Chapter 17

MIND THE GAP (IN YOUR KNOWLEDGE)

Using the Framework Transit Map

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INTRODUCTION

"If you're going underground, why do you need to bother about geography? It's not so important. Connections are the thing."[1]

When Henry Charles ("Harry") Beck set to work creating his revolutionary map design for the London transit system, he arrived at a vitally important insight: while the underground rail system did connect different geographical points, the experience of travel in that system was not centered around above-ground landmarks and geographical features.[2] His London tube map—especially if it is understood as a system diagram rather than a geographical map—is for this reason uniquely useful for representing the actual experience of navigating public transit, which is determined by the relations and connections among stations or stops rather than the actual landscape. Beck's insight about connections and the user experience of navigating them also makes a tube map–style representation especially useful for diagramming conceptual rather than spatial domains (arguably more effective, in fact, than a number of other alternatives).[3]

One of the obstacles facing academic librarians when it comes to promoting information literacy instruction across the curriculum is achieving faculty buy-in. We need tools for teaching non-library faculty to understand what information literacy instruction entails and how to fully integrate it into their syllabi and assignments. This is especially

important for librarians working in curricular contexts in which one-shot instruction is the institutional norm. Under those conditions, it is the course instructor rather than the librarian who is primarily responsible for reinforcing and assessing information literacy outcomes for the course, which makes it vital for librarians to find a way to make the best use of faculty partnerships for instruction and assessment purposes. In order to promote our end—information literacy—we must sell the Framework to an audience not necessarily familiar with its aims or receptive to our instructional practices and priorities, who must then put the Framework to use. Librarians must find ways to help non-library faculty to navigate the conceptual domain of information literacy.

At the University of Southern Indiana, we have tried to address these obstacles by developing a simple interactive tool—the Framework Objective Generator (FrOG)—for outcome generation and course design brainstorming using the *Framework for Information Literacy for Higher Education*.[4] The tool is structured around relatively simple questions mapped to more complex threshold concepts in the context of a guide through the beginnings of the backward design process. In order to help our users make the most of this tool—and to allow librarians to sell it more effectively—we then created a visualization, the Beck-inspired Framework Transit Map, to represent the concepts at work and the ways in which they are related to each other.

For our purpose, a transit map or diagram reveals and contextualizes the relationships among the knowledge practices through which the threshold concepts that constitute the frames are reached. Instead of viewing each frame in isolation or as a static list of practices and concepts, the transit map design encourages the user to consider each frame dynamically, in terms of the connections and relations among those concepts and practices. This makes it easier (we hope!) for users to visualize the complex network of skills and competencies involved in the development of information literacy skills. Ideally, the Framework Transit Map serves both as a helpful aid to understanding the Framework and as an illustrative process guide for applying it, designed to be attractive to faculty who would otherwise be reluctant to take on what they perceive as the extra work of creating and assessing information literacy outcomes.

Connections, as Beck understood so well, are the thing.

THE PROBLEM

Before we speak in more detail about the Framework Transit Map and how it can be used to help faculty find their way in the conceptual system described by the Framework, it's important to establish a clear understanding of the problem that the tool the map represents is meant to solve. What specific obstacles stand in the way of faculty buy-in for teaching with the Framework? What difficulties do librarians face as faculty partners in the work of promoting, teaching, and assessing student learning with the Framework?

One useful way to describe the most common obstacles to librarian/faculty collaboration for the purpose of information literacy instruction is to break them down into two categories: *structural* challenges and *conceptual* challenges. Structural challenges tend to arise from what Larry Hardesty called "faculty culture": faculty may be reluctant to engage with

library instruction (including information literacy instruction) because of a set of features deriving from the conditions of their training and employment.[5] These conditions include

- a relative lack of formal training as teachers (often combined with an institutionally reinforced preference for research work)
- extensive noninstructional demands on faculty time
- disciplinary hyper-specialization that makes it difficult to take on concepts and practices from other knowledge domains
- a need to defend disciplinary boundaries as a part of asserting and defending intellectual freedom
- for the adjuncts responsible for most introductory-level instruction, a tenuous employment situation that leaves little freedom and less time to devote to course design and assessment[6]

Conceptual challenges tend to arise from the disciplinary peculiarities of how librarians and non-library faculty perform and communicate about their work; librarians and faculty in other disciplines find that they don't speak the same language about student learning and information literacy, and therefore may encounter difficulty in developing a common understanding of the nature of the work needed for information literacy instruction.[7]

There is an additional level of complication in both the structural and conceptual puzzles when we take into account the fact that librarians themselves may not always be comfortable with using the Framework. As Christine Bombaro pointed out in her essay objecting to the implementation of the Framework, librarians may be in a variety of different positions relative to their teaching needs and priorities, and there is in fact no universal consensus on how the Framework is to be interpreted or applied even in a library context.[8] Of particular interest in Bombaro's essay is a distinction she observes between what she calls "philosopher" librarians (faculty librarians with additional advanced degrees, often teaching full-term courses) and "practical" librarians (primarily teaching one-shots).[9] The former, in her analysis, tend to favor the Framework approach and understand it quite differently from the latter, who seem to prefer the more rigorously described Standards and find the Framework vague or jargon-laden to the point of uselessness.[10] If her observations of the different librarian experiences of the Framework are correct, then it's quite likely that the communication problem that affects teaching faculty and librarians on the subject of using the Framework also divides librarians themselves, largely because of the conditions of their education and employment.

Taken together, structural and conceptual challenges frequently result in an unwillingness on the part of non-library faculty to take on the work of information literacy instruction, even when they are willing to treat librarians as partners in the educational enterprise, because of an understandable reluctance to exert unrewarding effort toward the achievement of a poorly understood end. This requires librarians to seek out ways to clarify the goal and core concepts of information literacy instruction and (if possible) simplify and make meaningful the faculty effort required to adopt information literacy objectives and to assess student learning relative to these objectives. It also occasions resistance among librarians uncomfortable with the Framework, which may undermine the effectiveness of efforts to use the Framework for library instruction and to communicate about what teaching with the Framework can accomplish.

THE TOOL

At the University of Southern Indiana, we decided to address these challenges by designing a tool for faculty to use to develop course and assignment objectives aligned with the Framework. This tool, the Framework Objective Generator (FrOG), uses Springshare's LibGuides and LibWizard to create a tutorial that walks users through a set of steps for creating measurable course or assignment objectives. The tool begins the process by presenting a list of simple questions (e.g. "Who's the expert, and why?") that students acquiring information literacy skills should be asking throughout the course or assignment. Each clickable question routes the user to a LibGuide page that presents relevant Framework knowledge practices (hereafter KPs) that have been rewritten as measurable objectives, along with the AAC&U Information Literacy VALUE Rubric outcomes (Outcomes) that map to the listed KPs.[11] A LibWizard tutorial then walks the user through the process of choosing and adapting these KPs to specific course needs. The guide proceeds according to an abbreviated backward design process, assisting users as they develop their own course or assignment objectives and think through how to apply and assess them.

We decided to map the Framework to the AAC&U Outcomes because we wanted the tool to provide our faculty with a streamlined assessment experience. Several campus departments and assessment bodies across the University of Southern Indiana currently use some version or other of the AAC&U Outcomes for program or course assessment, so we chose to map the Framework to learning objective language that was already widely accepted (or at least recognized) among local academic units. As we set out to map the six frames to the five AAC&U Outcomes, our first task was to break down the nebulous one-to-many relationships between the frames and Outcomes and highlight the exact points of interaction between the two conceptual systems (see table 17.1 for a side-by-side list of frames and Outcomes).

Table 17.1
List of ACRL frames and AAC&U Outcomes prior to mapping. Abbreviations indicated with parentheses. Note that we have chosen to use a slightly different convention for abbreviating the titles of the individual frames from other chapters in this book; our one-word abbreviations are drawn from the in-document header bookmarks of the HTML version of the Framework document, primarily to facilitate clarity and ease of recognition in our Framework visualization.

Frames	AAC&U Outcomes
Authority Is Constructed and Contextual (Authority)	Determine the Extent of Information Needed (Determine)
Information Creation as a Process (Process)	Access Needed Information (Access)
Information Has Value (Value)	Critically Evaluate Information and Its Sources (Critical)
Research as Inquiry (Inquiry)	Use Information Effectively to Accomplish a Specific Purpose (Effective)
Scholarship as Conversation (Conversation)	Access and Use Information Legally and Ethically (Ethical)
Searching as Strategic Exploration (Exploration)	

For example, on the surface, it is intuitively obvious that the concepts and abilities addressed in the Authority frame affect two Outcomes: the ability to critically evaluate information and its sources (Critical) and the ability to access and use information ethically and legally (Ethical). Likewise, mastery of the Critical Outcome appears quite naturally to incorporate aspects of all six frames. But, for the purpose of tool navigability (and user sanity), how *exactly* does understanding that authority is constructed and contextual affect the critical evaluation of information? And for the sake of educational assessment, how can we measure that understanding or effect?

The knowledge practices associated with each of the six frames provide the answers to both of those questions. The KPs, as descriptions of learner practices, successfully break down the overwhelmingly broad concepts represented by each frame into distinct, observable microconcepts. Moreover, the majority of the KPs begin (either by accident or by design) with terms that appear in Bloom's Taxonomy of Measurable Verbs,[12] which facilitates measurability in an educational setting. At the start of the mapping process, we reworded any KPs that either lacked a Bloom verb or were excessively verbose in order to provide a consistently and efficiently useful term set. Each KP was then assigned a number, indicating the frame to which it belongs and the order in which it appears in the list of KPs in the original Framework document. For example, we assigned the first KP listed under the first frame (Authority) the number 1.1, the second knowledge practice listed under Authority is KP 1.2, and so on—all the way to the final KP under Exploration: 6.8 (see appendix for the complete list of reworded KPs).

We then mapped each KP to a relevant AAC&U Outcome; most of the KPs belonging to the Authority frame, for example, mapped fairly neatly to the AAC&U's Critical Outcome (see table 17.1 for the basic match list of frames and Outcomes; we've included the entire list of KPs in an appendix at the end of this chapter). Within this structure each KP corresponds to only one frame and only one Outcome (not necessarily the same Outcome for all KPs in a frame). Each frame maps to various Outcomes via its associated KPs, and each Outcome maps to various frames by way of those same KPs. This Framework-to-AAC&U Outcome map provides the fundamental structure of the tool, while the reworked KPs provide adaptable learning objective language for users. The question prompts in the FrOG's LibWizard tutorial then extend beyond the ACRL and AAC&U conceptual models and simple objective generation by prompting users to consider how objectives could be reworded for specific course use, how students will demonstrate mastery of the stated objective, what task mastery looks like, and how the instructor will measure or assess student work relative to the stated objectives for the course or assignment.

THE FRAMEWORK TRANSIT MAP

The tool described above is a complex amalgam of processes, platforms, and conceptual framework mappings on the back end—effectively a Choose Your Own Information Literacy Adventure. In order to facilitate easier use on the front end, we set to work to develop a reasonably straightforward graphic representation of the overlapping intersections of

information literacy skills in the Framework, which would provide FrOG users with a mechanism for visualizing how the objectives generated using the tool relate to the other essential practices of an information-literate individual. We wanted a way to give FrOG users the big picture and also to integrate relevant smaller sections of that picture into different areas of the tool so as to provide users with a sort of "You are here" sign to orient them in their work. This led us to build the Framework Transit Map, modeled on Harry Beck's classic design.

The Framework Transit Map consists of six transit lines, each one corresponding to a frame (figure 17.1). The frames intersect at five transfer points, which correspond to the five AAC&U Outcomes. The smaller, non-transfer stops on each of the frame lines represent frame-specific KPs that constitute the necessary skills an individual must develop in order to demonstrate mastery of the AAC&U Outcomes. Take, for example, the Access Needed Information (Access) transfer point. On the map, there are three lines (frames) that pass through that point: Value, Conversation, and Exploration. The KPs characteristic of users skilled in gaining access to needed information—such as "6.4: Choose search tools that are appropriate to information needs and search strategies," or "3.5: Recognize issues of access or lack of access to information sources" (see figure 17.1)—are located on their associated frame lines prior to (i.e., approaching) the Access transit point, signifying their role in the development of information access practices relevant to each frame.

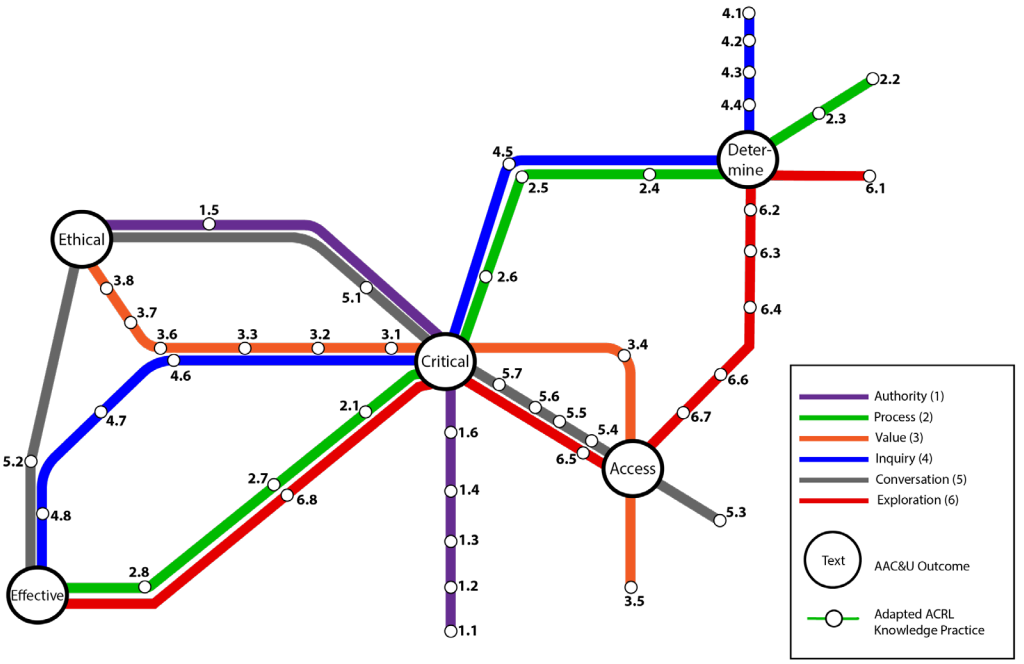

Figure 17.1
The Framework Transit Map

The KP-to-AAC&U Outcome arrangement on the frame lines assumes that travel on the map moves from right to left, although this doesn't mean that users can't backtrack if necessary. Likewise, the AAC&U Outcome transfer points are arranged on the map in a

manner that is meant to represent the realistic, functional progression and interdependence, from right to left, toward each Outcome. In order to access needed information, for instance, it is first necessary to determine the extent of information needed. Likewise, information must be critically evaluated before it can be used effectively to achieve a purpose. The diagram thus pictures not only the basic concepts attached to each frame, but also the information literacy *work* or *process* in action by way of the connections among knowledge practices on the way to Outcomes.

This emphasis on process is precisely the reason why we chose to represent the frames as lines rather than transit points or stops on the map, even though it might have been visually cleaner or simpler to do otherwise. The frames are, by design, dynamic rather than static in form, a noteworthy change from the language of the Standards that the Framework replaced; the "framework" language was deliberately chosen "because [the Framework] is based on a cluster of interconnected core concepts, with flexible options for implementation, rather than on a set of standards or learning outcomes, or any prescriptive enumeration of skills."[13] The Framework is meant to be used to create and conceptualize local processes and outcomes, rather than imposing a fixed set of external requirements on local decision-makers.

Treating the AAC&U Outcomes as transit points, then, reflects a local outcome decision process supported by the Framework's core concepts, which in turn clarifies the work done when a user considers the relevant KPs in order to generate objective language with the FrOG. Because the Framework Transit Map is a process or system diagram rather than an outcome list, the transit points allow users to see the connections among stages in or elements of the information discovery and usage process, complete with the implicit understanding that one may "travel" back and forth along lines as needed (give or take the original right-to-left drive through the overall set of relations represented).

USING THE FRAMEWORK TRANSIT MAP

What, then, might it look like to use the FrOG and the Framework Transit Map to create course or assignment objectives? How might the Framework Transit Map help FrOG users think about the questions they ought to choose and the implications of the answers to those questions? To begin with, let's consider a brief illustration of the user's experience of the FrOG tool (figure 17.2).

When users begin the FrOG process, the first thing the tool shows them is a brief depiction of the frames. The FrOG instructs users to select a theme (where each theme is directly connected to a specific frame), and clicking on a given theme presents users with a set of relatively straightforward questions, presented as queries a student is expected to pose and answer; this part of the process is meant to focus the user's efforts on thinking about how to express their desired course or assignment outcomes (see figure 17.3 for an example of what this looks like). These questions link users to a collection of knowledge practices (each of which is associated with one or more of the AAC&U Outcomes), which are phrased and presented as candidates for use as course or assignment objectives.

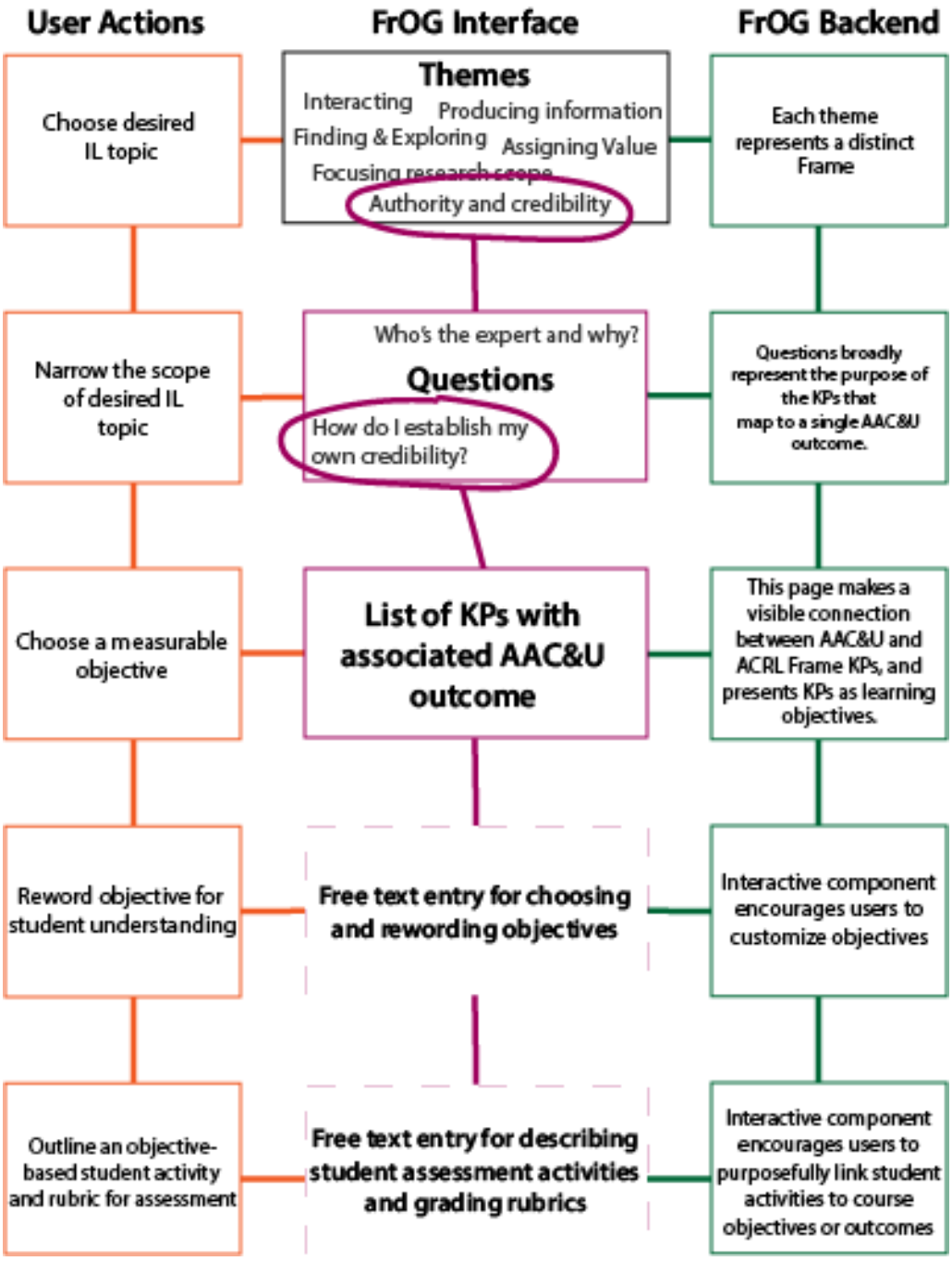

Figure 17.2
A representation of the user's path through the FrOG, set alongside the back-end mapping and a simple representation of the user interface.

Figure 17.3
A snapshot of the FrOG's initial question menu, with themes as main blocks that open to reveal questions that link out to appropriate frames and KPs.

A LibWizard tutorial, using a set of open-ended prompts, leads users through the process of using those suggested model objectives to form or select objectives of their own. The LibWizard tutorial then uses additional open-ended prompts to direct users in the initial development of assessment-worthy activities and reasonable measures of success relative to the achievement of the objectives they've selected or created. When users complete the FrOG, the system e-mails them a document that represents their path through the process and includes their answers to the objective and assignment and assessment creation prompts. The Framework Transit Map is included in full at the beginning of the process to illustrate the bigger picture, and close-up details of the map are included at relevant points along the way as a part of the selection activity so that users have the opportunity to use the map to consider how the Outcomes and KPs are related to each other as a part of shaping their own thinking.

As a more detailed case study, let's walk through the more specific example of a recently developed introductory graduate course at the University of Southern Indiana. The LBST 501 Information Literacy and Research course was designed and taught by USI campus librarians acting as adjunct instructors in the College of Liberal Arts.[14] The librarians

developed the course to meet Quality Matters (QM) course review standards and a set of departmentally prescribed course objectives derived from the AAC&U Information Literacy VALUE Rubric Outcomes.[15] With given course objectives as a point of departure, the librarians began the process of backward course design—from course to unit objectives, then from unit objectives to activities—by dividing the course into five units: an introductory unit and four additional units, each devoted to one of the course objectives (for a brief outline of the course in its current form, see table 17.2). The process was time- and labor-intensive, primarily because the librarians had to work out course objective/outcome alignments for the units and assignments from scratch.

Table 17.2
LBST 501 course outline. AAC&U Outcomes serve as themes for units 2–5.

Unit Number	Unit Theme	KPs Adapted
1	Definitions of information and IL	N/A
2	Critically evaluate information and its sources (Critical)	1.1, 1.2, 2.1, 2.6
3	Determine the extent of information needed (Determine)	4.1, 4.2, 4.3, 6.1, 6.5
4	Access needed information (Access)	3.5, 5.3, 5.5, 6.2, 6.6, 6.7
5	Effectively use info to accomplish specific purpose & Access and use info ethically and legally (Effective, Ethical)	3.1, 3.2, 3.3, 5.1

Building the same course using the FrOG simplifies the design process by letting the tool itself handle the complex outcome-mapping and term-selection work behind the scenes, thus freeing the user to think more deeply about the implications of instructional choices made with the FrOG's guidance. As illustrated in table 17.2, the process begins with a list of simple questions found via the Theme/Frame links on the FrOG front page, organized into broad categories. For any given course, several questions might conceivably fit the scope of intended instructional content. Because LBST 501 is an introductory research course that requires critical source evaluation at the course outcome level, questions like "Who is the authority, and why?" "Does format indicate quality of content?" or "Which sources should I use?" are a natural fit for the work course designers are most likely to have in mind.

Assuming the designers choose to go the "Who is the authority…?" route, the FrOG would lead them through questions specifically encouraging the derivation of local objectives from specifically Authority-related KPs. The starting point in the FrOG for the designers of this particular course is that students whose instructors want them to understand matters of authority appropriately should be asking themselves the following questions: "Who's the expert, and why?" and "Is information format indicative of quality?"[16] Those two questions route the FrOG user to two distinct outcome pages associated

with the Authority and Process frame KPs, mapped to the appropriate AAC&U Outcomes, particularly the Critical Outcome. Figure 17.4 depicts the Authority KPs leading up to mastery of the Critical Outcome; figure 17.5 depicts the Process KPs necessary for Critical mastery. The designer can then adapt KP-modeled language in order to begin generating specific course and assignment objectives that meet instructional needs.

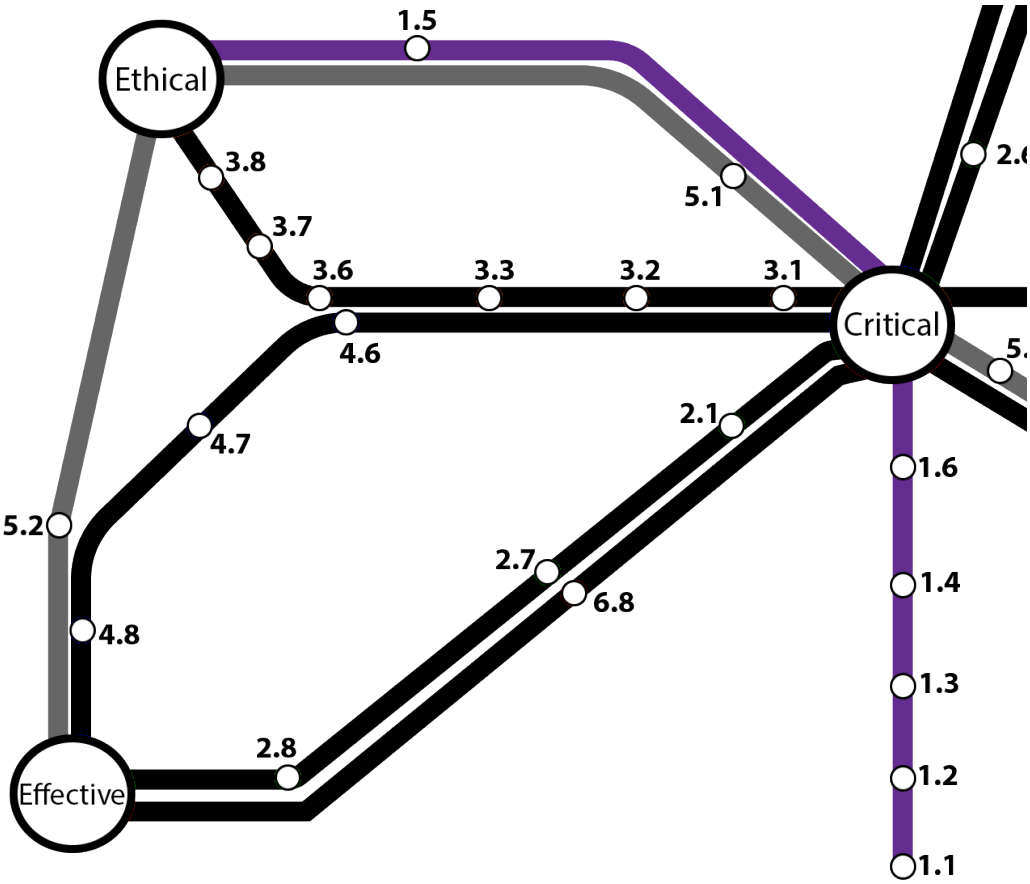

Figure 17.4
Close-up view of the section of the Framework Transit Map detailing the knowledge practices on the Authority line leading to Critical mastery.

On the Framework Transit Map, the choice to consider authority and source credibility suggests initial attention to the Authority line (figure 17.5), which crosses or meets the Critical and Ethical transit points. As it happens, while all frame lines route through Critical, only one other line crosses or meets both Critical and Ethical: Conversation. Credibility judgments are thereby located in the context of the discourse in which they are most meaningful. Comparing the KPs of these two lines to each other reveals a set of clues suggesting ways to use Conversation KPs to develop assignment objectives that might ultimately inform Authority KPs to support Authority-relevant outcomes.

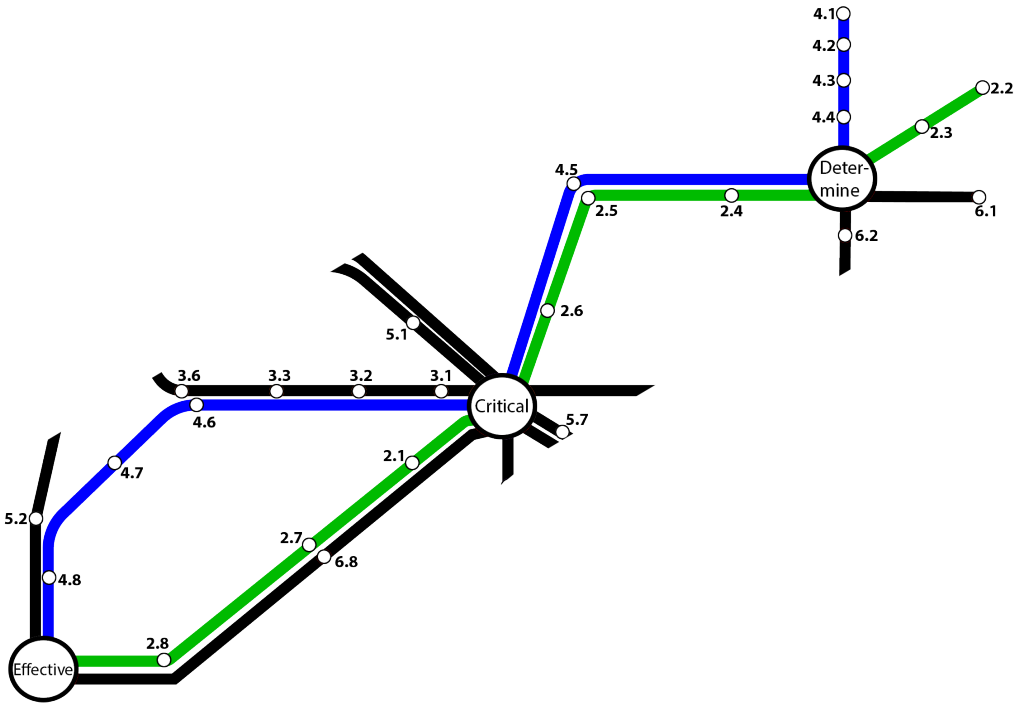

Figure 17.5
Close-up view of the section of the Framework detailing the knowledge practices on the Process line supporting Critical mastery.

Examining the impact of format on credibility turns the user to the Process line (figure 17.5), which passes through the Determine, Critical, and Effective points; interestingly, so does the Inquiry line, which requires evaluating materials for gaps or errors on its approach to Critical, alongside Process KPs addressing the effects of context and format on the perceived quality of information. Perceived errors or shortcomings in information coverage may actually be conditioned on the form or context in which that information is presented (a fairly common difficulty facing interdisciplinary work), which suggests a useful angle of approach to creating assignments that require students to work out how to make good judgments about coverage in a variety of forms and contexts.

CONCLUSION

As our brief look at LBST 501 suggests, while neither the map nor the FrOG requires users to do any particular thing, they do offer the possibility of solutions to the structural and conceptual challenges facing both librarians and non-library faculty with regard to information literacy instruction. The FrOG primarily addresses structural problems by more clearly connecting course and assignment creation to assessment, which has the potential to vastly simplify the work a faculty member has to do. Its non-prescriptive nature—encouraging local users to make local decisions about appropriate objectives and

helping them to find the language to do so—might prove particularly attractive to faculty members who would otherwise object to having their course structures or content decisions dictated by someone else's priorities. The Framework Transit Map, especially when used in conjunction with the FrOG, addresses the conceptual challenges facing librarians seeking buy-in both inside and outside of the library for information literacy instruction by offering a way to envision the Framework that emphasizes processes and connections rather than listed outcomes, thus clarifying the business of applying the Framework for all concerned.

APPENDIX

The frames and their associated knowledge practices, reworded so that each KP contains an actionable verb consistent with Bloom's Taxonomy.

Authority

1.1 Define different types of authority

1.2 Determine credibility of sources based on tools or indicators

1.3 Recognize disciplinary constructs of authority, as well as the possibility of challenging these norms

1.4 Recognize that authoritative content may be packaged formally or informally and may include sources of all media types

1.5 Recognize responsibilities of developing one's own authority, including seeking accuracy and reliability, respecting intellectual property, and participating in communities of practice

1.6 Demonstrate an awareness of the increasingly social nature of the information ecosystem where authorities actively connect with each other and sources develop over time

Information Creation

2.1 Articulate capabilities and constraints of information developed through various processes

2.2 Assess the fit between an information product's creation process and particular information need

2.3 Articulate traditional and emerging processes of information creation and dissemination in a particular discipline

2.4 Recognize that information may be perceived differently based on format

2.5 Recognize implications of information formats that contain static or dynamic information

2.6 Compare the value of information products in varying contexts

2.7 Transfer knowledge of capabilities and constraints to new types of information products

2.8 Develop, during the creation process, an understanding that author choices impact future uses and interpretations of an information product

Information Has Value

3.1 Integrate original ideas of others into one's own work, giving credit through proper attribution and citation

3.2 Demonstrate an understanding that intellectual property is a legal and social construct that varies by culture

3.3 Articulate purpose and distinguishing characteristics of copyright, fair use, OA, and the public domain
3.4 Consider how and why some individuals or groups may be underrepresented or systematically marginalized within systems that produce and disseminate information
3.5 Recognize issues of access or lack of access to information sources
3.6 Decide where and how one's information is published
3.7 Discuss how commodification of personal information and online interactions affects the information one receives, produces, or disseminates online
3.8 Act in full awareness of issues related to privacy and the commodification of personal information in online environments

Research

4.1 Formulate questions for research based on information gaps or reexamination of existing, possibly conflicting information
4.2 Determine appropriate scope of investigation
4.3 Focus scope of investigation by breaking complex research questions into simple ones
4.4 Use various research methods based on need, circumstance, and type of inquiry
4.5 Analyze gathered information and assess for gaps or weaknesses
4.6 Organize information in meaningful ways
4.7 Produce works that synthesize ideas gathered from multiple sources
4.8 Formulate reasonable conclusions based on the analysis and interpretation of information

Scholarship

5.1 Cite the contributing work of others in one's own information production
5.2 Support the scholarly conversation by contributing at the appropriate level
5.3 Identify barriers to entering scholarly conversation via various venues
5.4 Critically evaluate contributions made by others in participatory information environments
5.5 Identify the contribution that particular scholarly works make to disciplinary knowledge
5.6 Summarize the changes in scholarly perspective over time on a particular topic within a specific discipline
5.7 Recognize that a given scholarly work may not represent the only or majority perspective on an issue

Searching

6.1 Determine the initial scope of the task required to meet information needs

6.2 Identify interested parties who might produce information about a topic, then determine how to access that information

6.3 Employ divergent and convergent thinking when searching

6.4 Choose search tools that are appropriate to information needs and search strategies

6.5 Design and refine needs and search strategies as necessary based on search results

6.6 Demonstrate an understanding of how information systems are organized by accessing relevant information

6.7 Use different types of searching language appropriately

6.8 Evaluate searching processes and results effectively

NOTES

1. Ken Garland (London Transit Museum), summing up the gist of a conversation he had with Harry Beck (Roger Last, producer, "The London Underground Map," *Design Classics* 5, video, 25 minutes [London, England: BBC Worldwide, 1987], https://search.alexanderstreet.com/view/work/bibliographic_entity%7Cvideo_work%7C1796780/design-classics-5-london-underground-map).
2. Janin Hadlaw, "The London Underground Map: Imagining Modern Time and Space," *Design Issues* 19, no. 1 (2003): 25–35; Transport for London, "Harry Beck's Tube Map," accessed July 7, 2019, https://www.tfl.gov.uk/corporate/about-tfl/culture-and-heritage/art-and-design/harry-becks-tube-map; Darien Graham-Smith, "The History of the Tube Map," Londonist, May 17, 2016, https://londonist.com/2016/05/the-history-of-the-tube-map.
3. For examples of studies suggesting the unique efficacy of this sort of visual model, see Remo Aslak Burkhard and Michael Meier, "Tube Map Visualization: Evaluation of a Novel Knowledge Visualization Application for the Transfer of Knowledge in Long-Term Projects," *Journal of Universal Computer Science* 11, no. 4, (2005): 473–94; Remo Aslak Burkhard et al., "Knowledge Visualization: A Comparative Study between Project Tube Maps and Gantt Charts," in *Proceedings of I-Know '05* (New York: Springer, 2005), 388–95; Martin Dodge, "Information Maps: Tools for Document Exploration," Working Paper Series, Centre for Advanced Spatial Analysis, University College London, 2005. For an interesting example of a use of this style of representation to map a purely conceptual domain, see David G. Stern, "The University of Iowa Tractatus Map," *Nordic Wittgenstein Review*, December 16, 2016, 203–20.
4. Association of College and Research Libraries, *Framework for Information Literacy for Higher Education* (Chicago: Association of College and Research Libraries, 2016), https://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/infolit/framework1.pdf.
5. Larry Hardesty, "Faculty Culture and Bibliographic Instruction: An Exploratory Analysis," *Library Trends* 44, no. 2 (Fall 1995): 339–67; Evan Farber, "Faculty-Librarian Cooperation: A Personal Retrospective," *Reference Services Review* 27, no. 3 (1999): 229–34; Paul O. Jenkins, *Faculty-Librarian Relationships* (Oxford: Chandos, 2005).
6. Jenkins, *Faculty-Librarian Relationships*; Farber, "Faculty-Librarian Cooperation"; Paul Yakoboski, "Adjunct Faculty: Who They Are and What Is Their Experience?" Trends and Issues, TIAA Institute, November 2018, https://www.tiaainstitute.org/index.php/publication/adjunct-faculty-survey-2018.
7. Jonathan Cope and Jesús E. Sanabria, "Do We Speak the Same Language? A Study of Faculty Perceptions of Information Literacy," *portal: Libraries and the Academy* 14, no. 4 (2014): 475–501, https://doi.org/10.1353/pla.2014.0032; Laura Saunders, "Culture and Collaboration: Fostering Integration of Information Literacy by Speaking the Language of Faculty," in *Imagine, Innovate, Inspire: The Proceedings of the ACRL 2013 Conference*, ed. Dawn M. Mueller (Chicago: Association of College

and Research Libraries, 2013), www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/Saunders_Culture.pdf; William Badke, "Why Information Literacy Is Invisible," *Communications in Information Literacy* 4, no. 2 (2010), https://doi.org/10.15760/comminfolit.2011.4.2.92; Sophie Bury, "Learning from Faculty Voices on Information Literacy: Opportunities and Challenges for Information Literacy Education," *Reference Services Review* 44, no. 3 (2016): 237–52, https://doi.org/10.1108/RSR-11-2015-0047.

8. Christine Bombaro, "The Framework Is Elitist," *Reference Services Review* 44, no. 4 (November 14, 2016): 552–63, https://doi.org/10.1108/RSR-08-2016-0052.
9. Bombaro, "Framework Is Elitist," 555–56.
10. Bombaro, "Framework Is Elitist," 556. Lane Wilkinson made the related point that the Framework is "underdetermined" in his presentation "Reconsidering Threshold Concepts: A Critical Appraisal of the ACRL Framework for Information Literacy" (presentation, Library Orientation Exchange [LOEX], Denver, CO, April 30–May 2, 2015), online video, 56:52, 2016, https://vimeo.com/167354816.
11. Association of American Colleges and Universities, "Information Literacy VALUE Rubric," July 31, 2014, https://www.aacu.org/value/rubrics/information-literacy.
12. Use of Bloom's Taxonomy for applications of this kind is a fairly common strategy for applying the Framework. See, for example, several chapters in Barbara J. D'Angelo et al., eds., *Information Literacy* (Boulder, CO: University Press of Colorado, 2017), https://wac.colostate.edu/books/infolit/collection.pdf.
13. Association of College and Research Libraries, *Framework*.
14. The course was built and taught by Andrea Wright (the assistant director and head of Public Services at the David L. Rice Library, USI) and chapter coauthor Becca Neel (online learning librarian).
15. MarylandOnline, "Specific Review Standards from the QM Higher Education Rubric, Sixth Edition," Quality Matters, 2018, https://www.qualitymatters.org/sites/default/files/PDFs/StandardsfromtheQMHigherEducationRubric.pdf.
16. We make this assumption here because it is in fact what the designers of the course assumed. There is no necessary reason other than such a local choice for this to be the case, and different users are free to start from their own assumptions.

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