Workplace Information Literacy: A Neglected Priority for Community College Libraries

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Abstract:

Community and technical colleges have long been sites for educating two groups of students: those going on to baccalaureate education and those seeking degrees in vocational-technical fields. If there are specialized programs of information literacy instruction for these divergent groups, they have not been described in the literature. This article examines prior relevant literature and empirical evidence from focus groups and a survey to provide a brief outline of the vocational/technical information literacy programs in community college libraries and makes recommendations for reassessing the priority assigned to these activities.

Article:

INTRODUCTION

The world of business information is not confined solely to information-intensive work in corporations and financial institutions but also applies to workplaces associated with vocational fields as diverse as dental assisting, heating, ventilation and air conditioning, and construction management. The education for these workforces is centered in community, vocational, and technical colleges across the United States. The information literacy (IL) needs of students in these fields may be different than for those who ultimately transfer to 4-year schools. These fields have information practices that are components of the standard IL definition but may be unfamiliar to most librarians (Klusek & Bornstein, 2006). The importance of these skills to the 21st-century workforce is highlighted by the current presidential administration's focus on renewing the investment in community college workforce training through public expenditure and public/private partnerships (Brandon, 2009). This article introduces the concept of workplace information literacy and examines how it may support a refocusing of IL instruction in community and technical colleges.

Information Literacy and Standards

The phrase *information literacy* was used first to describe information practices in business. Paul Zurkowski (1974) introduced the concept:

> People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information solutions to their problems. (p. 6)

In other words, information literate people exhibit efficient and successful information behaviors. Information behavior itself is a complex entity as Case (2002) showed in his sweeping review of that literature. It is an interaction between information need and the environment or context that the user perceives himself or herself to occupy. The challenge for IL instruction is to make deep connections between information resources and the specific information behaviors of students with different career and educational goals.

Information need, recognized when one's knowledge is inadequate to satisfy a particular goal or activity, is central to IL. In the case of community college vocational students, an example of an information need might be that the required technique, materials, or processes are not intuitive and warrant further investigation. Choosing specific resources to satisfy a need requires the application of critical thinking skills in judging the best resource. This judgment involves many factors, including intended use, sources available, environment, and characteristics of the user. Leckie, Fisher, and Sylvain (Leckie, Pettigrew, & Sylvain, 1996) describe a model of information seeking by professionals that illustrates that information need is not constant and is influenced by multiple factors. Although identified for many types of professionals, there has not been as much research on those variable factors for vocational curricula or the work upon which those curricula are based. Understanding these factors would then influence the design and delivery of IL instruction.

Another component of IL in Case's (2002) definition of information behavior is information seeking, defined as the conscious effort made to acquire information in response to the need. Standard Two of the Association of College and Research Libraries' (ACRL's) Information Literacy Competency Standards for Higher Education (Association of College and Research Libraries and American Library Association [ACRL], 2000) uses the term *access* to describe selecting the most appropriate information to satisfy the need. In modern times, it is important to note that many sources of information are online; however, access must not exclude other available resources. In many workplaces, access might mean asking the most knowledgeable person in the room. Leckie et al. (1996) refer to the fact that professionals are more likely to consult a familiar source for information, one they have already used successfully. Subject-specific programs should include a variety of proven resources that can be accessed or are available professionally after the program ends. Other interactive factors that can influence information seeking behavior—and thus accessibility—are trustworthiness, packaging, timeliness, cost, and quality.

Critical thinking skills and information-seeking behaviors factor in determining how to evaluate and use the information appropriately. Leckie et al. (1996) show that the outcome of information use is a feedback loop that can alter behaviors based on the variable influential circumstances. In his book, *The Skeptical Business Searcher,* Robert Berkman (2004) refers to intuition as a tool or skill that can be harnessed to manage and help guide the proper evaluation and use of information. He feels that recognizing and challenging intuitive thoughts will help produce the expertise needed to strengthen and make more efficient subsequent use of intuition to evaluate resources.

The ACRL standards also emphasize critical thinking. The fourth performance indicator under Standard three—"The information literate student compares new knowledge with prior

knowledge to determine the value added, contradictions, or other unique characteristics of the information"—implies personal intuition can grow with an increase in prior knowledge (Association of College and Research Libraries, 2000, Standard 3, Fourth Performance Indicator). Community college students in a technical or vocational program will have some knowledge of basic resources and exposure to specific resource suggestions within their subject curriculum content. Under different influences, IL instruction can help increase their ability to properly evaluate the use of the resource and whether it satisfies the information need. In that same standard, performance indicator number seven—"The information literate student determines whether the initial query should be revised"—is similar to the feedback loop Leckie et al. (1996) discuss in terms of continuing to look for or evaluate information until need is satisfied or the problem is solved.

In the context of community college programs focused on the workforce, *performance indicator* means that students need to be able to identify and have access to work-related resources after graduation. Students also must have the skills to increase their subject knowledge and use intuition to seek additional resources and content. This issue has been influenced greatly by the Internet that puts a large amount of content within easy reach but sometimes without safeguards. Reva Basch, in the introduction to Berkman's (2004) book, acknowledges that the wealth of knowledge on the Web is increasing in legitimacy but also warns that skepticism is needed. The book goes on to address many of the techniques he uses to evaluate and find the "right" information within business resources. He argues that wise, process-guided answer seeking requires the proper application and testing of one's intuition.

Much has been written about critical thinking skills and their importance in education. In addition to evaluating resources and how to use them, critical thinking skills can help individuals grow their base knowledge into new conceptual ideas needed in the workplace. In an article in *Financial Week*, Mike Verespej (2007) talks about the need for a better-educated workforce. He quotes Mike Schmidt, director of education and community development at the Ford Motor Company, as calling for skills that will succeed in a conceptual economy. This is the critical mission of community colleges: to train the workforce and focus IL skills on applicable work environments.

Workplace Information Literacy

Despite the emphasis that Zurkowski (1974) and others have placed on workforce readiness as a desired outcome of IL, librarians have relied on set standards to achieve some overarching concept of IL, primarily in 4-year academic settings. When applied to the workplace, studies have placed emphasis on professional fields requiring advanced degrees, such as the financial or medical settings, both of which are heavily reliant on textual materials for information dissemination (Bruce, 1999; Cooney, 2005; Lloyd, 2010). By contrast, vocational/technical education focuses on fields such as dental assisting, nursing and heating, ventilation and air conditioning (HVAC), which require much more hands-on learning and are rarely the topics of information behavior studies.

Underlying IL are conceptual models stating that information seeking is a process (Kuhlthau, 2004) and that learning can be informed by the use of particular skills to obtain, organize, and use information resources (Bruce, 1997, 2008; Todd, 1996). The combination of planning for

information gathering and skillful use of information and communication technologies lies at the heart of IL. Christine Bruce (1997) proposes seven “faces” of IL that change according to the context in which the students find themselves. Bruce (2008) re-examines the concept of these faces, focusing on the learning that is implied within each of the situations. She expands the purview to include the workplace and other areas outside of the narrow confines of strictly educational settings.

Bruce (2008) writes of seven nonlinear faces of informed learning: information awareness and communication, sourcing information to meet a particular need, information process, information control, knowledge construction, knowledge extension, and finally wisdom. Each face is made up of varying levels of information technology use or computer skills, knowledge of information sources and processes, and the application of control over the information found. To describe these phenomena in another way, users interact with computer systems to navigate to known or searched-for sources and then process and control the information that they encounter to extend their knowledge into the realm of wisdom about a particular domain.

Bruce (2008) goes on to build a research-based framework for providing opportunities within curricula for the teacher, the learner, and information to interact in meaningful ways in order to obtain particular learning outcomes. There are six different frames that can be employed for structuring those outcomes in different situations. IL classes in libraries often emphasize the content frame, which corresponds to teaching students how to interact with sources. Because this instruction refines skills, especially with interfaces such as search engines and databases, it is also part of the competency frame. Bruce's last four frames are rarely part of a librarian's purview but instead are embedded in the learning outcomes of a particular curriculum. These frames include learning to learn, personal relevance (how the learner relates to the topic that is being presented), the social impact of the topic and its outcome, and finally the relational frame, which helps students situate their views into those held by other students and society at large.

Employing the seven faces and six frames of informed learning can be useful for teaching students about the workplace whether it is in a vocational setting or the corporate setting that most 4-year business programs target. As Bruce (2008) notes, “If information can be transformative and information literacy can have an impact on social, economic, and cultural development, then curriculum design in some areas may be enhanced by a shift towards these directions” (p. 117). Instruction in workplaces often differs from that which takes place in classrooms. Education in the workplace resembles apprenticeships, involving a transmission of instruction from expert to novice. By contrast, classroom instruction draws on pedagogic tradition, wherein one speaker addresses a wide audience.

Much of the information seeking literature that deals with the business world is based on financial workers (Kuhlthau, 2004), and IL studies have followed suit (Bruce, 1999; Cooney, 2005). Most workers for these financial jobs are trained in 4-year colleges. The other world of work—one situated in vocational and technical education in community colleges—is based more on embodied knowledge and less on textual information handling. Lloyd and coworkers (Lloyd, 2003, 2005, 2010; Lloyd & Williamson, 2008) show that the ability to handle information is just as essential in these workplaces, but that these are highly contextualized for each work group. Lloyd's work compares novice firefighters with experts and analyzes their information practices.

Her expanded definition of *information literacy* derived from that study can be shortened: "Information literate people have a deep awareness, connection, and fluency with the … social, procedural and physical information that constitutes an information universe. Information literacy is a way of knowing that universe" (Lloyd, as cited in Lloyd, 2005, p. 84). To give students the tools to become information literate in the workplace and in life, IL instruction must be reformed.

> IL [information literacy] must be recast as holistic practice which is constituted through the whole person experiencing the information environment through the practices which are specific to the setting, and that this experience may not resemble the textual conception of current IL educational practice. (Lloyd & Williamson, 2008, p. 7)

In the United States, community college programs are often split between hands-on vocational fields and the instruction that prepares students to further their education at the baccalaureate level. Not all community colleges are the same; institutions range from having mostly vocational-technical programs to those working exclusively with students who never finished high school or who are preparing for college. Those with vocational and technical programs are the places where a variety of workplace contexts and their concomitant information practices are transmitted to new potential workers. As such, the IL practices that are suitable for the 4-year college experience may not work for these students. As Lloyd (2010) notes, the navigation of the many vocational and technical IL landscapes requires much more than the skill of finding information in library-oriented resources. If librarians focus on using a particular database or discussing plagiarism and call this IL when these skills may not translate into a particular workplace, students may perceive that IL instruction is unnecessary. Workplaces are too individual and steeped in context for some of the traditional IL skills to apply. In other words, vocational and technical community colleges need to customize IL instruction, making its skills relevant for each and every industry.

IL instruction in community colleges has not been widely researched (Arp, Woodward, & Warren, 2006; Dowell, 2006). The first step in creating better IL instruction for vocational students is to understand what is being done in community colleges at the present time and how it fits their unique demographic. As Patterson (2009) notes:

> All librarians profit from considering the transformative aspects of their work, but community college librarians in particular, who tend to serve historically underserved students, might consider new ways of thinking about IL that contribute to more equitable educational outcomes for their students. (p. 348)

One of those new ways of thinking might be to consider the special requirements of workplace IL for vocational-technical programs. The research described in this article is a start toward that consideration.

METHOD

The studies described here began as an attempt to describe the current state-of-the-art practices for the 21st-century community college librarian (Bird, 2011). In trying to ascertain the skill set necessary for community college librarians, researchers surmised that part of the challenges may

lie in the differences between IL instruction for students studying to go on to a 4-year college and those preparing for a vocational career (Arnold, 2010). After analysis of the survey results, two focus groups were held to expand upon those preliminary findings. This section describes the methods and participants involved in these research activities.

Survey

The 21st-Century Community College Librarian Survey was launched in May 2010. Community college librarians in North Carolina, South Carolina, and Virginia were e-mailed an invitation to participate in a survey. In addition, a broad nationwide call was sent out on the listserv for the Community and Junior College Section (CJCLS) of the ACRL. The researchers used Survey Monkey with the appropriate approval of the University of North Carolina at Greensboro Institutional Review Board. Seven questions (18–22 and 25–26) from that survey were designed to differentiate between IL programs for vocational/technical programs and those designed for college preparatory or transfer students (see the text of the questions in the Appendix). The survey did not ask for specific resources used but for the skills and primary learning objectives that are emphasized in the IL program.

There were 190 respondents from 33 states; most were concentrated in North Carolina (50 responses), others included 15 from Texas, 10 from California and Michigan, and 8 from Indiana and Illinois. 98% of the respondents held an MLS or equivalent, 90% identified themselves as White, and most had been librarians for more than 25 years. Participation was voluntary so results cannot be extrapolated beyond the institutions and individuals who responded to the call.

Focus Groups

Two focus groups were held with librarians from several North Carolina community colleges. The first focus group was small with only two attendees. The second focus group was held as a lunch meeting during a conference sponsored by the North Carolina Library Association CJCLS titled Library Instruction at the Point of Need. There were 16 attendees in this second group. The earlier survey results were shared with attendees at both groups and the conversation focused on IL with vocational students. The conversation was taped, a transcript was made, and results were read by two readers for the identification of significant themes that emerged.

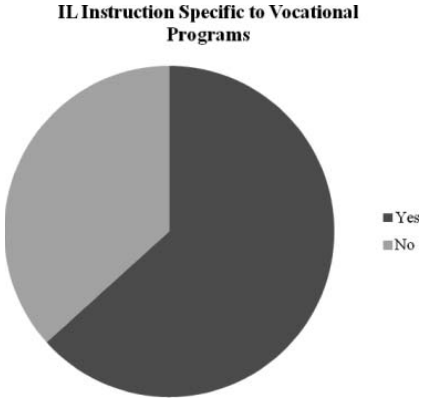

Figure 1: Percentage of respondents who said that library instructional classes for core education/transfer/college prep courses were different from those for technology or vocation-related courses

RESULTS AND DISCUSSION

The majority of respondents were clear in their response to Question 18 that they had a different program of instruction for vocational students (see Figure 1). Twenty-nine, or 18%, of the respondents did not answer "yes" or "no" but checked the "other" box and wrote out a longer response. These open-ended replies involved some indication that the class, the program, or the instructor determined the need for customizing the elements of IL instruction. As one respondent put it, "Instructional classes [are tailored] specific[ally] to the students' needs and the instructor's requests." Several responses, however, resembled this note from a survey participant: "Our technology and vocational programs have not asked for library instruction. Their students take the same ENG 100 as any other student, so they get *it* there" (emphasis added). This statement seems to imply that IL is one set of skills that can be "gotten" without consideration for context. The statement may also indicate that the instructors and programs are responsible for asking for this specialized instruction, and some seemed to express regret about that situation: "Currently have difficulty working with technology/vocational courses" wrote one respondent.

The focus groups provided a more in-depth view of the differential nature of working with faculty. In the first focus group, one participant noted,

> [One of the biggest issues is] the tremendous percentage of part-time instructors. We have three times as many part-time instructors as full-time instructors. Most of our students are taught by part-time instructors who aren't on campus, who don't know what we can do for them. Because they're not on campus and don't check their email all that often, it's very hard to get them to understand these are the resources we have to offer.

A second issue brought up by the same participant was that vocational instructors from industries often have no concept of the library's role. To quote that participant again,

> [A second issue is] the vocational classes: so many of those instructors come out of the industry, so they have no educational background. They have no idea why the library is there and what it does for them. When you can get to them, you can make some in-roads. (Focus Group 1 participant)

Part-time instruction can be a barrier to collaboration in IL instruction for these colleges. Some instructors were described as being supportive of the library IL efforts but only after some work on the part of the librarians. One participant said,

> We work hard with the nursing department. They have established a strong communication with us. They've even asked me to work with some of the nurses at the hospital, training them on some of the databases that we have and that they have access to. The hospital is supposed to be setting up a computer room where we will be able to go down and instruct their nurses on how to find information in the databases. (Focus Group 2 participant)

The lack of emphasis on vocational or technical courses of study is even clearer when examining further results (see Figure 2). The survey question asked for an estimate of the time spent on IL for vocational/technical classes. Seventy-five respondents noted that only 0% to 10% of their IL

instruction focused on vocational or technical programs, and another 63 chose 11% to 20% as a description of the time devoted to such IL classes. Only eight respondents (5% of 163) noted that their programs spent more than 50% of total IL instruction time in vocational/technical areas. Again, one respondent wanted to explain the nature of his or her IL program in his or her own words by noting, "We concentrate on courses require(d) for all students."

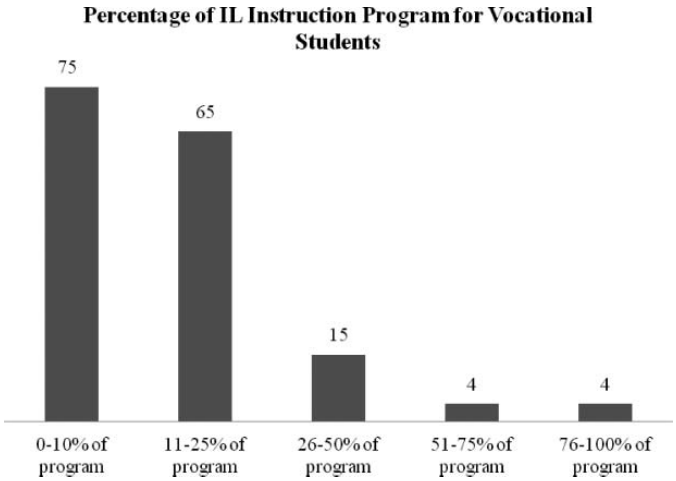

Figure 2: Number of respondents who estimated the percentage range of their information literacy (IL) program devoted to vocational students.

The focus on the core/college prep mission may limit the range of skills emphasized in IL instruction. Respondents chose from a list of skills included in classes for the two different community college constituencies, and the top skills focused on were virtually identical (see Figure 3). The number of participants who chose "Special resources for the topic" seems to indicate the strong influence that instructors bring to bear on the IL program. In open-ended responses, a number of respondents noted that we had not included database searching as a skill that might be covered, and one wrote "Strategies for searching the appropriate databases, not Google!" In fact, one of the possible choices was termed "Using Advanced Google Options," and this was selected as a third choice by only a dozen respondents. This number was higher for vocational/technical students than for college transfer students. Even as Google continuously adds content and capabilities the librarians who participated in our survey did not seem willing to consider it a possible source of information, one that would be available to anyone.

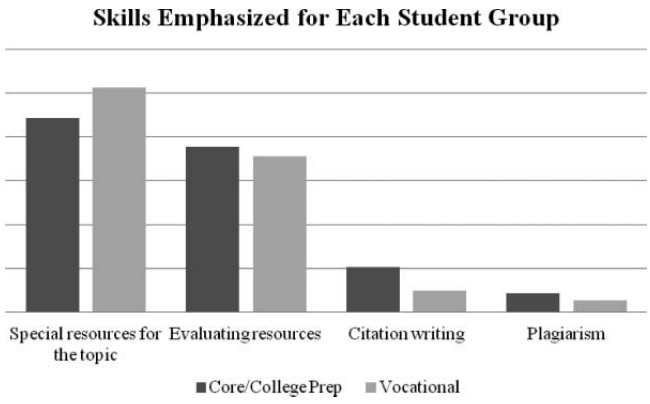

Figure 3: Top four skills focused on in the information literacy instruction by type of program served.

The primary objectives for the IL programs were examined in two other questions on the survey. Unsurprisingly, core/college prep classes did not focus on a particular job but vocational classes did (see Figure 4). Fewer respondents described their primary objectives for college prep classes as being dictated by the instructor's objectives. These results may point to a separate agenda for IL that is excluded from the vocational learning objectives. Clearly, the librarians rely on vocational instructors both to choose resources to teach and to set the objectives for IL.

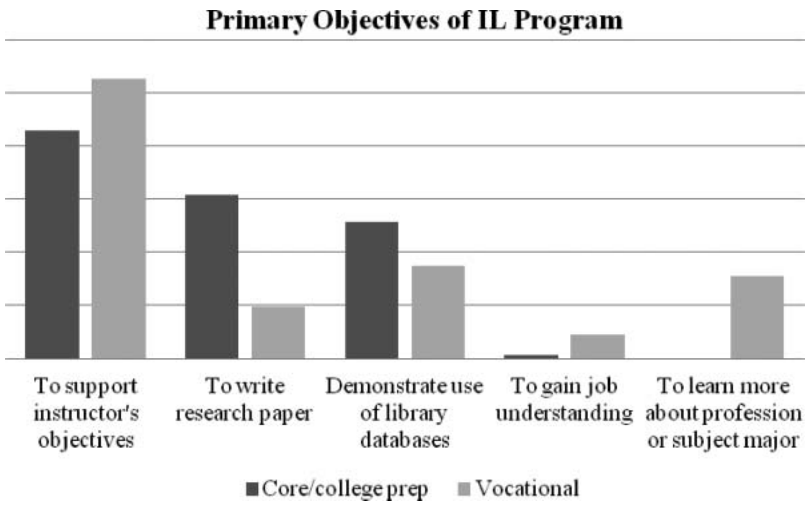

Figure 4: Primary objectives given for information literacy instruction (IL) by type of program served.

The implied distinction between IL instruction for vocational programs and that for college prep classes magnified in the focus group discussions. In the second focus group the conversation turned to the difference between instruction for nurses and dental hygienists. One respondent noted that dental hygienists were in the clinic all day, they are very hands on, whereas nursing students require a deep knowledge base that must be learned in the classroom. Another had this to say:

> And we have two new programs, and it's interesting because it's Pharmacy Tech and Physical Therapist Tech (or assistant). The Pharmacy Tech instructor has already brought the students in—and this is their first semester—to see the databases and what can help them. She had already sat with me for an hour, so she knew what we had to offer. The Physical Therapist Tech/Assistant hasn't been in yet because they've been in clinical. I don't know that I expect to see them. (Focus Group 2 participant)

In other words, some vocational instructors understand what the library may have to offer and seem to have an attitude that supports informed learning activities.

The librarians themselves have limitations beyond a lack of time or access to faculty. The challenge of designing instruction for the many different vocational programs was noted during the second focus group conversation.

> [The difficulty] is the ability to identify what the information literacy competencies will be in these vocational areas. Keep the university counterparts in mind: they have subject

> specialists that work with departments. [They] have an extra degree that affords them some familiarity with what the subject matter is for the people you're serving. I don't know many people who have HVAC degrees in our [profession]. If HVAC approached me to do an Associate's [information literacy program] … I'd have to get familiar enough to be able to answer subject-specific questions. That's a mammoth job. (Focus Group 2 participant)

Some community and technical colleges have proposed experimental solutions such as embedding librarians in courses, including Blackboard courses where the librarians would function as teaching assistants. Another participant mentioned an experimental program at one community college:

> They're starting to create learning communities at our school. HVAC students are having a hard time getting through the English. They're not getting their certificates because they're not finishing out the English requirement. … They're making the English class relevant to them in the learning community. That's where the librarian can come in. Now you have the trifecta: the content, the English, and the librarian. I don't know how [other] librarians can put that [the learning community] other than push it as an idea. (Focus Group 2 participant)

CONCLUSIONS AND FUTURE RESEARCH

As the survey results indicate, some librarians do not perceive a problem with the lack of "library instruction" tailored to vocational/technology students. Their attitudes may reflect a bias toward baccalaureate-trained, professional use of information and libraries which is infused into present IL practice. Yet the world of business concerns more than what happens in finance; it includes the small businesses that are often run by those trained in vocational schools.

Drawing on her skills and content frames (Bruce, 2008), library instruction addresses library-owned resources and the skills necessary to use them. As Zurkowski (1974) and Rosenberg (2002) have noted, all work is now involved in information handling and that is what librarians could be teaching in IL classes. It is not just about the resources themselves, it is about helping students learn how to apply critical thinking skills and develop the intuition needed to properly evaluate and use information to accomplish their goals in their workplaces and in their lives. As Bruce (2008) clearly shows it is the process of learning that librarians should influence. It is more than simply resources and skills, it is process applied to particular contexts. To think that we have imparted "it" to all students because they have completed English 101 is a fallacy.

Cases in which IL instruction is most effective for vocational-technology students seem to be where there is an emphasis on collaboration with instructors. Survey results indicate that librarians work directly with faculty to design appropriate instruction for these workforce classes, and these conclusions are supported in the focus group sessions. As Lloyd's (2003, 2005, 2010) work indicates it would be impossible for a single librarian to know every profession that he or she might be required to teach. Collaboration is an essential IL instruction component, especially in these technical landscapes (Atwong & Taylor, 2008; Bowers et al., 2009), yet is often neglected. If used it could enhance the library's effectiveness. As one focus group participant notes, "there's [a database] that you can go where you work on certain cars. The depth

of the knowledge is for real people, it's not just academic. Yeah, I think the workplace and the fact that we have older students could be developed." Other attendees note that collaboration with vocational faculty is often difficult because information seeking and use are not considered parts of the learning outcomes that faculty envision for their students. As observed in the focus groups, many full-time and part-time faculty come from industries so they do not know about the modern services that libraries provide and do not think that information skills should be integrated within the curriculum of their disciplines. Conversely, librarians are unschooled in the trades and cannot see how the information skills that they offer might be used in the modern workplace. Workplace IL may give them a way to demonstrate the importance of these skills to instructors and librarians.

Context-sensitive IL instruction for technical programs could help to solve the problem caused by the increased need for remedial education, another challenge for community colleges. It might be useful to redesign English 101, tailoring the core curriculum course to specific vocations. Such customization would affect the design of the IL instruction that supports it. Community college curricula change might be called for as illustrated by the idea of learning communities described by one focus group participant. Separate sections of HVAC English 101 can provide more contextual help to the students, but that is an older model of vocational technical education that may have to be reexamined. If librarians wish to promote lifelong IL, then they must embrace a broader view like that of Bruce, Lloyd, and others. Applying these principles in community colleges and technical schools will help to prepare students for the real world of work.

Librarians are not conversant in every kind of workplace, so we must rely on instructors to help us define the skills that need to be taught and help them create meaningful assignments to facilitate such learning. Librarians are not schooled in HVAC, but we work with people who are and can help them be more conversant in methods for going beyond the first faces of IL—of information awareness and source identification—into the realms of use and control. More research is needed to understand the best practices for facilitating this collaboration in a difficult landscape of part-time instructors and uncertain administrative support for these efforts. Taking up this neglected challenge, however, especially in light of the renewed commitment to these schools across the United States, will ensure the important place that librarians need to occupy in the 21st-century information universe.

APPENDIX

Survey Questions About Information Literacy Outcomes

Q18. Are your library instructional classes for core education/transfer/college prep courses different from technology or vocation-related courses?
Q19. Please estimate the percentage of your library instructional program or efforts provided for core education/transfer/college prep courses in comparison to overall instruction.
Q20. Please estimate the percentage of your instructional program provided for technology courses in comparison.
Q21. Which of the following skills do you cover in your core education/transfer/college prep IL classes? Choose the top three.
Q22. Which of the following skills do you cover in your technology or vocation-related IL classes? Choose the top three.

Q25. The primary objectives for your instructional classes for core education/transfer/college prep courses are:
Q26. The primary objectives for your instructional classes for technical or vocational courses are:

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