About This Document

I have worked to map the standards, performance indicators, and outcomes of the Information Literacy Competency Standards for Higher Education to the Framework for Information Literacy for Higher Education. Obviously, these are very different documents based on different theories and approaches to information literacy. You will find that my notes and suggestions vary greatly in level of detail from standard to standard. In some cases, what was a single performance indicator has greater prominence in the Framework and its outcomes will be linked to multiple frames. In other cases, there are outcomes that cannot be connected on a one-to-one basis to a specific point in the Framework. The Standards’ learning outcomes tend to be very concrete, while the Framework’s knowledge practices are broad, and its dispositions broader still. There simply isn’t the same level of granularity. I’ve tried to address this by providing a short discussion for each standard and performance indicator where I suggest how it is addressed by or fits into the Framework. For individual outcomes, if I feel that there is a connection to the language used in the Framework (usually in the knowledge practices or dispositions, but sometimes in what I call the synopsis or elaboration), I indicate this. For outcomes where I don’t see a direct match, either because of a shift in emphasis or because of level of granularity, I limited my discussion to the performance indicator level.

It is important to remember that the Framework’s knowledge practices and dispositions are meant to be examples, not a comprehensive list, and the creators of the Framework explicitly state they expect librarians and professors to add knowledge practices and dispositions to the frames and create their own learning outcomes. In some cases, I’ve added notes that I think a particular outcome would make a good additional knowledge practice.

The authors of the Framework did not number either the frames themselves or the knowledge practices and dispositions. While I understand and appreciate that they organized the document in this way to keep it from appearing that they were establishing any sort of ranking, it does make it very hard to refer to information within the document. So, in my version of the Framework below, I’ve added some headings and numbering for reference. I’m calling the short description of each frame, which appears in bold type and is usually just one or two sentences long, the synopsis. I’m calling the longer paragraph that follows the synopsis the elaboration. I’ve numbered the sentences within each, so that I may refer to particular points. I’ve also numbered the lists of knowledge practices and dispositions rather than using bullet points.

Here is a key to the links I use in the Standards:
S1 (S for synopsis, 1 indicates first sentence)
E2 (E for elaboration, 2 indicates second sentence)
K3 (K for knowledge practice, 3 indicates third one in a list)
D4 (D for disposition, 4 indicates fourth one in a list)

I’ve used blue font throughout to keep my comments and additions separate from the original documents.

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Standard One

The information literate student determines the nature and extent of the information needed.
The content of this standard has been distributed to many frames in the Framework. Research as Inquiry and Searching as Strategic Exploration appear frequently below, but there are also links to Information Creation as a Process and Scholarship as Conversation.

Performance Indicators:
1. The information literate student defines and articulates the need for information.
   This particular indicator maps to two different frames. Research as Inquiry, because it focuses on the process of developing and working through the research process as a whole, and Searching as Strategic Exploration, as it addresses finding information as part of that process.

   Outcomes Include:
   a. Confers with instructors and participates in class discussions, peer workgroups, and electronic discussions to identify a research topic, or other information need. I would link this outcome to Research as Inquiry, though the frame’s knowledge outcomes and dispositions are much broader (K1, K2, D1, and D3).
   b. Develops a thesis statement and formulates questions based on the information need. The elaboration of Searching as Strategic Exploration begins with very similar language (E1) and the first knowledge practice (K1) is a close match to this outcome. Also related are two Research as Inquiry knowledge practices (K2 and K3).
   c. Explores general information sources to increase familiarity with the topic. This is too specific for the Framework, but could be easily included under either Research as Inquiry (K2) or Searching as Strategic Exploration (K1 or K4).
   d. Defines or modifies the information need to achieve a manageable focus. See all three knowledge practices in outcome b above, plus Research as Inquiry D1.
   e. Identifies key concepts and terms that describe the information need. Closest knowledge practice is Searching as Strategic Exploration K7.
   f. Recognizes that existing information can be combined with original thought, experimentation, and/or analysis to produce new information. Could be mapped broadly to either Research as Inquiry, if the emphasis is on the continuous and iterative nature of research (see the synopsis, S1), or Scholarship as Conversation, if the emphasis is on scholarly research (especially its synopsis, S1).

2. The information literate student identifies a variety of types and formats of potential sources for information.
   As a whole, the concept of “types and formats” falls under Information Creation as a Process; however, there aren’t many close matches in language because the frame is trying to move from looking just at format to the processes that lead to particular formats.

   Outcomes Include:
   a. Knows how information is formally and informally produced, organized, and disseminated. Although the language is very different, I would map this to K1 in Information Creation as a Process. Another link would be to Information Has Value, because it addresses information as a commodity (including publishing practices) and access issues (S1, E1, and K5).
   b. Recognizes that knowledge can be organized into disciplines that influence the way information is accessed. K3, which is the only mention of disciplines in Information Creation as a Process.

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3. The information literate student considers the costs and benefits of acquiring the needed information.
   I’d probably place the indicator as a whole under Information has Value, because it deals with the commodification of information. However, the actual outcomes fit more into Searching as Strategic Exploration and Scholarship as Conversation (to the extent that they fit anywhere).

**Outcomes Include:**

- **a.** Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound)
  There is no explicit equivalent in the Framework, but it fits generally under Searching as Strategic Exploration.

- **b.** Considers the feasibility of acquiring a new language or skill (e.g., foreign or discipline-based) in order to gather needed information and to understand its context
  There really is nothing like this in the Framework. If I had to map it to a specific frame, I would probably place it under Scholarship as Conversation, because it addresses knowledge needed for a specific discipline.

- **c.** Defines a realistic overall plan and timeline to acquire the needed information
  Searching as Strategic Exploration **K1** is the closest, though it addresses “scope” rather than the more concrete “plan and timeline” used here.

4. The information literate student reevaluates the nature and extent of the information need.
   Both outcomes relate to a number of knowledge practices under Research as Inquiry (**K1, K2, K3, and K5**).

**Outcomes Include:**

- **a.** Reviews the initial information need to clarify, revise, or refine the question
- **b.** Describes criteria used to make information decisions and choices

**Standard Two**

The information literate student accesses needed information effectively and efficiently.
This is one of two standards that still exists in a discrete (though reconceptualized) unit in the Framework.
Searching as a Strategic Experience is very pared down compared to the Standard Two. I think this is an improvement as the Standard is a bit heavy on the indicators/outcomes (5 indicators with 22 outcomes!)
and they tend to overlap and be very specific. The knowledge practices and dispositions of the Frame are painted with much broader strokes, but are still concrete enough to provide a good starting point for creating learning outcomes. All links below are to Searching as Strategic Exploration, unless otherwise specified.

**Performance Indicators:**

1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

   Outcomes c and d on “retrieval systems” map to Searching as Strategic Exploration, but the Framework isn’t very explicit in talking about “investigation methods” as is meant here (hands-on research in lab or field). Research as Inquiry does talk about using “more advanced research methods” (E5) and provides a knowledge practices that use similar terminology that seems to provide the best match.

   **Outcomes Include:**
   - a. Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork) 
     Research as Inquiry K4.
   - b. Investigates benefits and applicability of various investigative methods 
     Also Research as Inquiry K4.
   - c. Investigates the scope, content, and organization of information retrieval systems 
     Searching as Strategic Exploration K6.
   - d. Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system 
     Searching as Strategic Exploration K5 and K8.

2. The information literate student constructs and implements effectively-designed search strategies. All the outcomes under this indicator map well to Searching as Strategic Exploration, with the exception of outcome f.

   **Outcomes Include:**
   - a. Develops a research plan appropriate to the investigative method
     I’m a bit thrown off here by the use of the phrase “investigation method”, which was used above in 1.a and 1.b to refer to disciplinary-specific research methods like lab- and fieldwork. I would still map it to Searching as Strategic Exploration (K1 and K2). K2 is a very rare example of a knowledge practice that is actually more specific than the performance indicators in the Standards.
   - b. Identifies keywords, synonyms and related terms for the information needed 
     K7.
   - c. Selects controlled vocabulary specific to the discipline or information retrieval source 
     Also K7. Outcomes b and c were more or less collapsed into a single knowledge practice.
   - d. Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books) 
     K4 and K6.
   - e. Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters 
     Also K4 and K6.
   - f. Implements the search using investigative protocols appropriate to the discipline
     There is no direct match for this. The Framework talks very little about disciplines in either Searching as Strategic Exploration and only briefly in Research as Inquiry. Searching as Strategic Exploration’s third disposition (realize that information sources vary greatly in content and format and have varying relevance and value, depending on the need and nature of the search) touches on this a bit, but I think a more specific knowledge practice would be appropriate. After all, this is a Framework for higher education and learning about...
information literacy in your particular discipline is important for college students. My suggestion is something along the lines of “use disciplinary knowledge to critically select retrieval systems and information sources to best serve specific research needs.”

3. The information literate student retrieves information online or in person using a variety of methods. This is another case where some of the outcomes are very specific, to the point of listing detailed examples, while Searching as Strategic Exploration focuses more on the broad conceptual issues.

**Outcomes Include:**

a. Uses various search systems to retrieve information in a variety of formats
   A very broad outcome that I would map to K4.

b. Uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration
   No equivalent.

c. Uses specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)
   See D4 for help from experts.

d. Uses surveys, letters, interviews, and other forms of inquiry to retrieve primary information
   See my note above on indicator 2, outcome f, where I suggest an additional knowledge practice that would cover what I see as a gap.

4. The information literate student refines the search strategy if necessary.
   This indicator’s outcomes have been condensed in the Framework to K5, along with several dispositions (D1, D2, D4, and D6), which all focus on the need to be flexible, creative, and persistent in searching.

**Outcomes Include:**

a. Assesses the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized

b. Identifies gaps in the information retrieved and determines if the search strategy should be revised

c. Repeats the search using the revised strategy as necessary

5. The information literate student extracts, records, and manages the information and its sources. As with indicator 4, this has been greatly condensed. The entire indicator and its outcomes is summarized very briefly in K8 “manage searching processes and results effectively.”

**Outcomes Include:**

a. Selects among various technologies the most appropriate one for the task of extracting the needed information (e.g., copy/paste software functions, photocopier, scanner, audio/visual equipment, or exploratory instruments)

b. Creates a system for organizing the information

c. Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources

d. Records all pertinent citation information for future reference

e. Uses various technologies to manage the information selected and organized

**Standard Three**

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
This standard has been completely reimagined in the new Framework. Some outcomes have risen to play a very prominent role, while others have practically disappeared. Outcomes that belonged to this one standard are now distributed among all six frames of the Framework.

**Performance Indicators:**

1. The information literate student summarizes the main ideas to be extracted from the information gathered.
   
   A case where the Standards’ focus on using information is greatly downplayed in the Framework. Certainly this indicator and its outcomes would fall under Research as Inquiry, because of its focus on research as an iterative process that builds on what has been done before. But there is no language that reflects the outcomes. The closest knowledge practices are on organizing and synthesizing information (K6 and K7).

   **Outcomes Include:**
   - Reads the text and selects main ideas
   - Restates textual concepts in his/her own words and selects data accurately
   - Identifies verbatim material that can be then appropriately quoted

2. The information literate student articulates and applies initial criteria for evaluating both the information and its sources.
   
   Evaluating sources has gone from a single performance indicator to playing a key role in two separate frames: Authority is Constructed and Contextual and Information Creation as a Process. Scholarship as a Conversation also has knowledge practices and dispositions that relate.

   **Outcomes Include:**
   - Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias
   - Analyzes the structure and logic of supporting arguments or methods
   - Recognizes prejudice, deception, or manipulation
   - Recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information

   This outcome is all over the Framework. Authority is Constructed and Contextual K1, K2, K3, K4, D2, and D3. Information Creation as Process K1, K2, K4, K5, K7, D1, D4, and D5. Scholarship as Conversation K4, K5, K7, and D5.

   - This could be either Research as Inquiry, as it ties to using sources, or Scholarship as a Conversation, but neither has an explicit knowledge practices about evaluating sources based on arguments/theories/methods. Scholarship as a Conversation has a couple that are close. K5 is on identifying the contribution that scholarly pieces make, but it isn’t about critically analyzing them as sources. K4 begins with “critically evaluation contributions”, but it is focused on “participatory information environments.” I think there is a gap that could be filled by an additional knowledge practice along the lines of “use discipline-specific knowledge about methods, theories, and standard practices to critically evaluate scholarly works.”
   - This fits broadly under Information Creation as a Process S1: “Information in any format is produced to convey a message,” but there aren’t any knowledge practices or dispositions on the concept. I think one could definitely be added. This outcome could also possibly be tied to social justice issues in Information Has Value (E4 and 5, and K4).
   - This is found throughout Information Creation as Process (entirety of the Synopsis and Elaboration, as well as K1, K4, and K6). But I also see it in Authority is Constructed and Contextual (entirety of the Synopsis, E1, and K1).

3. The information literate student synthesizes main ideas to construct new concepts.
   
   Research as Inquiry has several knowledge practices that fall along the same lines, though their wording is very different from the outcomes below (K6, K7, and K8).
Outcomes Include:

a. Recognizes interrelationships among concepts and combines them into potentially useful primary statements with supporting evidence
b. Extends initial synthesis, when possible, at a higher level of abstraction to construct new hypotheses that may require additional information
c. Utilizes computer and other technologies (e.g. spreadsheets, databases, multimedia, and audio or visual equipment) for studying the interaction of ideas and other phenomena

4. The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information. Most of the outcomes here map to Research as Inquiry, which has most of the knowledge practices dealing with using information for a purpose/product.

Outcomes Include:

a. Determines whether information satisfies the research or other information need Research as Inquiry K5.
b. Uses consciously selected criteria to determine whether the information contradicts or verifies information used from other sources Research as Inquiry K7.
c. Draws conclusions based upon information gathered Research as Inquiry K8.
d. Tests theories with discipline-appropriate techniques (e.g., simulators, experiments) See my notes, and a suggested additional knowledge practice for Scholarship as Conversation, above at Standard Three, Indicator 2, Outcome b.
e. Determines probable accuracy by questioning the source of the data, the limitations of the information gathering tools or strategies, and the reasonableness of the conclusions See my notes, and a suggested additional knowledge practice for Scholarship as Conversation, above at Standard Three, Indicator 2, Outcome b.
f. Integrates new information with previous information or knowledge Research as Inquiry K7.
g. Selects information that provides evidence for the topic This outcome is so general and basic that there is no clear match in the Framework, but it could go under either Research as Inquiry or Searching as Strategic Exploration.

5. The information literate student determines whether the new knowledge has an impact on the individual’s value system and takes steps to reconcile differences. Several frames address either seeking out or incorporating multiple perspectives.

Outcomes Include:

a. Investigates differing viewpoints encountered in the literature Research as Inquiry D6.
Scholarship as Conversation E2 and 4, plus K7.
b. Determines whether to incorporate or reject viewpoints encountered Authority is Constructed and Contextual D1, D3, D4, and D5.

6. The information literate student validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners. This performance indicator has been completely reimagined in the Framework. While the indicator focuses on the student as consumers of information who participate in class and learn for experts, the Framework encourages students to take a role as information creators, even at the scholarly level. Authority is Constructed and Contextual K5 and K6.
Information has Value D3.
Outcomes Include:
   a. Participates in classroom and other discussions
   b. Participates in class-sponsored electronic communication forums designed to encourage discourse on the topic (e.g., email, bulletin boards, chat rooms)
   c. Seeks expert opinion through a variety of mechanisms (e.g., interviews, email, listservs)

7. The information literate student determines whether the initial query should be revised.
   Both Research as Inquiry and Searching as Strategic Exploration emphasize the iterative nature of research. In addition to the knowledge practices and disposition I’ve assigned below, there are a number of dispositions on the mindset needed for research that apply.
   Research as Inquiry D1, D4, D5, and D7.
   Searching as Strategic Exploration D1, D2, and D4.

Outcomes Include:
   a. Determines if original information need has been satisfied or if additional information is needed
      Research as Inquiry K5.
      Searching as Strategic Exploration D6.
   b. Reviews search strategy and incorporates additional concepts as necessary
      Searching as Strategic Exploration K5.
   c. Reviews information retrieval sources used and expands to include others as needed
      Searching as Strategic Exploration K4.

Standard Four

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

To an extent this standard doesn’t exist in the Framework. That is partially due to a shift in theory. The standards (and this standard in particular) looked at info as a commodity or tool to be used, an idea that is deemphasized in the Framework, which is much more focused on understanding the social context in which information is created. Many of the individual outcomes can still be transferred, but they are distributed in many different frames. I actually like this change a lot, because I always felt the least connection to Standard Four. The indicators and outcomes always seemed either too specific to the writing/creating process (outlines, drafts, quotations, manipulating images) or too general (incorporates principles of design and communication), leaving me with the feeling that this standard “belonged” to the composition faculty that I worked with rather than to me as a librarian. They way they are now conceptualized in the Framework helps me make more of a connection to them as part of information literacy.

Performance Indicators:

1. The information literate student applies new and prior information to the planning and creation of a particular product or performance.
   The outcomes of this indicator are all much more granular than what is included in the Framework’s knowledge practices and dispositions. The closest matches are under Research as Inquiry K6 (Organizes information in a meaningful way) and K7 (synthesize ideas gathered from multiple sources). Looking at the wording of the indicator itself, planning a project also is a part of the same frame’s first 3 knowledge practices on formulating questions, determining scope, and breaking down complex questions (K1, K2, and K3).

   Alternately, this indicator could be related to Information Creation as a Process, with its emphasis on how the creation process leads to a specific type of product. See, for instance, K8 (develop, in their
own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys) and perhaps K7.

Outcomes Include:

a. Organizes the content in a manner that supports the purposes and format of the product or performance (e.g. outlines, drafts, storyboards)
b. Articulates knowledge and skills transferred from prior experiences to planning and creating the product or performance
c. Integrates the new and prior information, including quotations and paraphrasings, in a manner that supports the purposes of the product or performance
d. Manipulates digital text, images, and data, as needed, transferring them from their original locations and formats to a new context

2. The information literate student revises the development process for the product or performance. I’ve always found the phrase “development process,” and thus this indicator as a whole, to be very vague. I would go back to Research as Inquiry for this one, particular several of its dispositions (D1, D4, and D5) which emphasize research as an “open-ended exploration” that requires “an open mind and critical stance” as well as “persistence, adaptability, and flexibility.” Searching as Strategic Experience also emphasizes the need to reevaluate and adjust, but it is more narrowly focus (see my comments above on Standard Two, Indicator 4).

Outcomes Include:

a. Maintains a journal or log of activities related to the information seeking, evaluating, and communicating process
b. Reflects on past successes, failures, and alternative strategies

3. The information literate student communicates the product or performance effectively to others. This indicator can be matched to Information Creation as a Process, based on the wording of the synopsis (S1). Outcomes c and d are very general and aren’t really included in the frame, but outcomes a and b are expanded on in a range of the knowledge practices and dispositions (K1, K4, K6, D3, and D6).

Outcomes Include:

a. Chooses a communication medium and format that best supports the purposes of the product or performance and the intended audience
b. Uses a range of information technology applications in creating the product or performance
c. Incorporates principles of design and communication
d. Communicates clearly and with a style that supports the purposes of the intended audience

Standard Five

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. As with Standard Two, a single frame (Information Has Value) that has a lot in common with the previous standard exists. The vast majority of the indicators/outcomes from this standard can be mapped to that frame, though a number of outcomes are not explicitly expressed, which is mostly because emphasis has shifted from following laws, regulation, and policies in the Standards to focusing on to larger socio-economic issues in the Framework. All links below are to Information Has Value, unless otherwise specified.

Performance Indicators:

1. The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology.
   See notes on the individual outcomes for this indicator. Some are prominent in the frame, while others have been marginalized.
Outcomes Include:

a. Identifies and discusses issues related to privacy and security in both the print and electronic environments
   The security/privacy focus of the frame is the commodification of personal information, which is reflected in two Knowledge Practices (K6, K7 and K8). Security is not explicitly mentioned in the frame.

b. Identifies and discusses issues related to free vs. fee-based access to information
   Given the references to the monetary value of money both the synopsis (S1) and the elaboration (E1 and E2), it is surprising that the monetary cost/value of information does not appear in any of the Knowledge Practices. It would certainly fit under K5 “recognize issues of access or lack of access to information sources”, but I’m tempted to either edit K5 to add something more specific about monetary issues or write and additional Knowledge Practice.

c. Identifies and discusses issues related to censorship and freedom of speech
   Neither censorship nor freedom of speech is directly mentioned in the Framework. It is possible to read censorship into part of the elaboration (E4 and E5), which discuss how individuals or organizations can leverage information, but again, I think it would make a good additional Knowledge Practice, since it doesn’t quite fit under the existing ones.

d. Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material
   There are multiple references in both the frame elaboration (E1, E2, and E3), plus three knowledge practices (K1, K2, and K3) and the first disposition (D1).

2. The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources.
   The final sentence of the elaboration discusses complying (or not) with “current legal and socioeconomic practices” (E6), but this is not elaborated much in the Knowledge Practices or Dispositions beyond citing sources. Outcomes a, b, c, d, and g are all very specific (and outdated in some cases), and there is no equivalent language in the frame.

Outcomes Include:

a. Participates in electronic discussions following accepted practices (e.g. "Netiquette")

b. Uses approved passwords and other forms of ID for access to information resources

c. Complies with institutional policies on access to information resources

d. Preserves the integrity of information resources, equipment, systems and facilities
   K1 as proper attribution relates to the dissemination of information.

e. Legally obtains, stores, and disseminates text, data, images, or sounds

f. Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own
   K1, K2, and D1, though the word plagiarism is never used.

g. Demonstrates an understanding of institutional policies related to human subjects research

3. The information literate student acknowledges the use of information sources in communicating the product or performance.
   Citing sources appears not only in Information has Value, but also Scholarship as Conversation.

Outcomes Include:

a. Selects an appropriate documentation style and uses it consistently to cite sources
   Information Has Value: K1, K2, and D1 (the same as for outcome 2.f on plagiarism).
   Scholarship as Conversation: K1, and it also included in the frame elaboration (E9 and E10).

b. Posts permission granted notices, as needed, for copyrighted material
   Same as outcome a (too granular for it’s own Knowledge Practice).
Authority Is Constructed and Contextual

Synopsis
[1] Information resources reflect their creators’ expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. [2] Authority is constructed in that various communities may recognize different types of authority. [3] It is contextual in that the information need may help to determine the level of authority required.

Elaboration
[1] Experts understand that authority is a type of influence recognized or exerted within a community. [2] Experts view authority with an attitude of informed skepticism and an openness to new perspectives, additional voices, and changes in schools of thought. [3] Experts understand the need to determine the validity of the information created by different authorities and to acknowledge biases that privilege some sources of authority over others, especially in terms of others’ worldviews, gender, sexual orientation, and cultural orientations. [4] An understanding of this concept enables novice learners to critically examine all evidence—be it a short blog post or a peer-reviewed conference proceeding—and to ask relevant questions about origins, context, and suitability for the current information need. [5] Thus, novice learners come to respect the expertise that authority represents while remaining skeptical of the systems that have elevated that authority and the information created by it. [6] Experts know how to seek authoritative voices but also recognize that unlikely voices can be authoritative, depending on need. [7] Novice learners may need to rely on basic indicators of authority, such as type of publication or author credentials, where experts recognize schools of thought or discipline-specific paradigms.

Knowledge Practices
Learners who are developing their information literate abilities

1. define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event);
2. use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility;
3. understand that many disciplines have acknowledged authorities in the sense of well-known scholars and publications that are widely considered “standard,” and yet, even in those situations, some scholars would challenge the authority of those sources;
4. recognize that authoritative content may be packaged formally or informally and may include sources of all media types;
5. acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, respecting intellectual property, and participating in communities of practice;
6. understand the increasingly social nature of the information ecosystem where authorities actively connect with one another and sources develop over time.

Dispositions
Learners who are developing their information literate abilities
1. develop and maintain an open mind when encountering varied and sometimes conflicting perspectives;
2. motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways;
3. develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview;
4. question traditional notions of granting authority and recognize the value of diverse ideas and worldviews;
5. are conscious that maintaining these attitudes and actions requires frequent self-evaluation.

Information Creation as a Process

Synopsis

[1] Information in any format is produced to convey a message and is shared via a selected delivery method. [2] The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences.

Elaboration

[1] The information creation process could result in a range of information formats and modes of delivery, so experts look beyond format when selecting resources to use. [2] The unique capabilities and constraints of each creation process as well as the specific information need determine how the product is used. [3] Experts recognize that information creations are valued differently in different contexts, such as academia or the workplace. [4] Elements that affect or reflect on the creation, such as a pre- or post-publication editing or reviewing process, may be indicators of quality. [5] The dynamic nature of information creation and dissemination requires ongoing attention to understand evolving creation processes. [6] Recognizing the nature of information creation, experts look to the underlying processes of creation as well as the final product to critically evaluate the usefulness of the information. [7] Novice learners begin to recognize the significance of the creation process, leading them to increasingly sophisticated choices when matching information products with their information needs.

Knowledge Practices

Learners who are developing their information literate abilities

1. articulate the capabilities and constraints of information developed through various creation processes;
2. assess the fit between an information product’s creation process and a particular information need;
3. articulate the traditional and emerging processes of information creation and dissemination in a particular discipline;
4. recognize that information may be perceived differently based on the format in which it is packaged;
5. recognize the implications of information formats that contain static or dynamic information;
6. monitor the value that is placed upon different types of information products in varying contexts;
7. transfer knowledge of capabilities and constraints to new types of information products;
8. develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys.

Dispositions

Learners who are developing their information literate abilities
1. are inclined to seek out characteristics of information products that indicate the underlying creation process;
2. value the process of matching an information need with an appropriate product;
3. accept that the creation of information may begin initially through communicating in a range of formats or modes;
4. accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes;
5. resist the tendency to equate format with the underlying creation process;
6. understand that different methods of information dissemination with different purposes are available for their use.

Information Has Value

Synopsis

[1] Information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world. [2] Legal and socioeconomic interests influence information production and dissemination.

Elaboration

[1] The value of information is manifested in various contexts, including publishing practices, access to information, the commodification of personal information, and intellectual property laws. [2] The novice learner may struggle to understand the diverse values of information in an environment where “free” information and related services are plentiful and the concept of intellectual property is first encountered through rules of citation or warnings about plagiarism and copyright law. [3] As creators and users of information, experts understand their rights and responsibilities when participating in a community of scholarship. [4] Experts understand that value may be wielded by powerful interests in ways that marginalize certain voices. [5] However, value may also be leveraged by individuals and organizations to effect change and for civic, economic, social, or personal gains. [6] Experts also understand that the individual is responsible for making deliberate and informed choices about when to comply with and when to contest current legal and socioeconomic practices concerning the value of information.

Knowledge Practices

Learners who are developing their information literate abilities

1. give credit to the original ideas of others through proper attribution and citation;
2. understand that intellectual property is a legal and social construct that varies by culture;
3. articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain;
4. understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information;
5. recognize issues of access or lack of access to information sources;
6. decide where and how their information is published;
7. understand how the commodification of their personal information and online interactions affects the information they receive and the information they produce or disseminate online;
8. make informed choices regarding their online actions in full awareness of issues related to privacy and the commodification of personal information.

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Dispositions
Learners who are developing their information literate abilities

1. respect the original ideas of others;
2. value the skills, time, and effort needed to produce knowledge;
3. see themselves as contributors to the information marketplace rather than only consumers of it;
4. are inclined to examine their own information privilege.

Research as Inquiry

Synopsis
[1] Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.

Elaboration
[1] Experts see inquiry as a process that focuses on problems or questions in a discipline or between disciplines that are open or unresolved. [2] Experts recognize the collaborative effort within a discipline to extend the knowledge in that field. [3] Many times, this process includes points of disagreement where debate and dialogue work to deepen the conversations around knowledge. [4] This process of inquiry extends beyond the academic world to the community at large, and the process of inquiry may focus upon personal, professional, or societal needs. [5] The spectrum of inquiry ranges from asking simple questions that depend upon basic recapitulation of knowledge to increasingly sophisticated abilities to refine research questions, use more advanced research methods, and explore more diverse disciplinary perspectives. [6] Novice learners acquire strategic perspectives on inquiry and a greater repertoire of investigative methods.

Knowledge Practices
Learners who are developing their information literate abilities

1. formulate questions for research based on information gaps or on reexamination of existing, possibly conflicting, information;
2. determine an appropriate scope of investigation;
3. deal with complex research by breaking complex questions into simple ones, limiting the scope of investigations;
4. use various research methods, based on need, circumstance, and type of inquiry;
5. monitor gathered information and assess for gaps or weaknesses;
6. organize information in meaningful ways;
7. synthesize ideas gathered from multiple sources;
8. draw reasonable conclusions based on the analysis and interpretation of information.

Dispositions
Learners who are developing their information literate abilities

1. consider research as open-ended exploration and engagement with information;
2. appreciate that a question may appear to be simple but still disruptive and important to research;
3. value intellectual curiosity in developing questions and learning new investigative methods;
4. maintain an open mind and a critical stance;
5. value persistence, adaptability, and flexibility and recognize that ambiguity can benefit the research process;
6. seek multiple perspectives during information gathering and assessment;
7. seek appropriate help when needed;
8. follow ethical and legal guidelines in gathering and using information;
9. demonstrate intellectual humility (i.e., recognize their own intellectual or experiential limitations).

Scholarship as Conversation

Synopsis
[1]Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations.

Elaboration
[1]Research in scholarly and professional fields is a discursive practice in which ideas are formulated, debated, and weighed against one another over extended periods of time. [2] Instead of seeking discrete answers to complex problems, experts understand that a given issue may be characterized by several competing perspectives as part of an ongoing conversation in which information users and creators come together and negotiate meaning. [3] Experts understand that, while some topics have established answers through this process, a query may not have a single uncontested answer. [4] Experts are therefore inclined to seek out many perspectives, not merely the ones with which they are familiar. [5] These perspectives might be in their own discipline or profession or may be in other fields. [6] While novice learners and experts at all levels can take part in the conversation, established power and authority structures may influence their ability to participate and can privilege certain voices and information. [7] Developing familiarity with the sources of evidence, methods, and modes of discourse in the field assists novice learners to enter the conversation. [8] New forms of scholarly and research conversations provide more avenues in which a wide variety of individuals may have a voice in the conversation. [9] Providing attribution to relevant previous research is also an obligation of participation in the conversation. [10] It enables the conversation to move forward and strengthens one’s voice in the conversation.

Knowledge Practices
Learners who are developing their information literate abilities

1. cite the contributing work of others in their own information production;
2. contribute to scholarly conversation at an appropriate level, such as local online community, guided discussion, undergraduate research journal, conference presentation/poster session;
3. identify barriers to entering scholarly conversation via various venues;
4. critically evaluate contributions made by others in participatory information environments;
5. identify the contribution that particular articles, books, and other scholarly pieces make to disciplinary knowledge;
6. summarize the changes in scholarly perspective over time on a particular topic within a specific discipline;
7. recognize that a given scholarly work may not represent the only - or even the majority - perspective on the issue.
Dispositions
Learners who are developing their information literate abilities

1. recognize they are often entering into an ongoing scholarly conversation and not a finished conversation;
2. seek out conversations taking place in their research area;
3. see themselves as contributors to scholarship rather than only consumers of it;
4. recognize that scholarly conversations take place in various venues;
5. suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood;
6. understand the responsibility that comes with entering the conversation through participatory channels;
7. value user-generated content and evaluate contributions made by others;
8. recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage.

Searching as Strategic Exploration

Synopsis
[1] 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.

Elaboration
[1] The act of searching often begins with a question that directs the act of finding needed information. [2] Encompassing inquiry, discovery, and serendipity, searching identifies both possible relevant sources as well as the means to access those sources. [3] Experts realize that information searching is a contextualized, complex experience that affects, and is affected by, the cognitive, affective, and social dimensions of the searcher. [4] Novice learners may search a limited set of resources, while experts may search more broadly and deeply to determine the most appropriate information within the project scope. [5] Likewise, novice learners tend to use few search strategies, while experts select from various search strategies, depending on the sources, scope, and context of the information need.

Knowledge Practices
Learners who are developing their information literate abilities

1. determine the initial scope of the task required to meet their information needs;
2. identify interested parties, such as scholars, organizations, governments, and industries, who might produce information about a topic and then determine how to access that information;
3. utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best source) thinking when searching;
4. match information needs and search strategies to appropriate search tools;
5. design and refine needs and search strategies as necessary, based on search results;
6. understand how information systems (i.e., collections of recorded information) are organized in order to access relevant information;
7. use different types of searching language (e.g., controlled vocabulary, keywords, natural language) appropriately;
8. manage searching processes and results effectively.

Dispositions
Learners who are developing their information literate abilities

1. exhibit mental flexibility and creativity;
2. understand that first attempts at searching do not always produce adequate results;
3. realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search;
4. seek guidance from experts, such as librarians, researchers, and professionals;
5. recognize the value of browsing and other serendipitous methods of information gathering;
6. persist in the face of search challenges, and know when they have enough information to complete the information task