

Community College Students' Perceptions of Their Information Literacy Needs

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Semistructured interviews were conducted with community college students in Florida and New York, two diverse states with robust community college systems, to explore their self-perceptions of their information literacy (IL) needs. Findings indicate that students value IL in their personal lives, their academic work, and their careers, though it means somewhat different things to them in each of those areas. They think of IL in terms of skills rather than threshold concepts, and they feel that the most important skill is finding information, followed by evaluating information.

Introduction

Community college students represent a significant portion of undergraduate students in the United States; according to the National Center for Education Statistics, approximately 5.6 million students were enrolled in public, two-year institutions in fall 2018, accounting for about one-third of all undergraduates enrolled in the United States.¹ Yet community college students have been studied far less than their four-year college and university counterparts, especially when it comes to information literacy (IL). This study sought to explore community college students' perceptions of their IL experiences and needs. Semistructured interviews were conducted with community college students in Florida and New York, two diverse states with robust community college systems. By gaining a greater understanding of community college students' perceptions of their IL needs, librarians—as well as instructors and administrators—will be in a better position to support students' IL needs both in school and beyond. The reasons many students elect to begin their postsecondary schooling at a community college are primarily twofold: access and economics.² Community colleges typically provide open access enrollment and offer flexible course schedules.³ Also, the tuition costs of attending a public community college are about one-third the cost of a public four-year institution.⁴ Community colleges have a long tradition of providing educational opportunities to historically underserved groups,⁵ but many students, regardless of race or ethnicity, are drawn to community colleges because of their life situations. Community college students are typically older than

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their counterparts at four-year institutions, and many are working full-time and have family responsibilities.⁶ Students who enroll in community college have a variety of postgraduation goals. Some may be completing courses to earn a high school equivalency certificate. Others are current high school students who are dual-enrolled in a community college to get a head start on college-level coursework. Others are interested in vocational training and plan to enter the workforce after graduation. The majority of these students express a desire to transfer to a four-year college.

Unfortunately, many students who enroll in community college courses, regardless of their educational goals, never earn a degree or a credential.⁷ Of students who began their community college studies in fall 2018, only 62 percent were still enrolled a year later; and, of those who began part-time, only half were still enrolled.⁸ Even among those who do graduate, those whose goal was to transfer to a four-year college often do not achieve that goal. In 2013, for example, 80 percent of community college students reported plans to transfer to a four-year college, but six years later only 31 percent had done so.⁹

Literature Review

There is a wealth of research on IL among students in four-year colleges. Some of this research simply asks students to rate the IL instruction they have received. For example, Pinto et al. analyzed Spanish students' perceptions of IL instruction delivered through mobile technologies.¹⁰ Other research examines students' IL instruction experiences more deeply. Yvelson-Shorsher and Bronstein interviewed students at an Israeli university and found that students felt that they lacked IL skills and did not view the university library as a source of help to develop that skill set.¹¹ Evaluating the efficacy of an IL certificate for business students at a university in South Africa, Omar and Davids found that students reported that IL instruction improved their information evaluation skills and academic work.¹² Pinto et al. analyzed Spanish university students' beliefs in the importance of IL skills and found mixed results; of particular concern were that specific skills favored by instructional librarians, such as using a library catalog, using databases, and knowing information search strategies, were rated relatively low by these students.¹³ Gross and Latham found that university students did not see the value of IL and hence IL instruction, nor did they view IL as a distinct skill set.¹⁴ Kim and Shumaker found that students who take a course that includes a significant IL assignment rate their IL instruction and their own IL skills higher than those students without an IL assignment.¹⁵ Glowacka et al. found that university students rated the importance of IL skills higher than their own self-efficacy and skill levels.¹⁶ Keba and Fairall, however, found that university students rated their IL skills highly, a finding that is more consistent with previous research.¹⁷ Julien and Boon, in a study that tested student learning outcomes following IL instruction in universities and a community college, found that some IL instruction experiences increase students' knowledge, their confidence and sense of personal mastery, and the efficacy of their information search skills.¹⁸

There is considerably less research focused on students' IL experiences in the community college context. One multimethod study discovered that community college students overestimate their IL skills, even though the vast majority of them lack proficiency in IL as measured by a standardized IL test.¹⁹ Interviews with community college students revealed that, in seeking information, they tend to focus on product rather than process, they prefer Google and other people as sources of information, and they often assess information qual-

ity in terms of what is good enough.²⁰ A focus group study found that, as far as instructional preferences, community college students highly value personal relevance, demonstrations, hands-on learning, and opportunities for interaction with the instructor and other students.²¹ Further exploration is needed to determine what community college students perceive to be their IL needs, what skills and knowledge they value, and where they see their deficiencies.

These instructional and perceptual issues must be considered against the backdrop of changes in IL instruction in higher education in general. In 2016, the Association of College and Research Libraries adopted the *Framework for Information Literacy for Higher Education*, signaling a major change from a focus on skills to a focus on six threshold concepts ("frames"), each with associated knowledge practices and dispositions.²² This more conceptual approach to IL has been embraced by many in higher education but has been met with mixed reviews among community college librarians. Some see the *Framework* as appropriate for community college students,²³ and there are reports in the literature of successful implementation at the community college level.²⁴ Yet others have expressed doubts about the suitability of the *Framework* for community college students,²⁵ and some have criticized the *Framework* for not making connections between IL and social justice issues.²⁶ Regardless of community college librarians' opinions about the *Framework*, a recent national survey found that a majority of them have had difficulties incorporating the *Framework* into their IL instruction.²⁷ It is thus unclear the extent to which the *Framework* may be informing community college students' experiences with IL instruction.

Methodology

This study sought to fill a gap in the research literature by exploring community college students' self-perceptions of their IL needs. It was guided by the following research questions:

RQ1. What are the self-perceptions of students concerning their IL needs?

RQ2. Do students' self-perceptions of their IL needs vary based on their educational and career goals?

RQ3. Do students' self-perceptions of their IL needs vary based on the type of instruction they received (skills-based vs. threshold concepts)?

To address the research questions, students from five community colleges in Florida and New York were recruited for semistructured interviews. These states were selected because both states have large community college systems with diverse student populations in terms of age, race, ethnicity, socioeconomic status, and urban vs. rural residents.²⁸ Human Subjects approval was obtained from the principal investigator's institution. Interview questions were developed by reviewing relevant literature and consulting with the project's advisory board (made up of community college librarians). The questions were then pretested. Students were recruited via flyers posted in the libraries and elsewhere around campus and classroom announcements in general education courses. Students were compensated with a \$30 gift card for participating in a 45-minute interview. The interviews were conducted online, recorded, and transcribed. In the interviews, participants were asked about their educational goals; their experiences with IL (searching for, evaluating, and using information); their experiences with IL instruction both in college and previously; and their perceptions of their IL needs. (The interview questions are provided in the appendix.) A codebook was established based on potential responses to the interview questions. Two members of the research team coded the interview transcripts using thematic coding and employing NVivo Qualitative Data Analysis

Software.²⁹ Codes were added to the codebook as additional themes emerged from a review of the data. Initially, a small subset of interview transcripts was coded independently by the two researchers, who achieved a Kappa of 0.70. The remaining transcripts were then divided among them, with each completing coding on their own. Once coding was completed, the other members of the research team analyzed the coded transcripts to address the research questions.

Participants

Thirty-four students from five community colleges in the two states participated in interviews. Of these, 22 (65%) were from New York and 12 (35%) were from Florida. Females made up 68 percent ($n = 23$) of the participants and males 32 percent ($n = 11$). Fifty-three percent ($n = 18$) stated that they enrolled in community college right after they graduated from high school. Seventy-one percent ($n = 24$) reported that they were either in the middle or toward the end of their program of study. Among the participants, a variety of majors was represented. The most frequently represented majors (each with 9%) were computer science, nursing, and occupational therapy assistant. Other majors mentioned include accounting, biology, chemistry, education, humanities, journalism, mathematics, music, machinery, and mortuary science. When asked about their career goals, 79 percent ($n = 27$) of the participants stated they plan to pursue a bachelor's degree after graduating from community college, either immediately or sometime in the future. Most ($n = 19$, 56%) said they were motivated to attend community college to get a better job and make more money.

Findings

The findings are grouped according to the following major themes: experiences with finding, evaluating, and using information; perceptions of IL skills needed; preferred ways to learn IL; suggestions for improving IL instruction; and perceived value of IL at school, home, and work. It was not the purpose of this study to compare students between the two states; therefore, findings within each of these themes are presented as an aggregate. In the sections that follow, pseudonyms have been used in place of participants' real names.

Finding Information

Participants were asked about their experiences in finding information as well as the challenges they have encountered. Several mentioned the importance of choosing a topic that fits the assignment (meaning what the instructor wants) and the role of preliminary searching to identify a viable topic. Theo stated, "[O]nce I plot out where I want to go or what I want to talk about, I can find it a lot easier because I know exactly what I want to look up and I'll have relevant information right away." Developing effective keywords was frequently identified as another important component of the search process. Kate, for example, recognized that each discipline—indeed, each topic—has a unique vocabulary, and this is especially true with historical topics:

[I]t's kind of like a game, just kind of bouncing back and forth. But after a little while, you get used to the terminology they used back then, and then once you know the terminology, therefore—you know, knowing some history and everything, you learn the terminology, and then it becomes a little easier to kind of find the little pieces that are hidden away.

Knowing what resources are available was also identified by several participants, and databases were mentioned specifically as being potentially valuable resources. More typically, though, students reported that they begin with Google because it is easier to use. For instance, Kate complained about the complexity of search commands in databases and added, “for me, it’s easier instead of memorizing [those search commands] to just do the initial Google search of ‘Google hacks’ and then just copy/paste it onto whatever I’m looking for, especially with how fast Google is.” Manolo explicitly connected search skills with computer proficiency: “If you’re trying to look for information directly, like different search terms or whatever, you definitely have to be good with a computer.” And Cindy described the initial stages of a recent research project: “I went straight into Google and put my topic in there, which I don’t remember what it was, but I just put my vague topic in there and then I would just read a bunch of articles. I tried to stay more along articles that seemed legitimate and had reviews and stuff.”

Students also discussed challenges they faced, including having trouble developing search terms, feeling overwhelmed by the information available, and being baffled by databases. While participants recognize the importance of keywords, some of them reported having trouble developing effective keywords for searches. Cathy said, “I can’t think of enough ways to phrase what I’m trying to find or I’m just not finding anything close to it.” Angelina noted that English was not her native language, which makes it difficult for her to find information. Sometimes, students said, they perform a search and find very little information; at other times, they find a lot, but much of it is irrelevant. Sandra explained, “[T]here’s a lot of different sources. You really don’t know which source to click. I mean you click one source and you could barely find anything in it. Or you can get stuff and it’s not what you want. It can be very frustrating.” Bradley talked about the difficulty of finding information that is not written at an expert level: “[I]f you need one particular piece of information, you have to sift through a bunch of stuff you don’t understand yet in order to get at it, and it’s hard to get to.”

Databases are seen as difficult to use, and so the default source is Google. As Maria said, “I usually just use Google Scholar because I feel like when they’ve shown us the databases through the library, I don’t—I don’t want to say they’re too hard to use but I feel like it’s just like way too many steps, it’s way too involved. It’s more of a hassle.” Yet participants also recognize that sources located through a Google search can be problematic. Vera stated, “I was afraid that it would be a little bit insecure to use Google because sometimes it may be a nice website but it may be something that I thought it’s a legitimate website but it’s actually not.” Other challenges mentioned were finding enough information, relevant information, and information that is not biased.

Evaluating Information

Students described strategies for evaluating information and discussed key challenges as well. Credibility and authority are two issues that students consider. James said, “Well, when I evaluate a source, I try to go into detail to make sure it does come from a credible source. I don’t always trust a site. Even if I kind of trust it, I want to see the primary source. That’s the way I would probably know it is true....” Cathy explained, “I also do research on those people [authors] and see if they have been known to publicly claim something that would make their information biased.... I go to reputable sources that I know will have the right answers....” She also mentioned a concern that came up in a number of the interviews—bias and the desire to avoid it. When asked how they identified bias, participants offered various

somewhat vague strategies. For example, Bradley stated, “Looking at the name [of the source] can tell you a great number of things about the source. A lot of times fake sources or biased sources give themselves away immediately, just with their name.” And Jessica offered this: “Oh, how do I identify bias? I don’t know how to explain it, but I just know it when I read it. Like, if the author is, like, strongly supporting this idea, and, like, stuff like that.”

Participants reported challenges as well in evaluating sources. Melanie said, “[I]t can be kind of confusing when you’re first starting, knowing what’s a credible source and what’s not.” Some students reported being confused by multiple viewpoints. Cindy stated, “Yeah, I’ve had times where I had just found information that’s like one thing says another and they’re all different. I kind of just go with probably what I think sounds most correct.” Angelina indicated that difficulties with comprehension sometimes impede her ability to evaluate information: “I think I really need help with evaluating data to explain and paraphrase and understand the real meaning of that information that you are finding.”

Information Use

In terms of using information, students described several strategies as well as challenges. Various participants spoke of the importance of using statistics, consulting multiple sources, and incorporating different opinions in their papers. On the issue of quoting vs. summarizing, Theo said, “So, depending on what it is, if it’s like a really long list of stuff, I’ll just summarize it and then cite it. But if it’s just like a short, little sentence that I think is worded really well and really helps out my point, I’ll quote it directly and elaborate on it.”

Several participants used citation management apps. Generally, students found these apps to be quite useful. Grace said that she was delighted to learn about the availability of a citation management app: “I told [the librarian] I was having trouble putting my paper together APA style and she told me that there’s these programs that they had where you can—if you’re done with your essay you can put it in there; you just make an account, you put everything there, and then it will get all over your paper APA or MLA formatted.” Cathy, however, urged caution in using these apps: “I remember a very brutal three months where all we did was cite documents.... I do sometimes still use EasyBib, which is just an easy way to put in a website and get a citation, but sometimes even EasyBib gets it wrong. So, most of the time, I’ll write them myself.” Most participants noted that they used these various strategies to ensure that they met instructors’ expectations.

Participants also discussed challenges they faced in using information. One issue is balancing their ideas with information they have found in other sources. As Melanie explained, “If I’m trying to write a paper, I might find too much, and then it’ll be too much of quotes and things that aren’t from me in the paper, if that makes sense.” Another frequently mentioned challenge was the actual writing of the paper, presenting the argument, and incorporating the research. Karla stated, “The hardest part was the actual research paper. I’m horrible at English. So that was the hardest part. Not the research part of it, but it’s the jotting down the ideas and thoughts and everything, effectively communicating it to my professor to make sure they understand what I’m trying to say.”

In addition to concerns about writing, students also discussed their fears about not properly citing their sources. Karla, when asked about challenges encountered, responded, “Citations, how are you going to implement this source into your paper? It’s not easy, I would say. It’s very challenging.”

Skills Needed

Participants were asked about the skills they believe they need to be information literate and the skills they feel they need to improve. Several of them mentioned the ability to evaluate sources as an important skill to have. Angelina described the role of evaluation when looking at websites: “for example if you’re using online resources it’s really important to see from which site or which website you’re using that data. Is it like a valid site? Is it like a site that someone just made it up?” Several students echoed this sentiment, stating that one should avoid getting information from sites found through Google, Wikipedia, and social media. This is why some students rely on databases, even though they often find them difficult to use. As Becky said, “Well, I think that’s why people use the library databases. Because when you use Google, — you have to be a lot more skeptical. Then you have to do a lot more background information to find out that it’s reputable. But the information on the databases you already know are reputable.”

In other words, the database creators have already done the hard work of evaluation. The type of source is clearly an important element in the evaluation process for many students. Jennifer noted, “So [students] can learn how to look at information and see that maybe this isn’t correct, because it’s not from a newspaper, it’s not from an article. It’s some Jane Doe website.” Clearly, much of students’ sense of what is appropriate and what is not comes from their instructors. For example, Maria stated, “I feel like there’s a lot of kids who they use .coms and blogs and stuff like that. I think, ‘Oh my gosh, my English teacher would kill me if he saw that.’ Not really but he would be mad.”

While evaluation was the most frequently mentioned skill, other skills were identified as well, including writing skills and the ability to use information effectively, two closely inter-related things. Kate reported having difficulty being concise:

Probably how to condense everything. Like I said, I have probably upwards of 15 sources by now. And so, I can either go through and use each source one or two times with this massive essay and/or, like I said earlier, I would be able to weave kind of through it. And being able to cut down on sources was definitely not something that was taught, because it was always taught “The more sources, the better.” And then, now that I have all these sources I’m like “How am I going to make this all [fit]?”

Dennis described experiencing the opposite problem: “When there’s not a lot of information to work with, it’s tough to write more. A lot of times, I feel like I’m repeating myself when I write or I feel like I’m not getting enough information out based off of what I have, so just knowing how to navigate grammatically.”

Not surprisingly, in today’s information environment where so many things are available online, students also see technology skills as an important aspect of being information literate. Unfortunately, not every community college student has this skill set. Edward reported, “I’d just say basic understanding of whatever device they’re using because you have — you would have something — I have an older classmate in my English class and we sometimes have to help him navigate the computer in the first place.” Elizabeth talked about the value of learning computer skills in a course she took early in their program of study: “It was actually a pretty easy course, but it was really informative because most of that stuff, I had no idea. Before I started college, I really didn’t know how to use computers very well, so all of that

just helped.” For several students, computer skills are synonymous with information literacy; Karla attributed her success to “[p]robably the fact that I know how to I guess get on Google. ‘Cause Google’ll help you a lot. So that I know how to get on Google, look up what I want, and jot down exactly the books or whatever I need to go searching for....”

Students were also asked about what aspects of information they would like to improve on. They mentioned the ability to find information as being a skill they needed to improve because they see it as being important in their personal lives, their schoolwork, and their careers. Melanie felt that improved information searching skills would be useful in “applying that to day-to-day stuff, like politics and stuff like that, seeing different articles about that, and news, and all that kinda stuff.”

In the school context, students focused on getting better at finding information. As Maria said, “Okay, so I guess basically just finding another option and learning how to use another source besides Google Scholar when that one gets worn out.” Several mentioned a desire to improve their ability to search databases. Selecting relevant information was also a skill that some students identified; here is Ellen’s response: “I guess like finding information that is most helpful to you and deciding which information to use and which information maybe wouldn’t be as beneficial to whatever you’re trying to accomplish, like to your specific area of research for whatever project or paper it is that you’re doing at the moment.”

Kate connected selection of information with critical thinking: “Even just critically looking at everything, because if a news article comes out that says, ‘Oh, XYZ did this,’ but then another news article comes out and says, ‘No, they didn’t; it’s actually changed within the last ten minutes,’ it’s always best to be able to sift through that stuff.” And for some, pulling everything together is a challenge; here’s Dennis’s response: “A big part of the project is the time it takes to do the project. So, when I’m struggling to even just write or collect my thoughts, maybe some methods of fixing that would be beneficial.” Students also saw areas for improvement in information literacy related to their careers. Vera, who is planning to become a journalist, focused on evaluation and critical thinking: “But then if I provide any information that I’m not sure about and I don’t like, you know, make sure if that’s true like hundreds or thousands of people is [sic] going to get wrong information from me.” And Cathy noted that improved skills in finding information would help with the job search.

Experiences with IL Instruction

Participants were asked how they know what they know about IL. While several stated they had received instruction in elementary or secondary school, most said their IL instruction occurred in college. Various venues for instruction were identified, including one-shot workshops, librarian visits to classes, one-on-one consultations with librarians, and in a couple of cases a standalone course on IL. When asked who provided the IL instruction they had received, students mentioned college instructors most often, followed closely by college librarians. Others who were mentioned included K–12 teachers, friends, classmates, and family. Dabir implied that he was largely self-taught: “I’m a natural-born researcher. There were many people who helped me along the way, but I like to put credit on myself.”

Participants expressed definite preferences on how they like to learn IL. Seeing a demonstration and having an opportunity to practice were both important. As Sandra put it, “Yeah, I’m going to have to do it over and over again kind of thing for it to kind of stick.... And then, also, when we did that class with the reference librarian and they were showing us how to do

things, they had us on the computers with them." Jennifer talked about the value of getting consistent hands-on practice throughout schooling:

So, I definitely think that hands-on is really important. But I mean, I guess reinforcing it when you're in the younger grades is just gonna make you more successful than when you're in college and all you're doing is research projects. So, I guess showing kids that this is how it has to be done and then building on it as they get older.

Some noted the importance of personal instruction and being able to ask questions. Grace, for example, said, "I had the one-on-one and I think that was better because it—like any questions I had, they helped me out." Students also mentioned appreciating passionate instructors, whether professors or librarians. Several discussed the value of peer tutors, with at least one, Angelina, expressing a preference for peer tutors: "I find tutors more helpful, more friendly and more like they're open to us than professors or librarians, people like that."

Generally speaking, students expressed appreciation for the help they have received from librarians, instructors, and tutors. But they also offered some recommendations for improvement. Grace wanted more specific instruction in how to find sources:

They do mention that a lot of things, articles, it's like all online. So, they don't really tell you where, they just say, "Oh, in the library," but they don't say exactly where.... I think a better way would be like to have maybe certain days that they can be like—show you how to—like the steps to take to find the right sources and maybe narrow down.

A similar recommendation from Theo mentioned wanting more training in databases specifically:

So, for our school, every database is different. So, they just—for the class that we had on it, they just picked one database and just showed us like the really bare-bones, pretty much, idea of how to use it.... [T]hey didn't really show us variety of databases or different examples. It really just focused on one and how to use just that one.

Ellen felt that students need to be made aware of the library and the resources it offers: "I guess maybe certain professors don't push that as much because I didn't know the resources that were available there. So, I guess maybe the library could be a little bit more advertised, if you will." Edward made the prescient comment: "Honestly, the one thing that I wish would have happened is I would have known this stuff earlier."

Value of IL

Students were asked to discuss the value of IL in their personal lives, for their schoolwork, and in their careers. IL in their personal lives involved finding various kinds of information—healthcare, cooking, parenting, hairstyles, politics, entertainment, and hobbies. The sources

frequently mentioned included Google, Facebook, Twitter, and YouTube. Evaluation is less of an issue for some students. Beth said, “I mean sometimes, I guess, I take like credibility into account, but it’s usually just more of like a generic just quick little search for like my own personal information. Like if I was just—I would pay more attention to credibility like if it was like a—like more of a serious like topic that I was looking for.” But others, like Marla, reported that they do evaluate sources, at least in some cases:

If I was looking up something for my own personal knowledge, let’s say I was doing something about the new virus or something, and I wanted to know if it was a credible source, rather than just someone putting in fake news, that would also be good in helping me decipher between a good source and something that isn’t reliable or might have false information in it.

Participants are even more tuned in to the value of IL for their academic success. Theo noted its importance for success at a four-year school: “Then, going to a—transferring to a different school, it’ll be really helpful just because I’m going to be asked to do a lot of those same things that would go with my career because of my degree. So, I’m going to have to do a lot of different research papers and presentations with the information that I’ve gathered up.” Maria stated, “I definitely think that was a huge part in my success in college because I can—research paper sounds hard. But once you get the foundational skills or just being able to look up what you need to do and just put it into sources, citation page, bam, it’s done. So, I feel like that was just vital to my success in college.”

Elizabeth offered this comment: “You should always know what is good information, so I think that that’s really important, just knowing where the information is coming from, why they’re giving it out, all of those kinds of things.” And Edward recognized the ongoing value of IL not just in school, but beyond:

Oh, I’m sure I will never stop using it. Well, as far as the databases, obviously, when I graduate, I won’t use those anymore, but as far as going and being able to—’cause they’ve shown us more than just the library. So, I’ll be able to use the books that they have given us to be able to write just basic essays like APA, MLA, work citations and—that stuff will never go away.

Many participants recognized the value of IL in their future careers. Hasim explained what IL would mean to him: “Computer science student so, this is like, lifelong learning, I guess, this major. So, even after graduation, I would have to do research of—I will have to write papers and learn many things. So, writing papers is also a main thing—one of the main things—in programming, so this will help.” In a similar vein, Maria said, “[I]n this profession, occupational therapy, there’s—everything is always changing. Information is always building. So, I feel like the skills of just being able to research is vital for this professional [inaudible] I need to stay up on the most relevant topics and the best practice for my future clients.”

Some participants, however, felt that the nature of information seeking is likely to change once they are in a job. Bradley, for example, felt that other people would be the best sources of information:

[W]henever I start a new job or anything like that, I usually find that people are the most valuable source of information in that sense. I'm sure there's always some sort of ridiculously expensive employee handbook that covers way more than it needs to, but I really find that people who have experience and who know what they're talking about, that's really valuable in a situation like that.

Dennis worried that finding up-to-date information might be difficult in his field: "The way things are changing constantly in environmental engineering, maybe some articles just haven't been published to the websites yet that I might need to know about to stay on top of the game as far as being a progressive engineer." But, overall, participants felt that IL skills would be useful beyond the classroom. Cindy summed it up nicely: "The more knowledge you have, the more you're going to be able to use in the future for whatever career somebody is going into, or whatever they're trying to research. As long as they can get the right stuff, the right research, I think it's very important for any career."

Discussion

The students in our study see IL as an important part of their academic work, their personal lives, and their future careers. Findings indicate both some consistency but also some diversity among the students in terms of their perceptions of their IL needs and the relationship of those needs to their educational and career goals as well as to the type of instruction they have received. The three research questions posed at the beginning of the study provide a useful way of discussing the findings.

Students' Perceptions of Their IL Needs (RQ1)

Students discussed IL in terms of finding, evaluating, and using information. Overall, they have more confidence in their ability to find information for their personal lives than they do for their schoolwork.³⁰ A couple of issues appear to be relevant here. One is their lack of awareness or confusion about the myriad resources available to them. They are unsure about which resources to consult unless given specific direction. Another issue is their apprehension about using databases, which stems from not knowing what databases are available, what are the differences among them, and how to search them effectively. Contributing to this apprehension is a lack of confidence in finding sources that are relevant to the research topic and will meet the instructor's expectations. Whereas Google and various forms of social media might be fine for finding information for personal use, students recognize that more "serious" sources are needed for schoolwork.

While finding information is these students' greatest concern, they also understand the importance of evaluating information for credibility. Again, there appears to be a difference between information that is considered acceptable for personal use vs. information that is appropriate for school assignments. Interestingly, the students in our study rarely talked about the credentials of authors and how they would determine those; instead, they tended to focus on characteristics of the source itself or the content. For example, for school assignments, students are wary of "just any" website, as well as Wikipedia and Facebook. An appropriate source type is a newspaper or journal article or, in some cases, a book. Their feeling seems to be that these sources have already been vetted for credibility and authority by editors, publishers, and database creators, so no additional evaluation is needed.

The other concern is with content that reflects an opinion or bias of any sort; they gravitate toward “neutral” and factual content. While it is certainly important to be aware of bias, many of the students in our study do not seem to recognize that others’ opinions can be useful to incorporate into one’s own argument and also seem to equate what they call “bias” with expressing a point of view. And, of course, the fact that something has been published as a book or journal article does not mean that it is free from opinions and bias, but it appears that not all participants recognized that. Previous research has found that community college librarians consider evaluating information to be their students’ greatest weakness and previous investigations of community college students found less concern among students about needing to vet resources.³¹ The students in our study, however, indicated that it is an area where they feel they need to improve, but, overall, it seems a little less of a concern to them than being good at finding information.

In terms of using information, students feel that knowing how to cite sources correctly is important. But beyond that, several indicated that they needed more guidance in how to incorporate information from various sources and in various forms (quotations, summaries) into their writing. Overall, many felt they needed to improve their writing skills. Instruction in writing is something librarians have generally left to English instructors and writing center tutors, and understandably so. However, it should be noted that several students talked about the benefits of having easy access to writing tutors either inside or adjacent to the library. For them, the availability of librarians and writing tutors essentially in one place was considered a great convenience. Libraries and writing centers should also consider the extent to which cross-training among staff might be possible so that librarians can help with writing issues and tutors can help with research issues. Such an approach would be more seamless for students and thus, more student-friendly.

Students’ comments about librarians—and tutors—were generally quite positive. In working with librarians one-on-one, students found them to be approachable and helpful, surely a testament to the commitment these librarians have to student success. In terms of IL instruction, as previous studies have shown, students prefer opportunities to watch search techniques demonstrated and then practice them with hands-on exercises.³² They also like enthusiastic instructors and the opportunity to interact with the instructor and ask questions. Several indicated they wished they had received IL training much sooner in their schooling. Given that students saw areas where they would like to improve their IL skills and their positive experiences with librarians, there are opportunities for community college librarians to respond to these students’ IL needs with innovative IL instructional programs. One way to accomplish this might be to move beyond the one-shot workshop and toward other instructional models, such as embedded librarians and credit-bearing standalone courses. Of course, such approaches require staff time and financial resources, but the findings of this study suggest these investments would pay dividends in terms of student success.

Students value IL, although to them it means somewhat different things in different contexts. Many of them mentioned the importance of IL in their personal lives, their schoolwork, and their future careers. As previous research has shown, they often accept information that is considered “good enough” for their personal use, but they recognize the necessity of having more authoritative sources for their schoolwork.³³ When they think about IL in their careers, some see it as being more closely aligned with the kind of IL skills they need for schoolwork, while others emphasize the importance of people over published sources.

Relationship of IL Needs to Educational and Career Goals (RQ2)

As noted earlier, the vast majority of students who participated in this study (79%) indicated that they plan to pursue a bachelor's degree. Not surprisingly, no discernible differences were noted among the students in terms of their perceptions of their IL needs for school. This was even the case for the students who planned to enter the workforce after graduating from community college. The only real differences, as discussed above, were found in how different students perceive their IL needs in their future careers. Some are convinced that the IL skills they are developing in their schoolwork will transfer into their career work as well. But others imagine less reliance on published sources in their careers because they do not believe published work will be up to date enough to meet their professional needs. They expect instead to rely on people for information, presumably colleagues and mentors.

Relationship of IL Needs to Type of Instruction Received (RQ3)

For the most part, all of the participants in our study discussed their IL experiences and needs in terms of skills rather than concepts. None indicated that they had received IL instruction based on the ACRL *Framework*. This may mean that the librarians at the community colleges represented here—at least the librarians these students have interacted with—have not yet incorporated the frames into their IL instruction. In some cases, this may be because they find it challenging to use the *Framework* in the community college context.³⁴ Or it could be that some of the librarians are using the concepts in designing their instruction but not using the terminology from the *Framework* in talking with students.³⁵ Another possibility is that some librarians are using the terminology, but the terms are not resonating with students or staying with them beyond the instructional sessions.

Conclusion

These findings indicate there is an opportunity for librarians to use the frames more extensively and more explicitly. For example, students are already focused on finding information, so librarians could make use of the frames “Research as Inquiry” and “Searching as Strategic Exploration” and connect those to something students are already concerned about. Students are also aware of the challenges involved in putting together a successful research paper, so librarians could use students' own experiences and concerns to talk about “Information Creation as a Process.” These students recognize the importance of having authoritative sources even though they do not always know what that means or how to identify such sources. This presents an opportunity for librarians to discuss the idea that “Authority Is Constructed and Contextual.” Students' wariness of sources that express opinions and their confusion in differentiating bias and viewpoint could be examined within the context of “Scholarship as Conversation.” And, although students may rarely think of information as having economic value, they do express concerns about how to properly cite sources. These concerns provide an opportunity to discuss the concept of intellectual property and the frame “Information Has Value.” Of course, time for IL instruction is always an issue, but these strategies, combined with other approaches such as embedded librarians and credit-bearing courses, may allow librarians to integrate the *Framework* into their instruction, with potentially transformative results.

The findings also have implications for future research. Building on previous research, interviews with community college librarians could provide an in-depth look at their experiences with skills-based vs. frames-based instruction and their perceptions of students' IL needs.³⁶

Such research could help community colleges better meet the IL needs of their students. A longitudinal study of community college students who transfer to four-year colleges and those who enter the workforce can provide insight into how effectively students' IL experiences in community college shape their success once they graduate. And quasi-experimental studies could investigate the efficacy of new types of interventions, including both skills-based and frames-based interventions.

Limitations

The students who participated in our study were self-selected and may not be representative of community college students in general or even community college students in Florida and New York. Among the 34 participants in the study, five community colleges, three in New York and two in Florida, were represented. This is a small sample among the community colleges in the two states; students in other community colleges may have different perceptions of their IL needs and experiences. Also, students who choose to talk to a researcher about IL experiences may differ from those who do not.

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APPENDIX

Interview Questions

1. **Warm-up question.** Please share with me something about why you decided to attend community college and the steps you took to get here.

Probes: Did you enter community college directly from high school?

Have you attended community college continuously since you started?

2. What is your personal goal for your education? (for example: skills improvement, Associate of Arts [AA] degree, Associate of Science [AS] degree, specific kind of job, professional certification, transfer to college or university, lifelong learning, other?)
3. Tell me about what you are doing in school now.

Probes: For example, what program or major are you in?

What stage are you at?

4. What kinds of assignments or projects have you typically been asked to complete in your college classes?

Probes: For example, tests, labs, essays, research papers, technical skills demonstration, presentations, group projects.

5. When you need to find information for a college assignment or project, how do you approach that?

Probes: What steps do you take or what methods do you use to find that information? Examples are consulting with others (ask whom), online searching (databases, internet, library website, discussion forums), visit the library, class text, or other resources.

What kinds of challenges have you faced along the way? What did you do?

Who do you consult for information or turn to for help when you need information?

6. What do you see as the knowledge and skills you need to find that information?

Probes: Ask about specific skills, the ability to access information (ability to search the internet, search databases, use the library, and so on) and understandings such as how to evaluate, use, and create information.

Ask about foundational concepts (such as in the ACRL Frames), issues of authority, the value of information, information creation as a process, research as inquiry, scholarship as conversation, searching as strategic exploration.

7. How did you learn what you know about how to find, evaluate, and use information?

Probes: Ask about each skill or knowledge mentioned in 6.

Where/when did you learn these things? Did you learn these skills in school? At this college or another college or university?

Who taught you what you know about finding, evaluating, and using information?

What was the setting (formal or informal)? How was the training performed? (in a classroom, one-on-one, or other)

8. How helpful was the information training you received? (This is in relation to question 7 above.) What would have made your experience better?

Probes: Can you provide an example of how the training helped or didn't help you with school assignments, on the job, or personal information needs?

9. What skills or knowledge do you think you might still need to learn or develop further to

help you get the information you need for school assignments, on the job, or for personal, everyday living?

Probes: Ask about each context: school, work, personal

How do you think you might learn or develop these skills further (through class instruction, lectures, personal research, books, help from others [who])?

10. How do you think your knowledge about information and your ability to find, use, and evaluate information will help or hinder you after graduation—at university, if you plan to transfer, on the job, or in your personal life?

Probes: Ask about each context: school, work, personal

11. Is there anything else you want to tell me about how you engage with information?

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