Using Wikipedia to Teach the Association of College and Research Libraries Framework for Information Literacy in Higher Education in a Graduate Seminar: Experimental, Model-Centered Interventions

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Association of College and Research Libraries Framework for Information Literacy

Authority

Information Search Process Model

Instructional Strategies

Model of Interaction

Scholarly Communication

Wikipedia

This case study outlines two instructional strategies deployed in a graduate level school librarian course designed to use Wikipedia as an instructional tool to teach two of the concepts from the Association of College and Research

Libraries Framework for Information Literacy in Higher Education (2015): Authority is Constructed and Contextual and Scholarship as Conversation. The strategies are designed within the conceptual framework of Kuhlthau's Information Search Process Model (1991) and Moore's Model of Interaction (1989). Both of the strategies are designed to use a familiar tool, Wikipedia, to teach the more esoteric concepts of the ACRL Framework. Instructional strategies as well as student learning assessments are provided and discussed.

Introduction

This design case describes two instructional interventions deployed in a graduate school library media specialist course. Wikipedia was used to teach the two concepts of Authority Constructed and Contextual and Scholarship as Conversation. No other platform exists that can serve as the representative foundation for global knowledge - the world's second brain - better than Wikipedia, the online, crowd-sourced encyclopedia (Mesgari et al., 2015). The crowd-sourced, fluid nature of Wikipedia presents multiple opportunities to use it as a resource to teach dispositions associated with information literacy skills acquisition, particularly the ideas of scholarly contribution and authority.

The instructional strategies were designed using the Association of College and Research Libraries Framework for Information Literacy in Higher Education (2015). This framework was developed to illustrate the skills and behaviors that information literate individuals possess and is organized into a taxonomy divided into six frames with corresponding student dispositions. As Jefferson (2017) noted, the Framework was designed to be less focused on discrete skill acquisition and more aligned with teaching threshold concepts that allow students to become empowered decision-makers, consumers of, and contributors to the information landscape. Gibson and Jacobson (2014), the co-chairs of the ACRL Information Literacy Competency Standards for Higher Education Task Force, suggest that the Framework requires librarians to introduce concepts in a way that alters student understanding and encourages "Authority is Constructed and Contextual and Scholarship is Conversationevelatory 'aha' moments" (pg. 250). These conceptual frames include Authority is Constructed and Contextual, Information Creation as a Process, Information has Value, Research as Inquiry, Scholarship as Conversation, and Searching as Strategic Exploration (ACRL, 2015).

These interventions were designed to focus on two of the frames: Authority is Constructed and Contextual and Scholarship as Conversation. The Framework articulates that the Authority is Constructed, and the Contextual frame is designed to teach students that there are kinds of situational authority and that they should critically examine information for context, bias, and relevance to their current information needs (ACRL, 2015). Notably, the Framework directly addresses that instruction should be designed in alignment with this frame in an effort to move students from a novice understanding of authority where authority is often determined by type of publication or author credentials to a more expert understanding where in certain contexts less traditional sources can be authoritative (ACRL, 2015). The second frame, Scholarship as Conversation, notes that scholarship is a sustained discourse within communities of practice. Students who understand the connected nature of scholarship are able to develop a familiarity with the discourse of their chosen discipline and, with this familiarity, enter into the scholastic conversation (ACRL, 2015). While we are by no means suggesting that the ACRL Framework is the only way to think about how Wikipedia demonstrates the new nature of knowledge creation, it does provide a useful taxonomy for designing information literacy instruction.

In consultation with the instructor of record for a graduate-level school media library course, two academic librarians designed and facilitated the two instructional strategies. The team of librarians and the subject matter faculty expert worked collaboratively as a team to provide an exploratory, model centered learning experience for the graduate students enrolled in the course.

Theoretical Frameworks

Metacognitive and Practice-based Theoretical Foundations of Information Literacy

Budd and Lloyd (2014) captured the essence of information literacy (IL) theoretical foundations by noting the metacognitive and practice-based perspectives of information literacy. For Budd and Lloyd, the practice-based theoretical perspective of information literacy is a social practice connected to other practices through “webs of understanding” (pg. 2). For them, information literacy refers to a set of complex actions and related dispositions that underpin the praxis of human information behavior. Working from a theoretical perspective to create IL instruction considers the deeper implications of becoming information literate. To begin, instruction in IL should include engaging learning that evokes thinking about information retrieval processes, resources, and how the retrieved information will be used. That is, information literacy applies to the world of information, not simply course assignments.

The sociocultural component of IL is reflected in daily world-building actions, developments, practices, and goals. Huotari and Chatman (2001) identify the impact of personal worldviews on information values in everyday life. Thus, ways of knowing and literacy are situated in sociocultural contexts. The climate of modern culture is rooted to a large degree

in technology and academia to an even greater extent (Arua et al., 2019). From a tool or technology-based perspective, using Wikipedia to teach information literacy concepts can level the digital access playing field, as long as access to the internet is available. As a tool, Wikipedia removes the digital divide in that it makes a huge scope of knowledge easily accessible. Wikipedia was selected as the tool to be used in these interventions due to its familiarity with students; the use of a familiar tool can reduce the cognitive load on the students in that they do not need to learn a new tool while grappling with the threshold concepts of the Framework. Finally, using Wikipedia to teach IL highlights the constructed nature of knowledge and the possibility of biased coverage, both of which are stated outcomes and dispositions in the ACRL Framework.

The emergent acknowledgment of multiple literacies based on performance contexts calls for multiple related skills and dispositions (Marty, 2022). Using Wikipedia to teach IL provides the real-world application of IL skills and encourages the use of IL knowledge to practice outside of the boundaries of academic assignments.

Information search process (ISP)

To support the acquisition of IL skills and dispositions across a broad range of sociocultural contexts, especially outside the classroom, the practice of information literacy instruction should be approached as a cycle with teaching and learning occurring over time in an academic setting. IL instruction needs exist not only within a cyclical system of cultural contexts; the behaviors associated with the resolution process of the information need are cyclical in themselves. The search behavior cycle is addressed in Kuhlthau's Information Search Process (ISP) (1991) (Table 1) which outlines the six stages of the process and maps these stages to behaviors within cognitive, affective, and physical domains.

Table 1

Information search process (ISP) (Kuhlthau, 1991)

Stages in ISP	Feelings Common to Each Stage	Thoughts Common to Each Stage	Actions Common to Each Stage	Appropriate Task According to Kuhlthau Model
1. Initiation	Uncertainty	General/vague	Seeking Background Information	Recognize
2. Selection	Optimism			Identify
3. Exploration	Confusion/ Frustration/		Seeking Relevant	Investigate

Stages in ISP	Feelings Common to Each Stage	Thoughts Common to Each Stage	Actions Common to Each Stage	Appropriate Task According to Kuhlthau Model
	Doubt		Information	
4. Formulation	Clarity	Narrowed/ Clearer		Formulate
5. Collection	Sense of Direction/ Confidence	Increased Interest	Seeking Relevant or Focused Information	Gather
6. Presentation	Relief/ Satisfaction or Disappointment	Clearer or Focused		Complete

Information seeking behavior and information searching behavior, are subsets of Human Information Behavior (Jansen & Rieh, 2010; Wilson, 1999). Human Information Behavior received little attention as an affective construct until Kuhlthau proposed the Information Search Process (ISP) model (Kuhlthau, 1991). Previous models focused on information structures and search features with little regard for the user's perspective.

Information seeking behavior (ISB) refers to physical, cognitive, and behavioral engagement experienced during information-seeking and systems searches. Kuhlthau's (1991) ISP is a user-centered model that frames ISB into six recursive steps that align cognitive and affective states with relevant information search actions being taken. It is the first information-seeking behavior model incorporating both cognitive and behavioral aspects of information-seeking and searching. These recursive phases can be observed during the information-seeking process. The ISP model prescribes a variety of mediations or intervention strategies that can drive, motivate, and activate cognitive or affective responses, leading to successful searches through to the completion phase. Different kinds of interventions at appropriate phases can scaffold information-seeking behavior until expertise is achieved.

Additionally, the model can serve as a diagnostic tool during research consultations or assignments. It is applicable whether conducting print-based or digital searching. The stages of Kuhlthau's model are initiation, selection, exploration, formulation, collection, and presentation (Kuhlthau, 1991). These information-seeking and searching phases accompany a continuum of cognitive and affective states. As students build competence during the formation phase, they develop heightened critical thinking and become aware of the variations in authority constructions (Serola & Vakkari, 2005).

Incorporating the ISP model into inquiry-based learning can move beyond mere source gathering activities and into higher-order thinking processes. The ISP model identifies points

at which an intervention can help a searcher move through overwhelming anxiety-ridden searches and into grounds for deep learning (Kuhlthau et al., 2015). Kuhlthau's ISP model attends to dispositions inherent in research activities that even experienced researchers encounter during different phases of information gathering to inform their research.

The ISP model integrates with the ACRL Framework, offering opportunities for mediation or intervention at the user's point of need. In this study, we identified ISP phases corresponding to the ACRL Framework's expected outcomes to develop strategies to ameliorate student frustration and confusion regarding Authority is Constructed and Contextual and Scholarship as Conversation.

Moore's Model of Interaction and Online Learning Engagement Model

Moore's Model of Interaction (1989) also served as a theoretical model for the design of these two interventions. In his model, Moore outlines three forms of interaction in distance education: the interaction of teacher to student, student to student, and student to content (Moore, 1989; Anderson, 2003). According to Moore, deep and meaningful learning occurs within the confluence of these three forms of interaction. For the purposes of our intervention design, in order to facilitate robust engagement with the concepts and dispositions outlined in the ACRL Framework, we concentrated intervention design efforts to maximize the student-to-student and student-to-content interactions. Building on the constructivist theories of Dewey (1916), both Moore and Anderson suggest that it is in student to student interactions that learners are forced to engage with concepts and create new knowledge through the construction or formulation of new ideas (Anderson, 2003). Moore and Anderson also propose that well-designed distance education content can facilitate higher order thinking and ultimately knowledge construction in that it can often conduct many of the knowledge conveyance actions traditionally held primarily in the student to teacher interaction within the traditional classroom (Anderson, 2003). Building on Moore's model as well as the work of Gunawardena et al. (1997), Cercone (2008), and Fink (2003), Ke and Xie (2009, 2010) constructed a model of online learning interaction; their model is organized thematically into three units that were further organized into eight categories within three overarching themes. Their model is designed to demonstrate the progression of the construction of knowledge from surface, individualistic learning to deep, collaborative learning (2009). In 2010, they expanded their model to include social interaction (Table 2). According to Ke and Xie (2010), for online learners to create knowledge, students must go beyond simple information sharing to build a schema that internalizes newly constructed knowledge. This schema is built through a process of elaboration (Ke & Xie, 2010).

Table 2

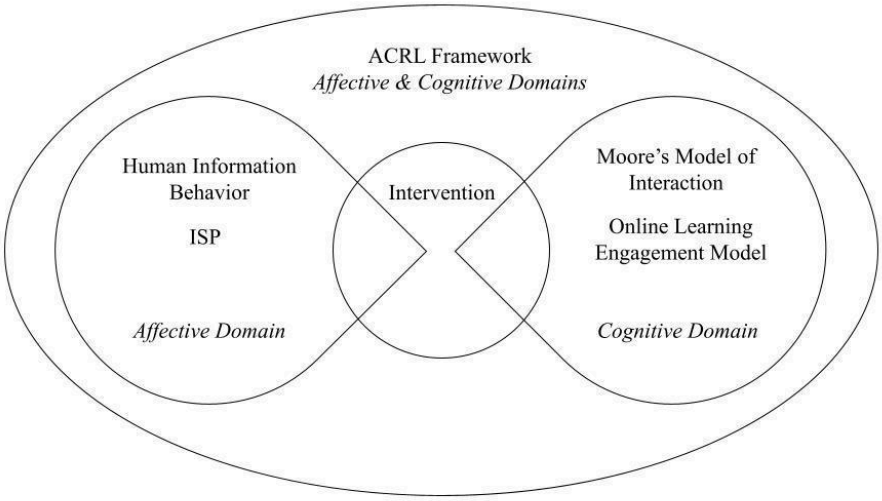
Online learning engagement model (Ke & Xie, 2010)

Code		Category	Definition
S		Social Interaction	Having the indicators of greetings, comments without elaboration, personal life, and emotional expressions
K1	Knowledge Construction	Sharing Information	Simply adding facts, opinions, or questions without elaboration
K2	Knowledge Construction	Egocentric elaboration	Elaborating one's own arguments/concepts/problem solutions
K3	Knowledge Construction	Allocentric elaboration	Comparing and synthesizing peers' multiple perspectives
K4	Knowledge Construction	Application and transfer	Planning future application of new knowledge or proposing in-field application strategies
L1	Regulation of learning	Coordination	Teamwork planning and coordinating for cooperation and/ or collaboration
L2	Regulation of learning	Reflection	Self-evaluation and self-regulation on learning processes
L3	Regulation of learning	Technical issues	Questioning and answering on technological problems or assignment clarification

This novel pedagogical integration of the ISP model with the ACRL Framework guided by Moore's Interaction Model is the first of its kind and has the potential to vastly improve the granularity with which IL can be deployed and with improved learning outcomes (Figure 1).

Figure 1

Proposed Instructional Intervention



Interventions

The primary pedagogical goal in the design of these two interventions was to provide librarians teaching information literacy instruction with interventions using a tangible, familiar-to-students tool, Wikipedia, to teach the esoteric concepts and dispositions outlined in the ACRL Framework: Authority is Constructed and Contextual and Scholarship as Conversation. Historically, librarians have grappled with designing interventions to teach the less concrete concepts of the Framework. As is noted in the literature, much of library information literacy instruction is still primarily skills based and librarians surveyed have found it difficult to incorporate the Framework's threshold concepts into their instruction (Gross et al., 2018; Aharony et al., 2020). While other surveys of library professionals note that librarians have incorporated some ACRL Framework concepts into their instruction and assessed student learning (Hsieh et al., 2021), what remains clear is that the majority of library instruction is only partially informed by the Framework; a recent 2020 survey of librarians found that 77.5% of librarians reported that the Framework had no or only minor influence on their practice (Aharony et al., 2020). When librarians do manage to design instruction to teach these Framework concepts, student learning assessments report that students struggle with Framework outcomes based on more abstract concepts (Hendrigan et al., 2020).

The secondary pedagogical goal of these two instructional interventions was to ameliorate the anxiety and stress that students can experience throughout the information seeking process, particularly when encountering the theoretical concepts outlined in the ACRL Framework. To address the affective domain in these two instructional strategies, librarians used Kuhlthau's ISP model to guide the design and implementation of the strategies. Each

strategy was scaffolded in ways that moved students through initiation and into the selection stage where the topic and approach needed to gather the desired information as provided in each prompt; in these two interventions, Wikipedia and Google Scholar. It is at this point of selection, that students move from uncertainty into optimism. However, that optimism soon shifts into confusion, frustration, and doubt as students move into the exploration phase of the ISP. This phase is considered to be the most difficult stage of the ISP; it is here that students use the approaches provided in each strategy to do the work of gathering information in order to write their group paragraph (Authority is Constructed and Contextual) or complete the citation web (Scholarship as Conversation). As students begin to connect the information seeking task and the larger theoretical concepts of the ACRL Framework, they enter into the pivotal point of the ISP–the formulation phase where frustration and confusion shift to clarity.

Both interventions were designed according to the Successive Approximation Model 1 (SAM1). This model was chosen due to its iterative, agile nature (Allen & Sites, 2012); it allowed the designers to produce, implement, evaluate, and redesign the instructional interventions quickly and efficiently. In the first iteration of SAM1, the librarians and subject experts worked collaboratively to identify the instructional goals and learning objectives through a rapid evaluation of the learning context. The design phase occurred almost concurrently with the development phase; learning objectives were identified, and instructional artifacts were produced quickly to address those objectives. During the second iteration of SAM1, the instructional interventions were evaluated by both the librarians and the subject experts. Changes were then made to refine the interventions based on that evaluation.

In this case, the interventions were designed to be administered in a graduate-level school library curriculum course via the university's learning management software, Canvas, and completed over one week of instruction. As two of the three deliverables were to be completed as a group, the instructor of record assigned each student to a group at the beginning of the module.

Intervention 1: Authority is Constructed and Contextual

This intervention is intended to introduce students to the concept that authority is constructed and contextual. Secondarily, it is meant to instruct students to define types of authority, use indicators of authority to determine the credibility of the source, understand that disciplines may have acknowledged authorities (but even these can be challenged), authority can be formally or informally packaged and may include different media type sources, and "understand the increasingly social nature of the information ecosystem" where authorities connect, and sources develop (ACRL Framework, 2015). The Framework notes that a student who understands this concept is able to recognize that authority can be conferred or manifested in nontraditional ways and that they should seek authoritative sources, as well as develop an awareness of the importance of assessing content.

Our Authority is Constructed, and Contextual instructional strategy is informed by Constructivist learning theories (modified Harkness discussion), Bloom's cognitive

taxonomy, and levels of cognition; the elements of the strategy require students to perform higher order cognitive tasks (e.g. analysis, evaluation, collaboration), the student to student/student to content components of Moore's Model of Interaction (1989), and Kuhlthau's ISP (1991). The idea of authority is rooted in sociocultural contexts. This IL task also addresses the sociocultural contexts of IL when students are asked to construct a team of authorities.

It is designed to meet the following learning outcomes:

1. Students can define different types of authority.

2. Students can identify and use tools to determine authority.

3. Students can demonstrate an understanding that authority is dependent on context.

3. Students can construct a team composed of different "authorities" and defend the rationale for each authority's inclusion.

Intervention Implementation

To begin the intervention, students were provided the following prompt and were asked to respond in the Canvas online discussion board:

Discussion Post: By this point in your academic career, you understand that quality, authoritative sources are expected in order to support your assertions/arguments in your research, but how do you determine authority? The simple answers of "avoid Wikipedia" and "use a peer-reviewed scholarly journal article" are accurate in some situations, but the question of authority is more complex than that. What if you are writing about the most recent Black Lives Matter movement? Or the design of a new amusement park?

Answer the following:

1. What is an "expert?"

2. How is expertise/authority constructed?

3. Are the attributes/criteria you listed above applicable across all contexts?

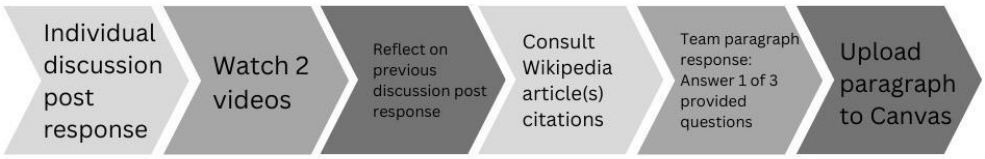
This prompt was designed to ask students to begin to consider their own definition of expertise and how situational contexts can impact their definition and application of expertise. After completing the discussion post, students were provided two short YouTube videos detailing and explaining the Authority is Constructed and Contextual frame. After watching the above videos, students were then asked to reflect on their earlier definition of expertise and if it had changed. The provocative nature of the prompt and following videos complicating their understanding of authority forced students to initiate the first stage of the ISP model (1. Initiation) where their prior understanding and assumptions are challenged. In the cognitive domain, students recognize this complexity, and feelings of uncertainty arise. Based on their new conception of authority, students were asked to work in their earlier assigned groups to construct an expert/team of experts for one of the following topics:

- Design a new, historically accurate first person shooter video game set at the Battle of the Bulge.
- Write a proposal to set this year's Red Snapper fishing limits.
- Design a childhood obesity intervention program at a local elementary school.

Students were directed to navigate to Wikipedia.org and use the search bar to search for information on their chosen topic. Based on the reference citations of each Wikipedia article, students were directed to both observe and identify the kinds of authorities referenced; this task moves students through the cognitive and affective domains that correspond to the Selection (2) and Exploration (3) stages of the ISP: optimism followed by confusion and frustration. In this manner, they were able to identify the constructed authority for their topic/chosen articles; in this formulation stage (4), students develop an affective state of clarity, consolidate their thoughts, and prepare for the collection (5) and presentation (6) stages. After identifying their group of experts, each group was asked to write a short paragraph explaining the composition of their selected team and the rationale for the inclusion of each expert. They were asked to specifically consider why they included the people they did and how they identified their authority. This paragraph was submitted via file upload to Canvas (Figure 2). While the student experience of the ISP process is not linear, but rather recursive, the above intervention is designed to both increase student familiarity with the Framework concept of questioning authority and student confidence in their ability to recognize and discover authorial validity while considering the context of the information need.

Figure 2

Intervention 1 Implementation



Intervention 2: Scholarship as Conversation

This intervention is intended to introduce students to the concept that scholarship is a conversation. Secondarily, it is meant to instruct students to provide correct attribution to scholarship, critically evaluate resources in "participatory information environments," recognize that seminal scholarship exists within disciplines, and recognize that scholarship changes over time and that competing viewpoints exist (ACRL Framework, 2015). This intervention addresses the cyclical nature of information as noted in Budd and Lloyd (2019), and is reflected in the concept of conversation as a structure of information and knowledge. The ACRL Framework notes that a student who understands this is able to recognize that they are joining a conversation of scholarship (there are no fixed endpoints or demonstrable "truth") and that they themselves can contribute to this body of scholarship (ACRL Framework, 2015).

Our Scholarship as Conversation instructional strategy is informed by Behaviorist and Social Cognitivist learning theories as well as Bloom's cognitive taxonomy and levels of cognition; some elements of the strategy are procedural (low-level Blooms), and others require students to perform higher-order cognitive tasks (e.g., analysis and evaluation). This instructional strategy is also informed and designed in alignment with the knowledge construction theories of Moore (1989) and Xie and Ke (2010) as well as Kuhlthau's (1991) ISP. Students must engage in student to student and student to content interactions with the ultimate goal of new knowledge construction, transfer, and application.

It is designed to meet the following learning outcomes:

1. Students can locate the References section of a Wikipedia article.

2. Students can identify and use tools to analyze scholarly contributions.

3. Students can demonstrate an understanding of the concept of scholarship and conversation in a graphical representation.

4. Students can analyze the results of their Google Scholar search and identify seminal/important scholarship relevant to their topic of inquiry.

To begin this intervention, students were asked to select a topic related to the subject of the course and perform a search in Wikipedia for their chosen topic (student to content interaction, ISP stage 1: Initiation). Using video instruction, a librarian demonstrated the skills required to complete the assignment; students were additionally provided a completed worked example for additional aid and a link to an online tool for citation web design (Figure 3). Students were instructed to locate the references section of their chosen Wikipedia article, skim the section, and select an article that interests them; this article will serve as the parent article and will be the center of the citation web ultimately created. Once the article had been located and selected, students were instructed to record both the citation in the correct APA format and the number of citing documents included within Google Scholar in parentheses (Cited by #) in the center of their web. They identified the number of article citations by searching for their chosen citation/article in Google Scholar. Students were then asked to follow the "Cited by #" link to find two additional articles that cite their parent article and add the APA citations for these two articles to their citation web (student to content/student to student interactions, ISP stages 2 and 3: Selection and Exploration). Students began identifying the scholastic conversion and connection by drawing arrows pointing from their initial article to these "secondary" articles, indicating that they used the parent article as a citation. Students continued to use Google Scholar to identify connected articles by following the "Cited by #" links of their parent and secondary articles until they identified and recorded at least four degrees of scholarship (student to content/student to student interactions, ISP stages 4, 5, and 6: Formulation, Collection, and Presentation). After completion of the citation web, students were asked to reflect and analyze their results to identify if an important or seminal work of scholarship was represented in their web and indicate the seminal scholarship with an asterisk (*). This final step of the intervention is designed to return students to the early stages of the ISP where they must use prior knowledge to investigate and formulate. Finally, students submitted their group's scholarship web via a link in Canvas (Figure 4).

Figure 3

Worked Example-Scholarship as Conversation

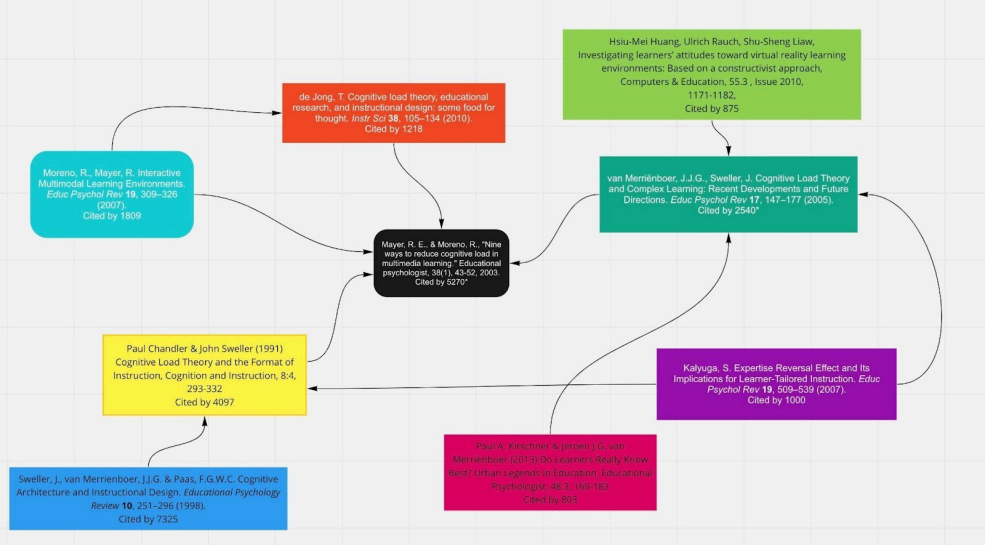
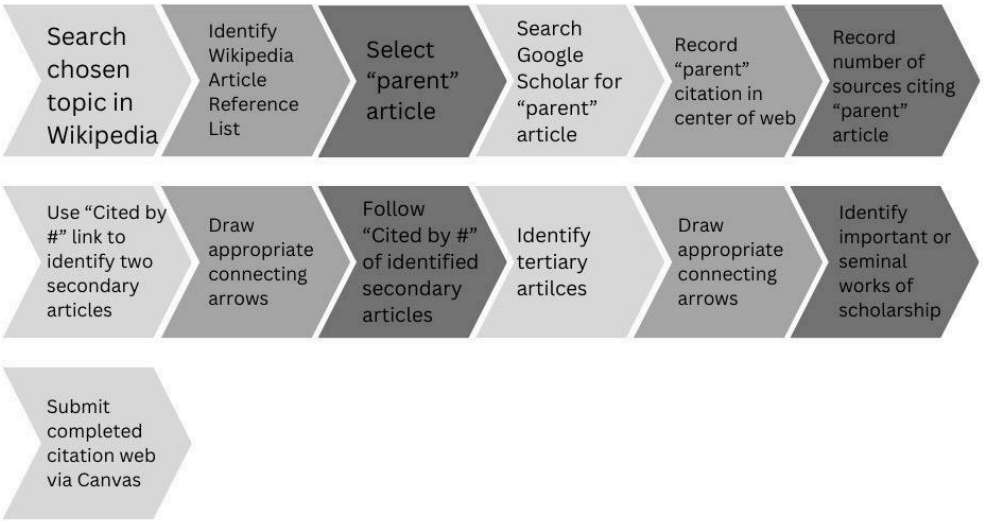


Figure 4

Intervention 2 Implementation



Outcomes

To test the efficacy of the above instructional interventions, the librarians conducted a student learning assessment using a causal modeling exploratory, nonexperimental research design. Student learning was assessed using two methods to assess if instructional Intervention 1 Authority is Constructed and Contextual achieved its

instructional objectives. To assess if thoughtful discussion occurred in the discussion post portion of the intervention, student discussion responses were coded using an a priori code according to Ke and Xie's (2010) Online Learning Engagement Model. Incidents of knowledge construction were identified in the student discussion responses (Table 3). Fifteen posts in K1 indicate that most student responses were at the level of adding factual information or opinions without elaboration. Twenty posts in K2 and K3 indicate that most student responses were merely egocentric and/or allocentric. K4 responses indicating application and knowledge transfer occurred in only 3 student responses. In future implementations of this intervention, the design will be expanded to require students to respond to a minimum of two classmates' posts; this increase in required responses is designed to increase student-to-student interactions (Moore, 1989) with an ultimate increase in higher order collaborative learning and knowledge construction through added opportunities for transfer and elaboration (Ke & Xie, 2010).

Table 3

Instructional Intervention 1 Authority is Constructed and Contextual Student Learning Assessment Results (Discussion)

KC Type	K1	K2	K3	K4
Discussion Post 1	1	4	2	2
Discussion Post 2	2	1	1	2
Discussion Post 3	1	3	2	6
Discussion Post 4	1	1	1	0
Discussion Post 5	7	1	1	0
Discussion Post 6	3	2	1	0
Total	15	12	8	10

Note: K1=sharing information; K2=egocentric elaboration; K3=allocentric elaboration; K4=application and transfer

A simple four criteria rubric was applied to conduct a student learning assessment of the group-generated paragraph deliverable (Table 4). Both groups demonstrated a mastery of both defined intervention objectives. Both groups constructed an expert team and developed a rationale for each expert member's inclusion, thus demonstrating an understanding that authority is constructed based on immediate need and that it is context dependent. One group noted that they would include "a dietician, exercise expert, a chef, and a Behavior Specialist" in a team to combat childhood obesity. To justify the inclusion of a chef, the same group noted that a chef would serve as our authority on flavor.

> *One of the biggest complaints about healthy food is that it is bland and boring, so we would want someone on our team who specializes in making good food. [...] The children aren't going to get the nutrients if they do not eat the food. Ideally, this would be someone from a local restaurant so that they can identify the best places to get fresh food [...] and know the food culture of the kids, making the food even more appetizing and familiar to them.*

Table 4

Authority is Constructed and Contextual Student Learning Assessment Instrument

Objective	1	2	3	4
Construct a team composed of different "authorities" and defend the rationale for each authority's inclusion	Only one expert identified	Only two experts identified	Three experts identified from similar fields	More than three experts identified from three different contexts or fields
Demonstrate understanding that authority is dependent on context.	No evidence supplied that authority is contextual (eg. why and how they contribute to the group)	One facet of authority is explicated	Supplied multiple experts, but neglected to include multiple facets for all experts	Multiple facets of authority are explicated

Instructional Intervention, 2 *Scholarship as Conversation* student learning, was assessed by applying a set of closed questions and a simple four-criteria rubric (Table 5) to the student groups' submitted scholarship webs.

Table 5

Scholarship as Conversation Student Learning Assessment Instrument

1. Is a parent article represented on the web? YES NO

2. Apply below rubric

Objective	1	2	3	4
1. Identify secondary and tertiary articles	Identified articles ONLY secondary article(s)	Identified articles secondary AND tertiary articles	Identified secondary and tertiary articles AND included “Cited By” for some represented articles	Identified secondary and tertiary articles AND included “Cited By” for ALL represented articles
2. Demonstrate relationships of articles-concept of scholarship as conversation	Either graphics or arrows are not represented (not present)	Graphic does not represent connected relationships	Graphic is complete, BUT errors in arrow direction	Graphic is complete, relationship arrows represent connection (present and in the correct direction)

3. Is a seminal work identified? YES NO

Results of the student learning assessment for instructional intervention 2 reveal that this intervention appeared to meet its intended objectives, thus proving to be an efficacious instructional model (Table 6). While both Groups 1 and 2 met all requirements in that they achieved 4’s on all criteria, only Group 1 scored “Yes” to all open questions (Table 6). Group 2 failed to identify any seminal works within their web (Figure 6). This is possibly a result of the design of the instruction itself. In future implementation of this intervention, during the didactic instructional portion of the implementation, more attention will be directed to defining the nature of a seminal article and its relation to all other scholarship.

Table 6

Instructional Intervention 1 Scholarship as Conversation Student Learning Assessment Results

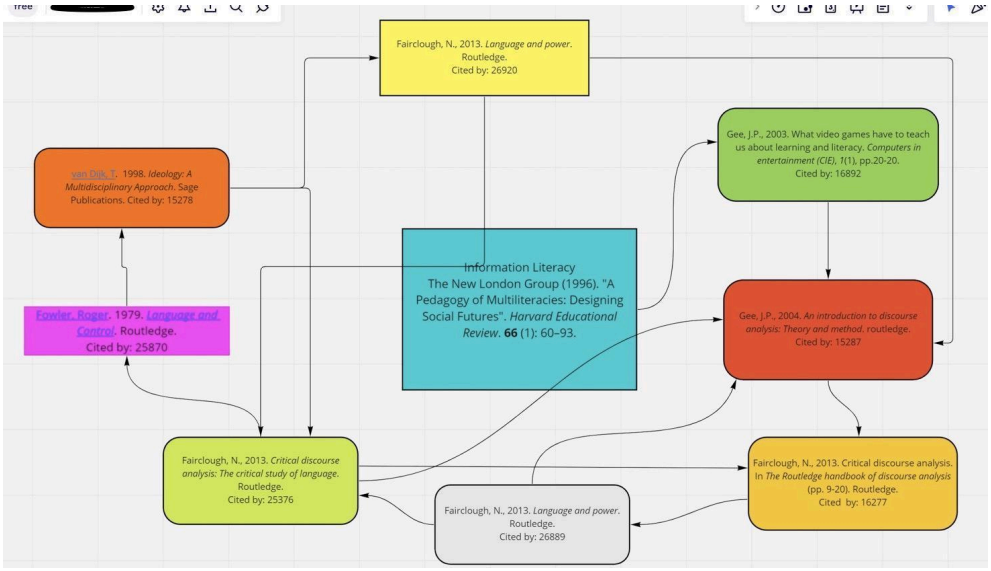
Group	Question 1	Objective 1	Objective 2	Question 3
1	YES	4	4	YES
2	YES	4	4	NO

Figure 5

Group 1 Scholarship as Conversation Citation Web Submission

Figure 6

Group 2 Scholarship as Conversation Citation Web Submission



As described above, the outcomes of the assessments of both instructional interventions indicate that the participating students understand the threshold concepts related to the two frames Authority is Constructed and Contextual and Scholarship as Conversation. According to Kuhlthau's ISP model, increased understanding and clarity of thought result in increased confidence. This increased confidence, in turn, reduces student anxiety (Kuhlthau, 1990).

Conclusion

This case study highlights the effectiveness of using Wikipedia as an instructional tool to teach the concepts of Authority as Constructed and Contextual and Scholarship as Conversation from the Association of College and Research Libraries (ACRL) Framework for Information Literacy in Higher Education. By incorporating instructional strategies based on Kuhlthau's Information Search Process Model and Moore's Model of Interaction, students were able to use Wikipedia as a tool to engage with these abstract concepts in a tangible and familiar manner. The use of Wikipedia ultimately enables students to develop information literacy skills, including understanding the constructed nature of knowledge and evaluating authority. The interventions not only facilitated learning of the ACRL Framework concepts but also guided students through the information search process, helping them overcome uncertainties and frustrations (Park & Bridges, 2022).

Additionally, these interventions addressed the challenges faced by librarians in integrating the ACRL Framework into their instruction. Traditional library instruction has often focused on skills-based learning, making it difficult to incorporate more abstract concepts. However, by leveraging Wikipedia, librarians can bridge this gap and provide students with real-world

applications of information literacy skills. The interventions presented in this study fostered critical thinking, deep learning, collaboration, and interaction among students, promoting knowledge construction and the development of higher-order thinking skills.

While the interventions presented here were designed and implemented prior to the release of ChatGPT in November 2022, the learning objectives, lesson plans, and activities can easily be modified to remove Wikipedia as the tool and replace it with ChatCPT. Similarly to Wheatley and Hervieux (2022), who used workshops to explore issues related to AI literacy, ethics, and bias, and use in research, the interventions presented here easily translate to ChatGPT. Specifically, the Authority is Constructed, and Contextual intervention can be used to explore the bias and reliability of sources and information generated by AI. The Scholarship as Conversation intervention can be modified to explore the web of related scholarship on any topic using an AI literature review tool such as Scite.ai, ResearchRabbit.ai, or Semantic Scholar.

Overall, using the presented instruction strategies using either Wikipedia or AI as an instructional tool offers a valuable approach to teaching information literacy concepts and enhancing students' information literacy skills in diverse sociocultural contexts.

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