Curiosity is a Luxury of the Financially Secure: The Affective Thresholds of Information Literacy[1]

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Abstract

Prior research has examined the ways in which affect and poverty impact cognitive processing. In this article, we examine themes that emerged via directed conversations with focus groups of students enrolled at a large, open-enrollment community college located in a high-poverty area of Southwest Missouri. We explore several affective dimensions of information literacy, including frustration and anxiety with the process of and expectations surrounding academic research, feelings of information overload, and guilt and shame about relying on web sources as well as the intersections with class status and economic privilege. We propose additional affective learning practices and dispositions that articulate the steps to information literacy that learners need to develop along the way. Finally, we examine some considerations for designing effective assignments that acknowledge the many affective components of college-level research.

Introduction

As librarians at Ozarks Technical Community College (OTC), a large, open-enrollment community college located in a high-poverty area of Southwest Missouri (the counties in the surrounding service area have poverty rates of up to 28 percent, and more than 66 percent of our students receive federal financial aid), we are aware that our students are often preoccupied with obligations outside of school and may experience financial stress related to basic-needs security. We believe that this financial precarity has implications for the ways in which students encounter information and engage with research assignments.

Drawing on our classroom interactions with students, we have observed that anxiety and stress—affective states brought on by work, family, edu-

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cational barriers, and the massive amount of information encountered through social media and mobile phone use—are barriers to critical thinking about information. In classroom activities, students voice a mistrust of any information found online (e.g., Wikipedia, online news, and social media), but these are also the sources of information most freely and immediately available to them. Students often claim that they exclusively trust print books and peer-reviewed scholarly articles (which we see as a reductive belief repeatedly taught to them from middle school on), and yet these are the sources of information with the greatest barriers to access. For our students, who are more likely to be food and housing insecure, work part- or full-time, and are caretakers for one or more family members, being asked to explore and then make decisions about the gray areas of research and to develop critical, self-reflective criteria about the relative value of a source can be an added source of stress, especially when it contradicts instructor expectations.

Before embarking on this study, we encountered a number of students who simply gave up in the face of a research assignment; it was as if, for some students, the task of selecting, reading, and synthesizing credible sources was enough to make them shut down. This would happen despite our shift toward student-centered and critically engaged active learning that acknowledges students' own experiences (usually with Google or Wikipedia) and the limitations and challenges of library research. With these experiences in mind, we set out to answer these fundamental questions: Why are our students so overwhelmed, not just by critical information literacy, but by the work of research? And, from what context does our particular student population operate and does that matter?

Applying research on affect, cognition, and threshold concepts in information literacy, we attempted to answer these questions using focus-group interviews with OTC students and grounded theory to pull out emerging themes on the role of affect in information literacy. We correlate our findings with the realities of our students' everyday lives using demographic data. We explored why the affective practices of information literacy can seem beyond the reach of students who are struggling to meet their obligations in their day-to-day life. We posit that questioning traditional notions of granting authority, accepting ambiguity, valuing intellectual curiosity, or recognizing the value of browsing and serendipity can all be viewed as luxuries. Articulating and addressing these practices and their emotional costs is essential for student-centered teaching in an information-literacy program. We hope to begin the conversation not just about the unspoken emotional work of information literacy but about the affective aspects our students must engage to begin the work of critical thinking and the lived experiences that inform student information-literacy skills before they reach the classroom. Specifically, we hope to address the affective experience this work produces, the ways that may problematize the Associa-

tion of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* (2016), and how the affective thresholds and emotional labor of information literacy may be troublesome barriers to students in community-college populations like ours.

Literature Review

In order to better understand the affective dimensions of learning, cognition, critical thinking, and information-literacy instruction, we explored the work on affect done by psychologists and educational psychologists such as Lisa Feldman Barrett, James Russell, and John Sweller. And, because we intended to collect demographic information from our sample, and had observed the apparent impact of socioeconomic context on student learning in the classroom, we also looked to the work of behavioral economists such as Johannes Haushofer and Ernst Fehr to understand the impact of poverty and gender on affect, cognition, and learning. We applied this knowledge to an understanding of the history of the development of the studies of affect in information studies, and the development of the ACRL *Framework* and its origins in the study of threshold concepts. We cannot claim a thorough history of all three, but we look for the points where they intersected to help us understand the phenomena we observed: the challenges and complications of affect for learning, the understanding of affect in the discipline, and the origin of our current guiding professional document.

Affect and Learning

The impact of emotion and affect on cognition, while studied and theorized across disciplines, is not fully understood. In psychological literature, emotion has been referred to, as Russell argues, "a heterogeneous cluster of loosely related events, patterns, and dispositions . . . and empirical scrutiny could easily find evidence for each" (2003, 167). The physiological systems behind emotion are still much debated, as the complicated relationship between tissue, chemicals, and consciousness have been theorized and disputed from Darwin and William James to Bechara and Demasio and on to Lisa Feldman Barrett (Barrett 2006, 2017; Dalgleish 2004). What is clear is the increasingly important role that understanding emotion plays in understanding cognition and learning. As far back as 1963, Ulric Neisser and then Herbert Simon (1967) argued that "human thinking begins in an intimate association with emotions and feelings which is never entirely lost" (Neisser 1963, 195). In describing emotional states, researchers described various structures of affect, beginning with the two-dimensional pleasure-activation models of Wundt (1924), Schlosberg (1941), to Watson and Tellegen's (1985) Positive and Negative Affect Schedule (PANAS) model (all described in Barrett and Russell 1999). These models measured affect along two valences: pleasure to displeasure

and activation or engagement to deactivation or disengagement. Barrett and Russell went on to describe *core affect* (1999) as the essence of emotion, mood, feeling—the "raw (nonreflective)" state that can be measured on this spectrum from deactivation to activation, and from displeasure to pleasure (Russell 2003, 148). Barrett, Russell, and others distinguish affect from emotion: emotion is an emergent experience made up of several processes, one of which is affect (Barrett and Russell 1999). But, they argue, affect can be used to measure emotions, because "conscious emotional experiences may be constructed by applying language to affective feelings" (Barrett and Russell 1999, 13). In other words, emotion is complex, and is deeply tied to cognitive processes, but we have to start somewhere in naming the role emotion plays in learning and thinking.

Emotion itself is deeply embedded in our cognitive processes, and some argue that emotion is a determining cognitive process (Barrett 2006; 2017). Cognitive load theory describes the capacity for learning as the result of the number of overlapping or concurrent cognitive processes, which can result in ineffective learning (Sweller 1988). If emotion and cognition are understood as, in fact, the same set of processes (Barrett 2017; Inzlicht, Bartholow, and Hirsh 2015; Kron et al. 2010), then emotion and affect add to cognitive load. Studies have found that the impact of affect and emotion on cognitive load includes decreased task performance and executive deficits (Mueller 2011), impaired decision-making (Lerner et al. 2015), trade-off avoidance (Drolet and Luce 2004), and impact information processing (Cohen, Pham, and Andrade 2008). Further, socioeconomic factors, including poverty (Haushofer and Fehr 2014) and gender (Panno et al. 2018), often correlate with negative affect, compounding the difficulties of life with the negative impacts of cognitive overload (Mani et al. 2013; Shah, Mullainathan, and Shafir 2012; Schilbach, Schofield, and Mullainathan 2016). In other words, we know learning to be profoundly impacted by emotion and compounded by socioeconomic context.

Based on this prior research, we understand affect to be the temporary state of emotive experience: defined on one valence by strength (from active to inactive) and on the other by positive or negative experience (from calm to excited, or from depressed or indifferent to angry or stressed). This definition is based on the work of Watson and Tellegen (1985) and Barrett and Russell (1999). Affect is distinct from emotion in that it is a temporary state, and negative affect is distinct from ongoing mental illness because a negative affect is a state (a state of anxiety), rather than a trait (a mood disorder may be characterized by the trait of anxiety). This is not to say that emotions, mental health, and affect do not overlap. In fact, as the research of the impact of socioeconomic context on negative affect shows, they may be inseparable. But we aim our research and observation at the affective states brought up by the work of research, and it is these affective states we have observed to be a barrier to learning for our students. We

understand affective states and emotions are sometimes used interchangeably by our interviewees, but because our focus is on addressing students' perceptions and experiences, we ask for a bit of leniency in the blurring of these definitions for the sake of allowing students to speak for themselves.

Information Science and Affect

Work on affect, emotion, and information behavior is heavily influenced by Constance Mellon's grounded theory of library anxiety. Students asked about their experiences in the library responded with anxiety and fear: overwhelm about the size and complexity of the library system, feeling lost in the physical library and in the materials found there, and anxiety about not understanding library research, resulting in a fear of asking questions (Mellon 1986). Subsequent research on library anxiety found that it often resulted from differences in cultural background (Jiao, Onwuegbezie, and Lichtenstein 1996), experience with technology (Jiao and Onwuegbezie 2017), and self-estimation of research skill level (Gross and Latham 2007). As online resources have come to dominate library holdings, research has grown on information behavior and affect across technologies and populations (Nahl and Bilal 2007; Bawden and Robinson 2009; Lopatovska and Arapakis 2011; Miller and Wallis 2011; Fourie and Julien 2014).

Health-information behaviors in particular became a focus of research, understanding the affective behaviors of avoidance, seeking, coping, and dissonance that arise when dealing with information on cancer and other conditions (Johnson 1997, 2003; Case et al. 2005; Kim et al. 2007; Fourie 2009; Swar, Hameed, and Reychav 2017). Out of these studies of high-stakes information behavior like cancer research came important models for understanding the role of affect in information behavior. Johnson (1997) developed a framework for understanding the contexts (demographics, experience, salience, and beliefs) that produce information behaviors like information avoidance or seeking, and how they are related to affect, like anxiety and fear. Kim et al. found that lower socioeconomic status, low media literacy, pre-existing mental health problems, and low educational attainment were predictive of behaviors they describe as "cancer information overload" (2007). Studies of information overload fill the literature; information-behavior studies in particular have focused on the importance of acknowledging the *context* from which information seekers operate (Case and Given 2016, 10): the kind of the information they seek may vary, but demographics, experience/education, and salience are consistently relevant to information behavior in any setting. Information-behavior science has largely examined the role of affect in motivation, information seeking, and avoidance (Case and Given 2016).

Kuhlthau began to look more specifically at the emotions that come up and influence the different stages of the information-seeking process: optimism, uncertainty, confusion, frustration, confidence, clarity, satisfaction/

disappointment (1991, 2004). Further work on the role of emotion/feelings followed Kuhlthau, looking at the information-seeking process and motivation in particular (Savolainen 2014, 2015). Nahl and Bilal's seminal *Information and Emotion* (2007) explored affect in multiple information-seeking settings, establishing both the importance of affect in information-behavior research and several models for understanding behavior through affect. Given's and Julien's chapters in particular described the emotions that arise in students in a college research setting and called for further study of the connections between affect and information literacy (Given 2007; Julien 2007). This prior work on describing the relationship between affect and information behaviors is useful to our research given our focus on describing the particular affective contexts of our students at a high-poverty regional community college and what implications this might have for our instruction program and its alignment with the affective dispositions of the ACRL *Framework*.

The ACRL "Framework" and Affect

The ACRL *Framework* was adopted in 2016, in part to acknowledge the role of affect in information literacy. The *Framework*'s dispositions often contain the interpretation of affect found in information-behavior studies, using verbs like *motivate*, *value*, *realize*, and *persist*. And each frame contains affective and metacognitive threshold concepts of information literacy. Threshold concepts were first invented by Jan Meyer and Ray Land as a way to describe the "troublesome" concepts that, once grasped, are transformational and irreversible for the learner: the ah-ha moments that forever change us and that, once we've surpassed, make it difficult to remember what it was like to not understand (2003, 2005; Meyer, Land, and Baillie 2010). Threshold concepts have become important tools for educators because they articulate barriers between teacher and student and force learning outcomes to make the implicit explicit. These concepts have affective dimensions because, as described by Timmermans, "the construction of meaning, the journey to each new truce, is both a cognitive and a deeply emotional venture for learners" (2010, 7). Crossing the threshold causes both grief (Timmermans 2010) and cognitive dissonance (Walker 2013), unpleasant feelings that require persistence to move beyond.

As threshold concepts have been embraced across many disciplines (Atherton, Hadfield, and Meyers 2008), academic librarians have begun to explore what threshold concepts describe information literacy (Hofer, Townsend, and Brunetti 2012). Surveys of information-literacy experts and instructors were used to develop threshold concepts, which in turn were developed into the *Framework* (Hofer, Townsend, and Brunetti 2012; Townsend et al. 2016). Starting in 2014, an ACRL task force began sharing drafts, which, over several months of iterations and open calls for feedback, was adopted in 2016, and articulated six frames of threshold

concepts that were detailed with information-literate learners' knowledge practices and dispositions.

The *Framework* was at no time without its critics from across academic librarianship. We will discuss a few relevant instances here. There was immediate pushback from community-college librarians, who, despite having given feedback during the draft process, believed that the *Framework* left them with process-based standards in an outcomes-driven world, further complicating the push for assessment throughout higher education and already underfunded community colleges (Reed 2015; Bird 2016; Craven 2016). Another critique of the *Framework* valuable to our research was that it lacked student-centered development, because, as Scott notes, "student input has not yet directly entered into the Framework's feedback loop, despite the document's stated desire to include students' voices" (Scott 2017, 284). Scott's own research revealed that the frames described as troublesome and transformative did not align with students' perceptions (2017). Further research by Yevelson-Shorsher and Bronstein found that student, faculty, and librarian values and expectations for information literacy varied wildly: students both devalued their own abilities and called for practical applications of information-literacy instruction, while faculty and librarians disagreed on when and where instruction should take place (2018). This disconnect between student and faculty expectations and the troublesome and transformative goals of the *Framework* are where much of the difficulty lies—the muddy middle where many information-literacy programs lie. We found the findings by Scott and Yevelson-Shorsher and Bronstein to align with our own experiences implementing the *Framework* at our community college. The troublesome and affective dimensions of these threshold concepts seem to be where our students get stuck. We find the *Framework* to be valuable but insufficient for our students because it does not acknowledge student context and the places where students get left along the way to these troublesome and transformative thresholds. We hope to add to the literature wrestling with the *Framework*: what it is and what it could be.

Method

In this study, we examine themes that emerged through directed conversations with focus groups of students enrolled at the Springfield, Missouri, campus of Ozarks Technical Community College. Our questions focused on the affective dimensions of information literacy, including feelings of information overload and guilt and shame about relying on web sources. This research project was approved by the Institutional Review Board of Ozarks Technical Community College.

We recruited students from classes that have interacted with the library during the semester and from students studying in the library. We used pizza and snacks as an incentive for participation and advertised on pub-

lic bulletin boards across the campus, by a librarian pop-in to particular classes, and in the library. In total we had thirty-one participants, with three focus groups of six, twenty, and five, respectively, over three days. Although this sampling could not guarantee a representative sample, we gave all participants a demographic survey in order to compare them to the known demographics of the college population. The demographic survey included home ZIP code, age, credit hours taken, gender, race/ethnicity, annual household income, employment, caregiving responsibilities, and semesters in college. The discrepancies between our sample and the population are described below.

We held three approximately one-hour-long focus groups over three consecutive days in the second half of the fall 2018 semester. At the beginning of each focus group, participants were verbally informed of the study's purpose and procedures, as well as their right to cease participating at any time, and given an opportunity to ask questions. We also provided a written informed-consent document. Both researchers were present, one taking notes and the other leading the discussion and asking questions. The session was held in a quiet space away from the library; our hope was to avoid priming students to tell us what they thought we wanted to hear, and we feared that holding sessions in the library could create some subconscious expectations. The sessions were audio recorded and subsequently transcribed, and this was used to identify themes in addition to the demographic survey and researcher notes. Although additional conversations with students would certainly yield additional examples, we reached a point of saturation in the three focus-group sessions and were no longer hearing entirely new responses or themes. We used a semistructured approach to the focus groups, asking four specific questions and then follow-ups as needed. In addition, we used participant responses to generate follow-up questions, and allowed participants to respond to one another. These questions included the following:

- Describe how you decide what information you trust online. How does it feel when you're sorting through this info you're not sure you can trust?
- Have you ever done research online for personal reasons, something really important to you? What was that like? What feelings came up?
- Have you ever used a web source even though you weren't sure you could trust it? How did that make you feel?
- How does doing research for school (academic research) make you feel? What do you wish your instructors knew about how this feels for you?

This semistructured approach was used because our study was descriptive in nature and unanticipated responses were desirable. This focus-group method allowed for a dynamic conversation, in which we could address questions and ideas as they came up organically in addition to our predetermined prompts.

Sample Description

The results of the demographic survey of our focus groups (see table 1) showed that our sample ranged from traditional-age first-year students to nontraditional returning students; the median age of our participants was twenty-two. According to OTC's Institutional Research Office, the median age of OTC students is twenty. Our sample skewed slightly older and slightly more female than the overall OTC population, but overall the age, gender, and racial makeup of our sample was similar to that of the OTC population as a whole. A larger portion of students in our sample were enrolled full-time, which makes sense because we are more likely to encounter full-time students on campus (as opposed to online) and in the courses we recruited from. The number of students currently employed in our sample is also reflective of OTC as a whole: more than 80% of OTC students are employed while enrolled, and 84% of our sample was employed, either part-time or full-time. Overall, the sample of students who participated in our focus groups was reflective of the population of OTC as a whole, but not necessarily generalizable.

In addition to basic demographics, we gathered some information to get a general sense of the time commitments students had between daily life and school. More than 73% of our participants were taking a full-time course load (twelve credit hours) or more, and 84% of them were working at least part-time, with 26% working full-time. More than a third of our participants had caregiving responsibilities, for ranging from one to seven relatives or dependents. On average, our participants had been attending college for five semesters, and more than two-thirds had been attending for more than one year. This suggests that our sample skewed toward students with more experience with research and college-level expectations, which is reflected in the data in our findings: our participants had, in some cases, very developed information-literacy and research skills. This statistic is also reflective of OTC students as a whole, who were only about 34% first-year or high school students in 2017; the rest were continuing, returning, or transfer students. Overall, our participants reflected the college population as well as our own anecdotal experiences with OTC students: generally overloaded with work, family, and school, and struggling down the long road to graduation.

We gathered data on both the home ZIP codes and student's self-estimate of annual income to determine the median household incomes of our sample. We estimated the median household income by ZIP code for our sample in the table 1 ($38,862) using 2013–17 ACS Census data, and compared it to the median income for OTC's twelve-county service region ($44,688), provided by OTC's Office of Institutional Research. The median self-reported annual income of our participants was between $15,000 and $25,000, while the federal poverty level in 2018 was $16,460 for a

Table 1. Demographic Survey Comparison to Overall OTC Population.

Demographics	Sample (n=31)	Population (OTC)
Median Age	22	20
Average Age	26	21
Gender – Male	29%	41%
Gender – Female	68%	59%
Gender –Nonbinary	3%	
Race/Ethnicity – White	84%	86%
Race/Ethnicity – Non-White	16%	14%
Race/Ethnicity – Black	6%	
Race/Ethnicity – Native American	10%	
Full-Time Enrollment	73%	45%
Part-Time Enrollment	27%	55%
Employed	84%	81%
Employed Full-Time	26%	
Employed Part-Time	58%	
Median Household Income	$38,862	$44,688

family of two, and in Springfield, the metropolitan area we serve, 25.9% of the population lives below that level. According to MIT's Living Wage Calculator, a living wage for a family of two in Missouri is $48,776. This suggests that our overworked students are also living on less than a living wage, many of them living below the poverty level. This is significant to our findings, if not surprising for our region, because, as noted above, poverty itself impacts cognitive load (Mani et al. 2013) and produces negative affective states (Haushofer and Fehr 2014)—putting our students at a disadvantage from the start.

As mentioned above, the counties in OTC's service area have poverty rates of up to 28%, and more than 66% of OTC students receive federal financial aid. And in OTC's service area, from 15–24% of residents are food insecure (Missourians to End Poverty 2018). More than 50% of rental homes in Greene County, the county where OTC's main campus resides, are not affordable, meaning that housing costs are more than 30% of household income (Groves et al. 2017). In Greene County, 21% of those eighteen and older had a mental illness in the past year, and 5.5% had a serious mental illness (Missouri Behavioral Health Epidemiology Workgroup 2018). Greene County's rates for depression are higher than the national average, and so is Springfield's suicide rate (Moore 2019). So, our findings in the demographic survey are reflective of the poverty and financial precarity found in southwest Missouri, from which OTC attracts most of its student population. While we cannot show causation between the socioeconomic context of our student sample and population and the findings of our research, we do believe the correlation cannot be ignored.

Our findings are reflective of our students lived reality and raise, for us, important questions about the context of poverty and the role of affect on cognition and learning.

Findings

To make sense of our findings, we used grounded theory to seek to authentically describe the specific experiences our students described, and to ensure that our understanding of our findings derived from a methodology that privileged our students' context-based experiences over existing theory (Glaser 2016). Rather than force the data into existing theories, we identified emerged themes as they were produced organically in discussion in our focus groups. Several major themes were repeated across the focus groups. We found that students experience a variety of positive and negative emotions when engaging with research for academic and personal purposes.

Frustration

Most students reported experiencing some frustration connected to the research process. One student said that he has used Google, "but it's actually much harder, they just throw a bunch of links at you." Several students acknowledged that their level of frustration and persistence is moderated by the context; they are more willing to commit time and effort for something they perceive as "serious" or personally important; these are often *not* in the context of academic research! Interestingly, many students expressed being willing to "settle" for the information they could access relatively quickly and easily for academic purposes, but for personal purposes they "might look at hundreds of results."

Irrelevant results are also a source of frustration—one student said that she is "frustrated when the keyword is attached to something different, not what I'm looking for, just random things I have to Google throughout the day. I am trying to find one thing that meets my needs and move on with my life—it's dumb." Another student noted that sometimes a keyword will appear in the preview, but "when you read it there might be only two sentences on what you're really looking for," which is perceived as annoying and perhaps even misleading. This occurs with academic research, too—several students have experienced getting irrelevant results in a library search and expressed finding the database interface to be unfamiliar and overwhelming.

Interpreting scholarly sources is another task that tends to create frustration for students. One student noted that scholarly sources are "written so tediously, using so many long words—it's annoying to read . . . it shouldn't be that hard." Another student expressed frustration about being required to use books in a print format, saying that "they're tedious

when trying to find something specific; you have to use the index and jump around, or they don't even have an index. I don't want to read the entire book if I'm not actually interested or don't have time for it."

Several students expressed that they don't feel that they've been adequately prepared by their instructors to meet expectations. One student said, "They don't explain how to do research or how to pull things from the articles that we'll need"; another said, "They just say 'it has to be in whatever style' and leave us to figure it out—you're just picking it up and learning it by yourself"; a third said, "They give you a rubric and think that's explaining it but [it's not]." Students in our sample broadly agreed that they would benefit from more explicit instruction about what it means, exactly, to do college-level research and believe that instructors could take some frustration out of the process by explaining not just what they expect in terms of criteria (e.g., pages and number of sources) but also *how to go about* accomplishing the process. This is perhaps one area that has immediate and practical implications for librarians and instructors.

Overwhelm

Most students reported feeling overwhelmed or drained by the process of research, even when investigating topics of genuine interest to them. For example, a student who is preparing to travel abroad mentioned that her experience of researching travel and visas "was interesting and motivating but also kinda overwhelming so eventually I felt drained." Other students reported feeling so overwhelmed with information that they will stop and give up.

Another student noted that he is most likely to feel overwhelmed "when it's a totally new and unfamiliar topic, because I'm trying to learn so many new things at once," which is consistent with what we know about cognitive load theory (Sweller 1988). Most students in our sample have developed strategies to cope with overwhelm—they described taking breaks or going to take a nap and returning to their research later with renewed energy. In fact, several students shared anecdotes of initially being completely unable to find what they were looking for, but ultimately being successful when approaching the task again later. It should be noted that the students who self-selected into our study are especially motivated; we are concerned that many students in the wider population likely experience being overwhelmed with information or by the process of research to the point that they also shut down, but may lack the perseverance necessary to recuperate and persist. In our small sample, age and experience seemed to be moderating factors for overwhelm; this is a possible avenue for additional research.

While some students appreciate having freedom and flexibility to choose their own research topics, this is also a potential trigger for stress and overwhelm. One student said that he prefers when a teacher gives a

general topic but allows students to find more specific subtopics that interests them and posited that this is when "they'll learn the most"; another student echoed that he hates trying to pick his own topic because he is indecisive. He prefers being given a few research topics to choose from along with some flexibility in how to address it because "totally free form is too much choice."

For many in our sample, the key to balancing personal/work life and school work was finding topics that have relevance for their everyday life. One student said that the times when school and life were in balance was "usually [when] they overlap each other. Like something I'm interested in is taking place in my life so I don't have to really separate the two." But, he continued, if the school work was not relevant to his life, "then I kind of freak out and shut down, and don't do it." Students across the focus group echoed this statement—not only the necessity for school to be relevant to their personal lives, but the frequent "freak out and shut down" feeling. This suggests that the practical and affective labor of many assignments has to do double-duty—solve a problem in their personal life *and* meet an academic goal—in order for some students to find the time and space to invest and become interested in an assignment. In fact, several students described failing assignments or even courses as a result of this "shutting down" behavior.

Anxiety

One student shared that "any online research stresses me out—I get really overwhelmed scrolling through pages." Although opening multiple browser tabs was a frequently used strategy for finding and evaluating sources, several students expressed that just looking at multiple tabs makes them feel anxious. As noted by prior researchers, searching for health information frequently produces anxiety; one student said that she tries "not to Google medical stuff because it always freaks me out—it all leads back to death!" Evaluating sources in order to meet instructor expectations also produces anxiety—one student said she finds it "stressful to wonder 'will this count as an academic source or not?'"

Several students expressed anxiety as a result of working on school projects that had little relevance to their everyday lives but had high stakes within the classroom—public speaking or long research papers were given as examples. Students described high levels of anxiety that "overwhelmed [their] medication," caused them to want to "double their dose of [anxiety medication]," or "dread it, and causing more anxiety" because just the anticipation of the workload produced overwhelming emotion. This suggests that the state of anxiety produced by research, writing, and public speaking compounds existing trait anxiety or anxiety disorders among some students.

Guilt/Shame

Feelings of guilt came up in a few contexts. First, students internalize some judgements about sources they consider to be "good" or "bad" and experience guilt when consulting "bad" sources, even when those sources are perfectly useful for the intended purposes. Specifically, Wikipedia is particularly polarizing; many students have heard from numerous teachers in college and K-12 that Wikipedia is unreliable, easily changed, and not a credible source for any purpose. Some students take this at face value; an international student says that she never looks at Wikipedia because teachers have told her not to trust it at all. However, many students' lived experiences have demonstrated that Wikipedia often *is* reliable and useful (certainly for topics of casual curiosity), but instead of directly addressing the cognitive dissonance that arises from consulting a source that is believed to be "bad," students seem often to be using it with a sense of guilt and shame.

Students also experience guilt about how they spend their time—the opportunity cost of "I could be doing so many other things with my life right now!" Many students related to the experience of falling down an Internet "rabbit hole" and spending significant amounts of time—sometimes hours—on information-seeking that they ultimately considered frivolous. One student said he felt "like I was being unproductive, a little guilty because I could definitely be doing something else, like cleaning my room or tending my garden. I'm staying up until 2 a.m., and I'm inevitably going to forget some of that stuff, so I feel guilty." Several students characterized this kind of behavior as "lazy"; although they are actively pursuing information that interests them, they perceive the time to be wasted.

Finally, several students shared experiences of researching actors, musicians, and other public figures who have piqued their interest. As one student put it, "So many people have so much life on the internet—their entire life story—it can feel like you know them intimately, but they don't even know you exist. . . . I feel like a stalker a little."

Passion/Excitement

Not all students found research to produce only negative affect; in fact most students could recall a specific research project that they engaged with passionately and expressed that generally "it's cool to learn new stuff." One said, "I homeschooled and thought I was a proponent of tax credits, but then I wrote a paper and changed my own mind. I had like 45 sources—I kinda like that experience!" Another student shared that the experience of digging deeper into the nuclear ending of World War II has influenced her to consider majoring in history. As she put it, "My high school textbook had two sentences about Japan," but in college she's been able to examine a variety of American, Japanese, and German primary

sources and finds "all the nuances that never would have crossed anyone's mind" to be fascinating. Another student shared that he has changed his career aspirations as a result of a research project; he previously wanted to be a cop and even went to the highway patrol academy, but in a psychology class he was randomly assigned PTSD as a research topic "and loved it. Now I want to be a psychologist for the Army specializing in PTSD—the mind is such a conundrum!"

Connection/Solidarity

Several students shared a sense of connection to other people as a result of their online research. For example, one student who has grappled with his sexual identity expressed that "hundreds or thousands of people may be going through the same thing I am . . . there's some relief in knowing there are others having the same experience . . . it helped to connect to a community of similar folks." Other students also had anecdotes of finding connection in online communities and feeling the comfort of knowing that others had shared their experiences, whether those were medical issues, divorce, or other dilemmas.

Awe/Amazement

Some nontraditional students who remember "life before Google" reflected on Internet research in contrast to their earlier experiences of seeking information. One student said, "I was probably in my 30s [when Internet research became widely accessible], and looking things up was just amazing—you had the whole world out there!" Another said that she loves Google and thinks "it's the greatest thing ever"; she remembers that prior to GPS navigation, "if you were lost you were lost," or "if you needed to figure out how to make a substitution in a recipe, you'd have to call someone you know." These very practical advantages of the modern information ecosystem were appreciated as unambiguously positive developments.

Anger/Sadness

Several students acknowledged that news and current political discourse can make them feel angry and sad, and that they believe many news sources to be biased. One student said "it's impossible to find sources that are completely unbiased—they cherry pick their facts and leave out details that might undermine their point." Some students exercise an avoidance strategy; one student said he "tries to avoid [the news] because they make me feel negative . . . it can be a downer." Another student who says that he finds politics intrinsically interesting and who does choose to follow the news expressed feeling sad to learn about injustices in the world and frustrated because "something should be done about it." A female student noted that hearing about mass shootings is really sad and says that she

"keeps thinking that if that happens at OTC, that could be me [who is killed or injured]." These findings are consistent with previous research about student news-consumption habits—a recent Project Information Literacy study reported that most students are, at times, frustrated and overwhelmed by the volume of news that they encounter, and therefore engage with news selectively, or sometimes not at all (Head et al. 2018).

Pragmatism

Students almost universally acknowledged that other demands on their time often require them to make compromises when it comes to schoolwork. Even when a project is interesting, life might interfere and a student "can't entirely do it justice." One student said, "I have other things to do besides school—family and jobs and clubs and miscellaneous things . . . it's very challenging"; another said that she is "testing the bounds of how little you can do and still get an [acceptable grade]." Two students had experienced deaths in their families and reported that this had caused them to miss assignments. Most students gave examples of sacrificing sleep or time with friends in order to complete assignments; this seemed to be accepted as nearly inevitable. One student said, "I have a lot more college ahead of me, so I better not start sliding now—I've got to have the mindset for it. If it's really important to you, you'll do it, so you decide which assignments matter and prepare yourself psychologically." Others seemed resigned to the idea that because they are in college, things *should* be hard, even if they are artificially so. For example, "teachers have the mindset that they had to work hard to get their degrees so we should too. I don't think it's fair that I had to work my butt off to get through high school but my daughter has a Chromebook . . . there's nothing wrong with it [being hard]."

Empowerment

Some students expressed that the modern relative ease of access to information makes them feel empowered or in control. As one student put it, "It's up to me to decide how much I want to learn, how deep I want to go—it can create some anxiety, but it also makes me feel good that I'm able to find things I want to find."

Discussion

It is clear that our students have complex lives with competing responsibilities and demands on their time and that research, especially research for academic purposes, tends to produce an array of positive and negative emotions that can, at times, interfere with cognitive functioning. In describing overwhelm, anxiety, and empowerment, participants illustrated both the negative impacts affect can have on cognitive load ("shutting down;" and adding to existing anxiety), and the positive impacts negative affect can produce (feeling in control and feeling good about overcom-

ing anxiety), which is consistent with the general findings in the literature (Mueller 2011, 9). Even negative affect can enhance performance, but it can easily slip into overload. And overcoming cognitive overload, as described above, knowing when to leave a project and come back to it (assuming one has the time to) is a learned behavior. Students we work with often interpret cognitive overload as evidence of their inability to complete a task, rather than recognizing their feelings of overwhelm as normal and not a cause for shame.

And while positive affect and excitement for doing research are encouraging, the guilt, shame, and frustration students experience is very troubling. Some students make the trade-off of doing the minimal amount when school research is unsatisfying or not useful, but others seem to have internalized guilt and shame about whether they are doing research the "right" way—to the extent that they feel guilty when doing research for pleasure, or they refuse to use easily accessible web sources at all. There is much more to drill down on—the feelings of connection or disconnection with all web or media sources, for example—but for our purposes, the affective barriers that our participants described are deeply valuable for understanding what information literacy looks like for our students.

While clear themes emerged from our research, we did not discuss the impact of socioeconomic context on learning directly with our participants during the focus groups. We did this intentionally, both to prevent shame and embarrassment in the focus-group setting and because we wanted students to feel comfortable speaking freely about their emotions and experiences. We did not center our focus-group discussions on socioeconomic status because we did not want to force participants to talk about some of the more frightening, long-term, and traumatic contexts of poverty, debt, overwork, family obligations, tragedy, hunger, and homelessness. This is an area for future research, perhaps done with interviews and/or survey methods to sensitively and compassionately explore these topics. While we cannot show causation or strong correlation between the data we gathered in our demographic survey and themes from the focus groups, we do know that our sample population, as well as the population of our campus and broader community, do in fact grapple with financial precarity and poverty. In order to successfully engage these students and help them to hone their research, information-literacy, and critical-thinking skills, it is imperative to explicitly acknowledge the cognitive load produced by college-level research and address the affective components of this intellectual labor.

Our participants already deal with heavy work schedules, full-time course schedules often required for financial aid, caregiving responsibilities, and the bureaucracies of everyday life for those living near or below the poverty level. So it is not surprising that when they are trying to meet unreasonable expectations, from themselves and their instructors, they

"shut down." In a sense, these competing demands themselves create additional thresholds or barriers that students must grapple with before they can truly turn their attention to interrogating authority or evaluating the potential usefulness of sources. These barriers include everything from Maslow's hierarchy of needs to the threshold of questioning the authority of sources like Wikipedia when they have been told it is "bad" for most or all of their academic lives.

And while many of these barriers to student learning are not things we can control, we believe our professional guidelines should acknowledge some of these affective aspects. The current ACRL *Framework* is aspirational and idealized, and in our view, does not describe students whose information-literate abilities are still developing. While the *Framework* can be a useful and inspirational starting point for information-literacy instruction, we believe it to be inadequate, or at least incomplete, in describing the knowledge practices and dispositions that are likely to cause stumbles for community-college students and others who face the myriad challenges of poverty, academic underpreparedness, and so on.

Perhaps the most troublesome and transformative challenge of all is believing that one belongs in college and has the self-efficacy to succeed. The *Framework* invites expansion in response to local needs (Hinchliffe and Saunders 2015). There are also gaps in the *Framework* when considering first-year students generally, as evidenced by recently conducted librarian focus groups (Hinchliffe, Rand, and Collier 2018). As such, we propose a few additional affective dispositions and knowledge practices to the ACRL *Framework*, which we believe to be necessary precursors to the existing knowledge practices and dispositions.

Our research suggests that learners who are developing their information-literate abilities should do the following:

Authority is Constructed and Contextual

- Realize that questioning traditional notions of authority, including their instructors or librarians, may be anxiety producing
- Do not feel guilty about using sources for their relative value, including sources that meet their information needs, even if not their instructor's expectations

Information Creation as a Process

- Resist the assumption that they are already supposed to know how to do research, how to read a scholarly article, or how to synthesize large amounts of information

Information Has Value

- Value themselves by seeking appropriate help when needed without fear, guilt, or shame

Research as Inquiry

- Seek topics or questions that make connections to their work or life, and when that is possible, consider their research an open-ended engagement with information; otherwise, do the best they can given the existing constraints

Scholarship as Conversation

- Recognize the value of the knowledge they have already gained by evaluating information—something we all do every day

Searching as Strategic Exploration

- Know that research will sometimes cause cognitive overload or dissonance and understand that they are not the only one who is frustrated or overwhelmed by research

Implications for Teaching and Learning

These practices and dispositions have immediate implications for teaching and instructional design. To address these implications, we will now examine some considerations for designing effective assignments that acknowledge the affective components of college-level research. To be maximally effective, assignments should tap into students' actual interests and affinities; they cannot be expected to put forth their best effort when they perceive the stakes to be arbitrary and artificial. As one of our students poignantly put it, "All the info you learned just goes in the trash when you turn in the assignment." It seems that our students intuitively agree with David Wiley (2013) that such "disposable assignments," viewed only by the student creator and a faculty member for the purposes of grading, "suck value out of the world." Instead, assignments should have authentic purposes. For example, we have experienced success with "problem-solution" essays: students research a problem in their life or community and identify a practical solution. This assignment lends itself perfectly to building critically engaged instruction, examining the relative value of web sources, personal interviews, and academic articles, and then breaking down the different ways these sources need to be read and cited.

Some instructors misrepresent scholarly sources as "the gold standard," and insist that students rely on them even when it does not make sense, which only exacerbates anxiety and frustration. For example, one student recounted trying to find facts about dogs for an informative speech, but due to her instructor's expectations (and the nature of scholarly sources), she struggled greatly (and we would say unnecessarily) to find sources that fit her needs. We are working to help our instructors challenge their own assumptions about various types of sources and to emphasize that, rather than existing on a spectrum of intrinsically good versus bad, all sources are useful (or not) *for a particular purpose.*

We also believe in the importance of teaching about information privilege and a critical understanding of web search engines. Although many of our community-college students do go on to pursue additional higher education, most eventually end up in the workforce outside academia, and therefore will not have ready access to scholarly databases. It strikes us as a foolish and misguided disservice to lead students to believe that sources they will rarely again encounter are the "best"; instead, we should be teaching a more inclusive information literacy that more accurately reflects the modern information landscape that we and our students inhabit. And while we sometimes do share our students' awe at the wonder of keeping a powerful search engine in our pocket at all times, we likewise share Safiya Noble's (2018) concern that it is important to recognize and teach that Google is ultimately not a public good but an advertising firm.

We also advocate process-based assignments. Realizing that first- and second-year undergraduates are novices to college-level research, and acknowledging the enormous cognitive load created by finding, reading, interpreting, and synthesizing sources, we urge instructors to break projects into smaller chunks and provide opportunities for students to practice their new skills. As Mary Snyder Broussard rightly puts it,

> Writing-from-sources is an extremely difficult task in and of itself (intrinsic load), even for expert writers. Poor assignment design or lack of adequate instructional support leads to high levels of extrinsic cognitive load. The combination of the two can be fatal to all but the most motivated and independent learners. (2017, 28)

Learning to decipher and cite scholarly sources usually requires explicit instruction and practice; instructors should reconsider requiring such sources if they are not willing to devote class time to scaffolding in the necessary support for this skill.

Finally, we urge our instructors to practice compassion for students. We all must teach the students we actually have, not the students we might wish to have (Goldrick-Rab and Stommel 2018), and this will often mean centering students' experiences, struggles, and voices, and collaborating with them to create truly meaningful teaching and learning opportunities.

Future Directions

We have just scratched the surface of this discussion of the role of affect in students' daily lives and its implications for teaching, learning, and information literacy. We hope to see further research that incorporates student responses to the challenges proposed by the *Framework*, as well as an increase in attention to the needs of community-college students in particular. We would like to see a survey of a larger sample size of both our student population and community-college populations elsewhere, looking at the intersection of socioeconomics, affect, and the development of

critical information-literacy skills. Further, as growing evidence shows the financial and emotional burdens on college students across the country, we hope that work on information literacy, writing and teaching, and the *Framework* will pay close attention not just to where we want our students to go but to understanding how to reach them where they are.

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Note

1. Our title is a quote from Tara Westover's 2018 memoir, *Educated.*

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