Embracing Threshold Concepts:
Or How I learned to Stop Worrying and Love the Framework

Heather Galan James and Elizabeth Andrejasich Gibes*

The body of discourse including both proponents and critics of threshold concepts for information literacy continues to grow as more librarians and institutions apply them to their instruction[1] (Morgan, Wilkinson, Beilin, ACRLog, Oakleaf, Pagowsky). Many of the case studies offered have focused on the efforts of one or two librarians in partnership with one or two faculty,[2] which is not surprising given the language of the Introduction that points to the inherent design of the Framework to be individually implemented.[3] How can the nuanced teaching that offers knowledge practices and the attentive evaluation that gathers insight into students' dispositions be offered across an instruction program including multiple librarians and faculty? While studies and arguments about implementing the ACRL Framework explore transferability of instruction that was designed under the now retired ACRL Information Literacy Competency Standards for Higher Education, there is still room for consideration of how the six frames and the threshold concepts within can guide an instruction program on a larger scale.[4] In this paper we will describe the process of developing a curriculum in collaboration with faculty from the First Year English (FYE) program that intentionally builds in the lenses of the Framework throughout a semester's instruction. In doing so we argue for the value and feasibility of the Framework's approach in a large scale embedded librarian model.

In January 2016, the English department at Marquette University began piloting a new curriculum for the second course in the two-part First-Year English (FYE) program. ENGL 1002: Public Literacies is designed to "introduce students to research in action by focusing on critical literacies specific to public writing" (program website). The curriculum intertwines research and multimodal composition into a semester-long inquiry-driven writing project that culminates in a white paper and undergraduate research display. As the program website describes, through the course "students read, watch, listen to, and analyze public discourse as preparation for identifying a current social problem, researching its evolution, and advocating for a solution in formal writing and a multimodal format suitable for public display at a campus-wide Undergraduate Research Celebration."[5]

In general, the newly developed curriculum creates a more individualized experience, and warrants individualized instruction from both librarians and instructors. In the previous curriculum, there were a series of disconnected research paper units where students were required to write a 5–7page paper containing 3–5 sources. In contrast, the white paper can range from 10–30 pages and students' bibliographies typically contain anywhere from 10–25 sources or more. The white paper research is described to students as a "process" and takes three quarters of the entire semester to complete. Students are expected to "revise and resubmit" and thus the research

* Heather Galan James is Coordinator for Digital Programs & Collections at Marquette University, Heather.James@marquette.edu; Elizabeth Andrejasich Gibes is Digital Scholarship Librarian at Marquette University, Elizabeth.Gibes@marquette.edu.

and inquiry components of their process are not partitioned into a particular portion of the semester. They are expected to research, analyze, synthesize then repeat multiple times as their inquiries narrow and they wrangle with proposed solutions for their problem-based white paper issue. With this reiterative process comes opportunity to introduce many of the more complex concepts outlined in the ACRL Framework, and with that, the challenge of re-working a program that had long relied on a one-shot model for information literacy.

As the coordinators for the library's participation in FYE, we were part of the planning team for the new curriculum pilot, along with five instructors and the FYE Director. As members of the curriculum planning/pilot team, we were able to explicitly name the Framework in how we wanted the library to participate in the course. Along with using the Framework's threshold concepts, the FYE Director called on the WPA Outcomes Statement for First-Year Composition[6] to inform the intended learning outcomes of the course. These two documents—both Framework & Outcomes Statement—complementing and complicating pedagogical approaches, are aligned in their approach as they focus on threshold concepts rather than static skills. While they have distinct language to describe these threshold concepts, it is easy to see their overlapping priorities in areas such as "Knowledge of Conventions" (WPA) and "Scholarship as Conversation" (ACRL) or, even more directly, "Processes" (WPA) and "Information Creation as a Process" (ACRL). Finally, the curriculum is also informed by Ignatian pedagogy, which is a priority throughout many courses on the campus, as Marquette is a Jesuit university. At its core, Ignatian pedagogy fosters a curriculum that is cyclical with many iterations of research-writing-reflection. The combination of the two statements with the Ignatian Pedagogical Paradigm built a space for a curriculum that prioritizes integrated iterative learning.

Once we identified that the threshold concepts could operate as learning outcomes for information literacy within ENGL 1002, we knew that librarians might find their teaching efforts unsuccessful if not fully woven into the curriculum and co-taught and enforced—structurally and pedagogically—by regular classroom faculty. We felt that an embedded program would be the most effective instructional partnership to achieve these aims. As has been previously written about the Framework, it does not play nicely with the typical one-shot session:

> ACRL realizes that many information literacy librarians currently meet with students via one-shot classes, especially in introductory level classes. Over the course of a student's academic program, one-shot sessions that address a particular need at a particular time, systematically integrated into the curriculum, can play a significant role in an information literacy program. It is important for librarians and teaching faculty to understand that **the *Framework* is not designed to be implemented in a single information literacy session in a student's academic career**; it is intended to be developmentally and systematically integrated into the student's academic program at variety of levels. This may take considerable time to implement fully in many institutions."[7]

Though we realize that not every library has a partnership of this depth with an academic program, such that librarians can have this kind of opportunity for collaborative development and embedded instruction, we believe that the intention for partnership and shared responsibility for the learning outcomes of a course must still be the foundation for successfully incorporating information literacy threshold concepts into a course. Just as the introduction to the Framework offers, much of the success in incorporating threshold concepts into information literacy instruction, and for our part introducing an embedded pedagogical approach, relies heavily on a curriculum from the faculty that not only embraces these pedagogies but requires it for success.

During the pilot phase of implementing the new curriculum we were deeply embedded partners in every aspect of delivering the instruction. We attended weekly planning/debriefing meetings with the cohort of instructors and the FYE Director. We paired with these instructors as "Class Librarians" and were added to the learning management system (LMS) for each section using the "Librarian" Role feature so that we could see all the course materials, add to the course content, and have easy communication with students in the course. We read and responded to students' research process documents, and we visited during class periods. We visited frequently. Over the course of the semester we were present for 35 class sessions across the 8 sections of ENGL 1002 taught by the five instructors and the FYE Director. The priority for us during this Spring 2016 semester was to understand the variation with which different instructors would approach this new curriculum with an eye toward how to help standardize and scale the delivery for future semesters when approximately 40 instructors would be responsible for teaching it.

As the pilot semester progressed, there were wide variations among how the FYE Director and the five instructors delivered the course content. Some instructors asked us to join their section(s) twice over the course of the semester, others asked us to be with them more than half a dozen times. Some instructors asked us to help them in covering modes of both scholarly and popular/public communication in class. Throughout the semester we worked with students individually as their research inquiries deepened, and during the final unit of the semester—in which students had to translate aspects of their white paper into an alternative media format—we supported their use of software and discussed intellectual property issues related to reuse of sound and images and their own created works. Without fail, every frame of the Framework was incorporated in either classroom lectures and discussions or one-on-one interactions repeatedly throughout the course. It was a thrilling pilot to be part of, for librarians passionate about information literacy, but it was time intensive and demanded much of our attention and effort for the semester. It left us strained to complete other work and limited in our ability to collaborate with other faculty and courses. In sum, it was not sustainable or scalable. The extremely responsive, deeply embedded approach that we offered in that pilot semester was not one that we could promise for the full program of 40 instructors across nearly 70 sections, even with 11 librarians participating in future semesters.

In the scaled model of this program, we approach librarians' involvement in the classroom in a way that can be both responsive and individualized while also working within our finite resources (e.g. librarians' time). We do this by focusing librarians' classroom interactions as workshop sessions (See Appendix 1). Librarians are still paired to instructors, and all their course sections, as Class Librarians, and they are automatically connected to the LMS site for each of those sections. The relationship with instructors is the main priority of the program so that librarians and instructors can feel equipped to determine the extent of their collaboration in the class. "Stand and deliver" instruction is limited to brief introductions that frame the class period, and the majority of that time is dedicated to guided individualized research during which librarians can work with students individually or in groups. The longer lecture/discussions about scholarly conversations, evaluating sources with very contextual authority, and intellectual property have been subverted into reusable videos and individual student support as they work through their research process. If patterns or common obstacles emerge among students, the librarian might reconvene the large group at the end of class to address these issues, or post a follow-up message in the LMS. Librarians are participating in their paired class sections this way a minimum of twice throughout the semester at strategic moments in the research experience—first during early research as students prepare a proposal for their white paper and again as students draft the full white paper. During the first visit, librarians are there to foster knowledge practices related to Search as Strategic Exploration and Authority is Contextual. They do this by encouraging students to consider sources with an eye toward their: purpose, choices made during creation, value, and intended audience. During the second visit, librarians expect that they will as-

sist students with more targeted research inquiries as they grapple with the complexity of the problem they are addressing and consider many proposed solutions as well as solutions they generate themselves. This includes many of the knowledge practices called out in Research as Inquiry and Scholarship as Conversation. This is the baseline partnership, but many pairs determine additional collaboration elements based on the needs of the students as both the librarian and instructor sees them.

Much of the traditional content that composed the in-class library days have been restructured into two videos (*Search Outside Your Bubble* and *Sleuthing Sources*) that were created as conceptual introductions to searching across resources. *Search Outside Your Bubble* is introduced to students very early in the semester as they begin with a small project that precedes the white paper and which introduces students to searching broadly across public discourse. It prompts and gives ideas for students to intentionally search widely and to recognize some conventions of discourse across social media, mainstream news, and multimedia formats. *Sleuthing Sources*, an 8-minute three part video that addresses how to investigate online sources of varying genres and forms to drill down to their source material, is assigned to students at the beginning of their white paper process. Finally, a course Libguide pulls together the videos along with other sites and tools that we recommend. The guide serves as both portal and stand in for textbook and connects them to subscription library collections as well as open online resources for locating and analyzing the many facets of public discourse, such as Reddit and Google Trends. All of these materials work to supplement the face to face time that librarians have with students in class as well as to facilitate instructors' discussion of these concepts in a recursive manner.

During the final portion of the semester, when students translate highlights from their white paper into an alternative media with a targeted audience in mind, the library's Digital Scholarship Lab—run by Gibes—supports those students who choose to produce their project using digital tools. A final section of the LibGuide provides information for students and instructors regarding fair use and reuse of audio and images, and librarians continue to be available for individual students as they may need. Through these multiple forms of providing guidance, support, and individualized responses to students' needs, we see the six frames of the Framework continuing to be integrated throughout the semester's curriculum.

Much of our programmatic delivery remains untested. While we have affective survey data that shows students and faculty enjoy working with a librarian, and data that shows an influx in number of research consultations (a 200% increase), classroom visits (over doubled classroom interactions) and visits to learning objects, we continue to question what these metrics tells us about impact on student learning. Finding ways to assess the outcomes of increased library involvement, specifically library involvement that facilitates threshold concepts, is more difficult. Doing so becomes nearly impossible without also assessing the curriculum or the instructor on some level. We continue to look for ways that we can measure the numerous moving parts of our program, as does the FYE Director in looking at the curriculum as a whole. However, the very nature of threshold concepts is that they are evidenced by continued, future praxis, and the nature of ENGL 1002 is that the entire course is an effort in having students achieve a myriad of threshold concepts across literacy, communicating, and researching. To this end, any assessment that attempts to measure students' progress from the beginning of the semester to week 16 of the semester is an artificial test of students' process in grappling with threshold concepts. The real evidence of their achievement of these TCs will be shown in students' application of them throughout their following course work (and potentially through their co-curricular participation as well). So, in essence, thoughtful, genuine assessment must be deliberated at the university level following students' trajectories through their academic careers. An assessment of that scale would very likely not be able to divorce specific components of students' academic experience, i.e. interaction with librarians, from the whole of their experience with various faculty and curricula. Even a smaller scale assessment of the semester of ENGL 1002 can't very successfully

assess the library involvement divorced from the entire curriculum. It should arguably be so woven into the framework of the course that it should be impossible to only assess what librarians did and then somehow map that back to certain TCs. Lacking in the literature, are answers to questions like, how many interactions with a librarian are necessary to "cover" a threshold concept? What might happen outside of classroom time to support TC integration within the class? What are the best ways to measure the Dispositions and Knowledge Practices of each threshold concept? And, how do librarians best leverage the great work of instructors to ensure integration of concepts? The work of Meyer and Land[8] repeatedly emphasizes the need for recursive practice with threshold concepts and the need for instructors to listen carefully for students' internalization of TCs. The FYE Director has made this approach to grading a priority across the program's instructors, with emphasis being given to process, progress, and complexity of students' works rather than a static final product rubric. However, it does not appear that we or anyone else has a clear idea of how to assess individual components of the total curriculum for their part in the effectiveness overall. This difficulty in wrangling quantitative measures around threshold concepts is not unique to our experience or philosophy, particularly because the ideal implementation of the Framework is through deep interconnected partnership with the faculty's curriculum.[9] Perhaps, as Maid and D'Angelo argued to embrace threshold concepts is to embrace an ambiguity in assessment, on some level, while grappling with looking at education overall in a new way.[10]

Notes

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3. Association of College and Research Libraries, Framework for Information Literacy for Higher Education, (2015).
4. Julia Bauder and Catherine Rod, "Crossing Thresholds: Critical Information Literacy Pedagogy and the ACRL Framework," College & Undergraduate Libraries 23, no. 3 (Jul, 2016), 252–264. doi:10.1080/10691316.2015.1025323.; Megan Oakleaf, "A Roadmap for Assessing Student Learning using the New Framework for Information Literacy for Higher Education," Journal of Academic Librarianship 40, no. 5 (Sep, 2014), 510–514. doi:10.1016/j.acalib.2014.08.001.
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8. Jan H. F. Meyer and Ray Land, "Threshold Concepts and Troublesome Knowledge 1—Linkages to Ways of Thinking and Practising," in Improving Student Learning—Ten Years On, ed. C. Rust (Oxford: OCSLD, 2003).; Ray Land et al., "Threshold Concepts and Troublesome Knowledge (3): Implications for Course Design and Evaluation," in Improving Student Learning Diversity and Inclusivity, ed. C. Rust (Oxford: Oxford Centre for Staff and Learning Development, 2005), 53.; Jan H. F. Meyer and Ray Land, "Threshold Concepts and Troublesome Knowledge (2): Epistemological Considerations and a Conceptual Framework for Teaching and Learning," Higher Education 49 (2005), 373–388.
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10. Barry Maid and Barbara D'Angelo, "Threshold Concepts: Integrating and Applying Information Literacy and Writing Instruction," in Information Literacy: Research and Collaboration Across Disciplines, ed. Barbara J. D'Angelo and others (Fort Collins, Colorado: The WAC Clearinghouse and University Press of Colorado, 2016) p. 50.

APPENDIX 1 Librarians' Role in ENGL 1002 Course Assignments	
Assignment & Activity	**Librarian's role in the classroom**
Hot Topics research: a three-week unit to introduce students to searching across public discourse, rhetorical analysis and in communicating research in nontraditional digital formats	Students watch an introductory video on searching and interact with additional materials on the course libguide. The library's Digital Scholarship Lab supports the unit's end project: a digital poster display. **Main TCs:** Searching as Strategic Exploration, Information has Value
White Paper Research: Through preliminary searching, students begin to develop a topic and a proposal for their white paper research.	Students watch a second library video. The librarian attends class for workshop day(s). **Main TCs:** Authority is Constructed and Contextual, Searching as Strategic Exploration
Drafting & Revision: Students continue the process of drafting, circling back to research and inquiry several times. As students revise and review their work, they drill further into their research.	Librarians return for another workshop day and many students work one-to-one with their librarian in research consultation. **Main TCs:** Scholarship as Conversation, Research as Inquiry
White Paper Remix: Students transfer their semester-long research into a multimodal exhibit. Many students choose to create websites, brochures, or short videos.	Students use the library's' Digital Scholarship Lab to help envision ways to translate their paper into another genre or format. Students present these works at a multimodal research fair, the FYE Undergraduate Research Celebration, which is held in the library. **Main TCs**: Information Creation as Process, Information has Value