the students took up the in-class activities, which were listed on the handout. The librarian instructor then assessed a sample of the worksheets using a rubric. After using this lesson plan for two years, librarians updated their instruction plan to eliminate the use of the outdated paper handout, to incorporate more technology, and to use a flipped classroom approach, in which students learned new content on their own prior to the class session and used class time for projects and discussions.

The second iteration of this IL session was based on the same ACRL Standards and learning outcomes, but it utilized new digital pedagogies. Prior to their class sessions with a librarian, students completed a pre-assignment that included watching a video on brainstorming keywords and filling out two columns of an online spreadsheet, one with their topic ideas and one identifying initial keywords. Before the class sessions, the librarians looked at the spreadsheets to see the topics students would work on and to count how many had completed the pre-assignment. Most students did the full pre-assignment ahead of class, but many filled in keywords on the online spreadsheet when they sat down in the library session without having seen the pre-assignment video or thoughtfully considered words to explore their topic. Librarians opened class with a discussion on the research process, emphasizing its iterative nature. They then demonstrated the search process in a general library database and filled out the columns on the online spreadsheets for a sample topic, including identifying subject headings, one article,

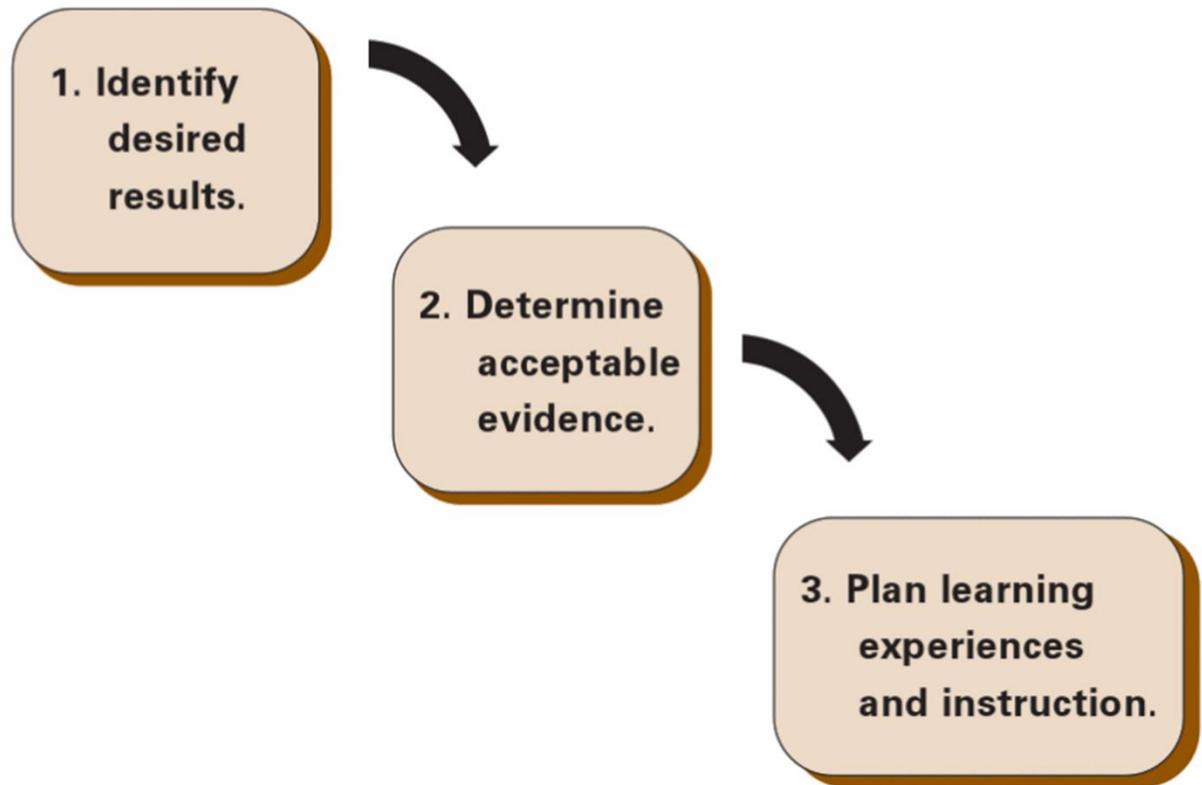
and one book. They noted ways to revise and refine the search based on initial searches and sources. Students then had time to work on their own topics and on the online spreadsheets they began in the pre-assignment. While the online spreadsheet improved on the paper handout previously used, the linear format contradicted the librarians' goal to demonstrate the iterative nature of the research process. Many students rushed to complete each cell without really engaging with their topic or the databases. The librarians knew the format needed to change to synchronize with the learning outcomes.

By this time, the ACRL Framework was launched and inspired librarians to approach IL instruction in a more holistic way. The authors identified the frame "Searching as Strategic Exploration" for this lesson plan. The detailed description of this frame is "searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops."³⁶ This description perfectly articulates the goals for students in First Year Writing. The authors wanted students to engage more deeply with the research process and provided multiple opportunities for them to experience and understand the cyclical nature of this process. With these end goals in mind, the authors turned to the backward design process to revise the First Year Writing lesson plan.

Revising the Lesson Plan

With the "big idea" or "enduring understanding" for student learning articulated by the Framework, the authors, like many instruction librarians, struggled to figure out how to teach these more complex concepts, especially within the confines of a one-shot instruction session. Learning more about backward design caused them to stop and reflect on their habits related to planning, teaching, and assessing IL instruction.

The logic of backward design suggests a planning sequence for instruction that has three stages (see Figure 1):



[Figure 1]

1. Identify desired results—What should students know and be able to do? This includes discrete skills as well as big ideas, or as Wiggins and McTighe call them, “enduring understandings,” or as the Framework calls them, “threshold concepts.”³⁷
2. Determine acceptable evidence. How will students demonstrate that they have achieved the desired results? What is acceptable evidence?
3. Plan learning experiences and instruction. Teaching methods, resource materials, and activities are all chosen last.³⁸

Throughout each iteration of First Year Writing instruction, Belmont librarians have become more mindful of the need for outcomes and assessments. Stage one of the planning sequence and their learning outcomes included the following expectations:

After completing this class, students will be able to

- Conduct background research to focus a topic, develop keywords, and generate an appropriate research question.
- Use subject headings to refine and focus searches.
- Conduct searches in a general library database using multiple search boxes and available limiters.
- Identify the reasons that an initial search may not be successful and revise appropriately.

Next came stage two, determining the evidence. Instead of searching on their own topics, the redesign called for students to work in groups in class to problem-solve their way through a “failed search,” one that was unsuccessful in producing results. At some point, all students have experienced a “failed search” and the difficulty of figuring out what to do next. Thus, it was an authentic assessment that required students to demonstrate a meaningful application of essential knowledge to a real-world task. For the activity, students had to work together through the places where they got stuck. The end result was not to simply find an article and check off the box but to improve their search results. The idea of the “failed search” came from an article by Ika Datig, in which she writes that “how [students] handle that difficulty is the true measure of their learning.”³⁹ Like Datig, the authors wanted students to focus on the process of searching, not just on the end product, and to reflect on how they struggled throughout the process. The new worksheet asked them to not only problem-solve their way through the “failed search,” trying different search terms and strategies, but also to “show their work, not just give an answer.”⁴⁰

With backward design, assessing for understanding requires that students explain their learning. The revised in-class worksheet asked them to select the search strategy that produced the best results and to comment on how the results improved as they tried additional terms and strategies. It was a first attempt at getting students to explain their understanding of the larger concept.

Finally came stage three, the learning plan. An influential feature of this stage was the idea of sequencing or scaffolding instruction to give students multiple opportunities to make sense of their learning. There are many examples of instructional scaffolds that help support students through a new task, whereby the instructor is the facilitator and students share the responsibility of learning as they gain more knowledge and skills. There are many different types of scaffolds, from examples, to concept maps, to visual scaffolds, to question stems. A simple scaffold, and the one that the authors modified, follows four steps:

- First, the instructor does the task.
- Second, the class does it.
- Third, the small group does it.
- Fourth, the individual learner does it.⁴¹

The first step, the instructor demonstration, was delivered to students using a flipped classroom approach. Prior to the class session, students watched a brief demonstration video and worked through a LibWizard tutorial that introduced the mechanics of searching. Using the flipped approach, students were more prepared to quickly start the in-class activity. The class began with the second step, with the librarian and the class working together to develop the in-class searching worksheet. The librarian asked students for keywords that would be relevant to the sample search topic. Third, groups of students worked their way through the sample “failed search,” completing the rest of the worksheet together. Asking students to do a sample search in

groups rather than search on their own topics individually was a major change to the in-class lesson. Although some researchers have concluded that students make good use of individual search time, Belmont librarians were not satisfied with the productivity of some students.⁴² More importantly, they felt that students needed an intermediary step to make sense of what they learned from the demonstrations. The backward design model advises that understandings cannot simply be told to students. Instead, learners must actively construct them.⁴³ Working on the search strategies together, students practiced their new skills and learned from one another. Each group reported their results to the class, a form of peer teaching that allowed students to further reflect on their understanding of the concepts and skills.

For the fourth and final step, individual students completed a follow-up assignment after class so they could practice independently and demonstrate what they learned. Although the in-class activity asked students to reflect on the search process by refining their search and commenting on the improvements, the follow-up assignment went a step further, asking for more in-depth reflection. It required students not only to document their search strategies but also to identify two useful sources, read them, and comment on what they learned from the information, explaining what new questions arose and what new terminology they identified that could further their search.

Assessment Methods and Findings

The revised lesson was delivered to all participating sections of First Year Writing in the fall of 2017. Four assessment methods were used to measure the effectiveness of the new lesson plan: (1) a group activity completed in class, (2) a recommended follow-up assignment for students to complete after their library session, (3) librarian reflections, and (4) a faculty survey.

The in-class group activity was designed with the goal of gathering evidence of student learning (see Appendix A). All 37 First Year Writing classes taught during the fall 2017 semester did the activity. To comply with Institutional Review Board (IRB) protocol, a description of the study and contact information for the primary investigator were projected on the screen at the end of class. If students consented to participate in the study, they left their completed group worksheets in an envelope at the front of the room upon departure from class. A total of 178 group worksheets were collected.

Following the final First Year Writing class of the semester, librarians convened to begin the formal assessment. The 178 worksheets were numbered, and a random sample of 100 was selected to be assessed using the rubric the librarians had designed (see Table 1). After two rubric norming sessions, each librarian assessed two-thirds of the sample, which meant that every worksheet was evaluated by two librarians. Scores were averaged to produce the final number. The scores, shown in Table 1, indicate that students did well with developing search terms and improved at identifying relevant subject headings from their search results. The ability to create new searches using combinations of keywords and subject headings is still a work in progress. Most students still need additional opportunities to develop effective problem-solving through the search process. Lower scores on this criterion may also be due to time constraints of an in-class activity and students' limited knowledge of the sample research question provided.

The second potential point of assessment was a follow-up assignment designed to reinforce the concepts and skills the librarian taught in class (see Appendix B). The assignment had two parts. The first part was the same as the in-class group activity, but students used their own research topics instead of the sample provided during class. The second part, unique to the follow-up assignment, asked students to identify two sources and read them. Then students were

directed to reflect on what they learned and identify new questions raised by this fresh knowledge. Two First Year Writing instructors expressed interest in implementing the follow-up assignment, and each instructor taught two sections of the course, for a total of four sections. These four sections enrolled a total of 85 students, and 49 turned in a completed follow-up assignment. Of the 49 completed assignments, 24 consented to the use of their completed work in the study. The librarians assessed these follow-up assignments using the same rubric designed for the in-class activity, with an added element that evaluated the reflection component of part two. Table 1 shows the follow-up scores according to the rubric. Notably, the students improved on the third criterion, “Demonstrates effective problem-solving through the search process,” when they had more time to complete the exercise and search on their own topics.

Table 1.
Assessment rubric for First Year Writing, fall 2017

	Advanced performance 3	Developing performance 2	Beginning performance 1	Unsatisfactory performance 0
Develops appropriate keywords	Lists multiple keywords and synonyms that reflect thoughtful engagement with the topic In class: 84% Follow-up: 65%	Lists multiple keywords and synonyms that are relevant to the topic In class: 14% Follow-up: 26%	Lists minimal or superficial keywords In class: 2% Follow-up: 4%	Does not list any keywords or synonyms In class: 0% Follow-up: 0%
Identifies subject headings to refine searches	Lists at least three subject headings relevant to the topic In class: 60% Follow-up: 61%	Lists at least two relevant subject headings In class: 13% Follow-up: 22%	Lists minimal or irrelevant subject headings In class: 6% Follow-up: 0%	Does not list any subject headings In class: 21% Follow-up: 17%

Demonstrates effective problem solving through the search process	Revises and refines search by using keywords and subject headings that further develop the topic In class: 25% Follow-up: 35%	Revises search demonstrating initial improvement in search terms In class: 38% Follow-up: 43%	Revises search but does not demonstrate improvement In class: 11% Follow-up: 13%	Does not revise search In class: 26% Follow-up: 4%
Reflects on search process and refines search appropriately	Lists sources and includes multiple questions prompted, ideas learned, or keywords identified, and in-depth reflection on how to revise initial search Follow-up: 52%	Lists sources and includes one additional question prompted, idea learned, or keyword identified; begins to reflect on how to revise initial search Follow-up: 35%	Lists sources and evaluates them for relevancy but without reflection on revising or refining the search process Follow-up: 4%	Lists sources without any evaluation or reflection on revising or refining the search process Follow-up: 9%

[Table 1]

Librarian reflections on the revised lesson plan were the third point of assessment. Librarians’ reactions to this lesson design were overwhelmingly positive. The advantages of the new format included engaging the students prior to class; using group work to include all students in the class activity; having learners engage in a form of peer teaching when reporting on their work during class, holding them accountable; and rather than lecturing, offering active learning, in which students become actively engaged in assimilating the material instead of passively absorbing it. The anecdotal feedback that librarians received from faculty throughout the semester was positive and encouraging.

A faculty survey at the end of the semester assessed faculty satisfaction with the changes to the lesson plan and sought insight into how faculty thought the instruction impacted their students. The survey had both open-ended and Likert-type scale questions. The survey went to 22 faculty members, and 12 completed it, for a 55 percent response rate. The questions focused on the content and effectiveness of the lesson, and respondents chose “agree” or “strongly agree” for all Likert-type scale statements. Open-ended responses and additional comments from respondents were enthusiastic, including “This year was fantastic” and “This year’s workshop was the best ever.” The Belmont writing faculty strongly support the library, the librarians, and the IL program, and their continued engagement is a measure of the value they place on the librarians’ work.

Discussion

The current lesson plan for First Year Writing provides for student engagement, faculty support, and real-time assessment. The authors have worked through several versions of the lesson, moving from skills-based tasks that can be completed quickly to activities that require more critical thinking and intellectual input.

The in-class activity that resulted from the backward design planning process deeply engaged students, something with which the authors struggled in the past. The peer teaching portion of the class encouraged accountability and, along with the flipped classroom approach, minimized the time spent in class with a librarian demonstrating or lecturing, thus increasing active learning and student engagement.

Students demonstrated significant progress in the development of keywords and identification of subject headings. They brainstormed keywords during class with librarian assistance to get started. The task of revising searches using the results retrieved was more

complex and required more practice and experience than one class session could provide. Sample questions for the in-class group activity were tailored to the themes or research assignments of each class, to be relevant and meaningful to the students. Anecdotal evidence collected through librarian observation revealed creative thinking and innovative searching within the groups. For the most part, students willingly shared their searches and results, and some even presented their search strategies in front of the class.

Although only 24 students permitted their follow-up assignments to be evaluated, the assignments that were assessed show promise. They exhibited thoughtful reflection on the research process, an ongoing goal of the entire process, not only for classwork but also for lifelong learning. Eighty-seven percent of students scored “developing” or “advanced” in the field “Reflects on search process and refines search appropriately.” Working individually and without the time constraints of the in-class session, students demonstrated a greater understanding of this learning outcome, an essential principle of backward design.

The Framework helped to solidify the major concepts of information literacy for the authors, who saw how the threshold concepts fit what they wanted to teach in the IL program. They knew what they wanted the students to learn but had not used that knowledge, nor articulated those outcomes, at the beginning of the lesson design. Previously, the authors concentrated on what they would do in the classroom, such as lectures, demonstrations, or student activities. They expected or hoped that students would grasp what was being taught. Working backward from desired outcomes, through how students would demonstrate understanding, to planning the in-class activities helped the authors focus on how the instruction involved the students.

The authors hope to build on the initial success of the backward design model by consulting with more faculty on the planning of follow-up assignments and then expanding that model to other courses. This ideal model would move away from the one-shot instruction session toward an entire unit of instruction, in which more complex IL concepts could be taught. The authors had recommended follow-up assignments for several years but got little support from faculty. Lundstrom, Fagerheim, and Benson predicted that scenario in their article “Librarians and Instructors Developing Student Learning Outcomes: Using Frameworks to Lead the Process.”⁴⁴ The present study demonstrated that backward design offers an effective way to collaborate with faculty, especially to write learning outcomes. The authors see great potential in using backward design to help convey the concepts of the Framework. Library instruction involves more than just teaching students where to click. Backward design can help develop agreed-upon “enduring understandings” that students need to be successful researchers.

Conclusion

The authors plan to continue to use backward design to plan IL instruction and think it can be used for many different learning environments. Wiggins and McTighe wrote that backward design is not meant for single lesson planning, but the authors found it useful for developing a one-shot for multiple sections of the same course. Of course, using backward design to plan an entire unit of instruction might be ideal. In addition to their seminal first work, Wiggins and McTighe also published *The Understanding by Design Guide to Creating High-Quality Units* in 2011.⁴⁵ Librarians can use many other training resources to familiarize themselves with *Understanding by Design*. Jay McTighe’s website includes a wealth of materials, from planning templates, to examples of essential questions, to assessments.⁴⁶ For information literacy-specific examples, the University of North Carolina has a website, “Information Literacy by Design,” that

includes an overview of *Understanding by Design*, lesson plans, and planning templates.⁴⁷ For librarians who desire to teach more complex concepts of the Framework, to increase critical thinking skills of their students, and to cultivate meaningful collaborations with faculty, backward design holds great potential.

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Appendix A

First Year Writing Library Instruction In-Class Group Activity

Searching as Strategic Exploration of a Topic

Part I: Starting Your Search

(1) Explore your topic idea. What do you hope to learn about this topic through your research?

What are some questions you want to answer?

Sample Research Question: What is the value of trying new things?

(2) Brainstorm keywords. Write down the main concepts from number 1 in the top three boxes below; then, write at least two synonyms or related terms for each of those concepts in the connected boxes.



[Figure 2]

(3) Search Academic Search Premier using different combinations of the keywords above. What combination of keywords gave you the best results? Display your search terms in the boxes below.

Searching: **Academic Search Premier** | [Choose Databases](#)

<input type="text"/>	Select a Field (optional) ▾	Search	
AND ▾ <input type="text"/>	Select a Field (optional) ▾		Clear ?
AND ▾ <input type="text"/>	Select a Field (optional) ▾		+ -

[Figure 3]

(4) Identify some subject headings in the database that may help you refine your search. List at least three subject headings. Each group must share a unique subject heading with the class, so have a few to choose from!

(5) Try some additional searches using different subject headings, keywords, or combinations of the two. Display your favorite revised search in the boxes below. Did your search results improve? If so, how

Appendix B

First Year Writing Library Instruction

Searching as Strategic Exploration of a Topic

Consent: The library faculty are conducting a study on the effectiveness of their lesson for First Year Writing. We would like to use completed assignments to assess what students learned. For the purposes of the study, all identifying information will be removed. Participation is completely voluntary. Please indicate your preference below. If you have questions about the study or how your information will be used, please contact: jenny.mills@belmont.edu.

Yes, I consent to the use of my assignment

No, I would prefer that my assignment not be included in the study

Part I: Starting Your Search

See Appendix A for Part I of the assignment used for the in-class activity and follow-up assignment.

Part II: Refining Your Search

Select two relevant sources and read them to learn about your topic. For each source, provide the Modern Language Association (MLA) citation and explain why each source is relevant, what you learned from each source, and what new questions each prompted. Also, identify any new terminology that might be useful going forward. Then, describe how you would continue searching for additional information. What new search terms might you use? Would you search different databases? How did these two sources prompt you to revise your search for information?

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