

CHAPTER 13

INFORMATION LITERACY PREPARATION OF PRE-SERVICE AND GRADUATE EDUCATORS

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With the development and adoption of the Common Core State Standards (CCSS) for K-12, there has been a shift toward challenging students to demonstrate higher-order thinking skills. This shift includes specific goals in the area of information literacy (IL). Recently, however, as one of the authors reviewed student writing in her undergraduate pre-service and graduate teacher education classes at a public suburban university, the lack of IL skills exhibited by teacher candidates at both levels was evident. This is a major concern since these are the teachers that will be expected to model and teach these skills to K-12 populations.

A large part of the problem may simply be semantic, of course, but we believe the lack of a common terminology between and among disciplines is a critical factor in what we are teaching and how we assess learning of IL skills at all levels and across disciplines. That is, while a review of standards across disciplines demonstrated some level of emphasis on IL skills, the specific terminology used to address IL varied across disciplines, and without a shared framework and terminology, the focus on IL in both K-12 and higher education is fragmented. This is evident in analysis of IL standards and review of research studies addressing interventions in pre-service and graduate educator preparation programs. Thus, the final section of this chapter includes possible solutions to begin improving IL skills in teacher preparation programs.

TEACHER PREPARATION AND IL

In pre-service undergraduate teacher education programs, the majority of students are recent high school graduates. In graduate education programs, serving both practicing teachers and career changers, there are a wide range of skills

reflecting a wide range of undergraduate preparation. Both the Master of Education (M.Ed.) and the Master of Arts in Teaching (MAT) candidates come from a variety of different undergraduate K-12 teacher preparation programs, with the MAT candidates excluding undergraduate teacher preparation. The common characteristic of teacher education candidates we discuss in this chapter is a lack of IL skills acquired in previous educational settings, as also noted by Thomas Scott Duke and Jennifer Diane Ward (2009). The major focus of this chapter is to consider some of the factors impacting the IL preparation and skill level of candidates in teacher education programs and the impact (if any) of the Common Core State Standards (CCSS) on teacher education.

The National Forum on Information Literacy (NFIL) (2015) asserts that “The overarching goal of K-20 education is simple—to produce independent, self-sufficient, lifelong learners who can successfully navigate the competitive challenges of post-secondary educational and/or workplace opportunities.” Marjorie M. Warmkassel and Joseph M. McCade (1997) also emphasized the importance of educator preparation in the area of IL skills to begin development of these skills before students graduate from high school.

A study by Kelly L. Heider (2009) addressed the importance of beginning instruction in IL skills as early as elementary-school years, a premise also supported by the CCSS (CCSSO, 2010), that begins with the following kindergarten-level standard: “With prompting and support, ask and answer questions about key details in a text” (ELACCKRL1 Key Ideas and Details), thereby introducing young students to the concept of providing support for their ideas, an important foundation of IL. By third grade, students are asked to build on this skill and must be able to “Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic quickly and efficiently” (ELACC3RI5). By the time students complete high school, then, the expectation is that they can

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. (CCSSO, 2015)

But how are teachers being prepared to teach these skills?

TEACHER PREPARATION PROGRAM STANDARDS

Warren F. Crouse and Kristine Esch Kasbohm (2004) addressed the changes in education policy that have led to the increased importance of data-driven

accreditation programs. For example, the renewal of the Elementary and Secondary Education Act reauthorized in 2002, commonly referred to as No Child Left Behind, focused on accountability in K-12 public education. Schools were rated based on student performance data. As Gary Olson (2010) proposed, the focus on accountability in higher education revealed the many layers of data that could be addressed (e.g. fiscal, disciplinary). By 2013, a bill was proposed in Congress to hold institutions of higher education accountable for their four year completion rate data (see HB 1928 (<https://www.congress.gov/bill/113th-congress/house-bill/1928>)). Although higher education and educator preparation programs had accreditation programs in place for accreditation purposes, the emphasis on completion rates and performance after graduation added another layer of accountability.

Educator preparation programs prepare for an online and onsite review every seven years to maintain Council for Accreditation of Educator Preparation (CAEP) accreditation. As part of the accreditation process, programs must meet CAEP standards, at least some of which recognize the importance of IL skills in teacher preparation, for example, “The teacher understands the demands of accessing and managing information as well as how to evaluate issues of ethics and quality related to information and its use” (CAEP, 2015). CAEP (2015) standards, however, focus on judging an institution’s educator preparation program rather than setting standards of performance for individuals, as evidenced by CAEP Standard 1 which addresses expectations for the curriculum in educator preparation programs, and CAEP standards 2–5 which address the structures supporting the educator preparation programs (field experience, candidates, program impact, program capacity). CAEP Standard 1.1 includes a link to other accreditation standards: “Candidates demonstrate an understanding of the 10 Interstate Teachers Assessment and Support Consortium (InTASC) standards at the appropriate progression level(s) [i] in the following categories: the learner and learning; content; instructional practice; and professional responsibility” (CAEP, 2015). The Interstate Teachers Assessment and Support Consortium (InTASC) was formed in 1987 “to reform the licensing, preparation and professional development of teachers” (CCSO, 2011). The development of these Standards was sponsored by the Council of Chief State School Officers (CCSSO), the same organization that was involved in the development of the CCSS. The major links to IL are found in Standard 5, Application of Content, Essential Knowledge, “The teacher understands the demands of accessing and managing information as well as how to evaluate issues of ethics and quality related to information and its use,” and Standard 9, Professional Learning and Ethical Practice, Performances, “The teacher advocates, models, and teaches safe, legal, and ethical

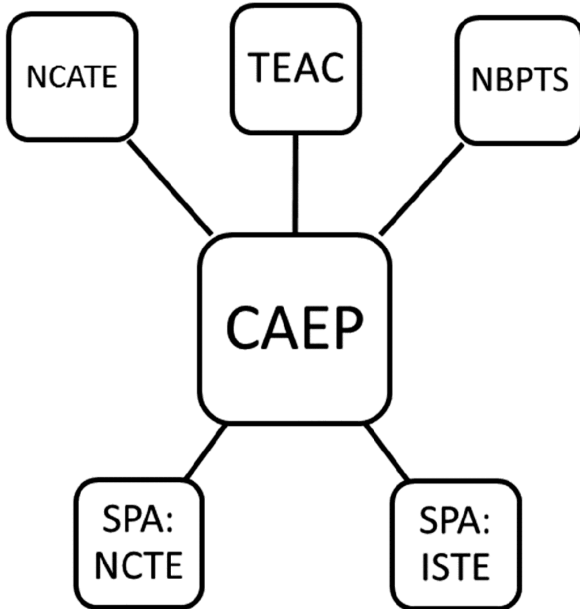
use of information and technology including appropriate documentation of sources and respect for others in the use of social media.” CAEP also provides a second level of accountability: “1.3 Providers ensure that completers apply content and pedagogical knowledge as reflected in outcome assessments in response to standards of Specialized Professional Associations (SPA), the National Board for Professional Teaching Standards (NBPTS), states, or other accrediting bodies (e.g., National Association of Schools of Music—NASM)” (CAEP, 2015). The relationships between accrediting organizations are represented in Figure 13.1.

The National Council of Teachers of English (NCTE) includes two relevant standards, Standards 7 and 8—“Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience” (std7), and “Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge” (std8)—which refer to elements of IL as defined in the *Framework for Information Literacy for Higher Education (Framework for IL)* (ACRL, 2015), but do not provide a structure for how to prepare teacher candidates in IL.

InTASC Standards (CCSSO, 2011) emphasize technology merely as a tool. Amanda M. Fairbanks (2013) addressed technology as a critical element in today’s schools; however, her emphasis was on the importance of digital curricula and digital tools without addressing the value of IL in selection of content and research. The International Society for Technology and Education (ISTE), the professional specialty association for technology specialists in schools, addresses the use of technology as an important component of IL, but still includes the technology-as-a-tool representation: “Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning.” As we will show in more detail later in this chapter, however, the lack of a shared vocabulary can have a constraining effect on collaboration, especially across disciplines.

INFORMATION LITERACY OF TEACHER EDUCATION MAJORS AND GRADUATES

Marcia Stockham and Heather Collins (2012), in their report on a survey of pre-service education majors (juniors and seniors) to self-evaluate their level of IL skills, note that



Legend:

NCATE National Council for Accreditation of Teacher Education

TEAC Teacher Education Accreditation Council

NB PTS National Board of Professional Teaching Standards

CAEP Council for the Accreditation of Educator Preparation

SPA Specialty Professional Association

NCTE National Council for Teachers of English

ISTE International Society for Technology in Education

Figure 13.1. Accreditation structure for teacher preparation programs

The fifth question [asked of pre-service teachers] was preceded by this statement: “Information Literacy Competencies for K-12 students (also called Information Power Standards,

Handy 5, Big 6, etc.) include concepts such as: knowing how to access, evaluate and use information in order to become independent learners that allow them to become socially responsible.” When asked whether the students were familiar with these concepts, only 10% indicated they were “very familiar.” Fifty-one percent indicated they were “somewhat familiar” or had “heard of them,” while 39% indicated this was the first they had heard of them. (p. 65)

Stockham and Collins (2012) also surveyed school media specialists to elicit their perceptions of the IL skills of new teachers in their schools. The results of the survey of school media specialists aligned with the student self-evaluations, indicating that students and new teachers did not have knowledge of IL skills. School media specialists’ comments illustrate common themes in other studies as well, such as students’ perception that the ability to Google demonstrates mastery of IL skills. Project Information Literacy (Head, 2013) also reported this result. Although Google represents an acceptable starting point for locating information, there was no information provided on students’ ability to evaluate the sources located by a Google search.

Marlene Asselin and Elizabeth Lee (2002) discuss the common, but incorrect, assumption that preservice teachers have acquired IL skills. As they report, if this lack of IL skill development continues, teachers will not be equipped to teach their K-12 students. To address this need, they developed a teacher-librarian course for pre-service teachers that included lesson plans to develop IL skills in K-12 classrooms. Their emphasis on teacher-librarian collaboration and specific tasks (e.g., lesson plan) was recommended for future studies.

Deborah M. Floyd, Gloria Colvin, and Yasar Bodur (2008) reported on a study that began when an instructor of a field experience course “designed an assignment requiring the preservice teachers to identify real classroom problems in elementary schools and to then use professional literature to research the problems.” So-called “real-world” classroom problems such as this typically include elements of effective practice by providing pre-service teachers with the opportunity to analyze student learning and research solutions to problems they will experience in their future classrooms (Coggshall, Rasmussen, Colton, Milton & Jacques, 2012). In Floyd, Colvin, and Bodur’s (2008) study, the instructor provided a rubric to help students evaluate the appropriateness of sources, emphasizing recency, credibility, and relevance. Results indicated that students demonstrated mastery of addressing the real-world problems they were presented, but struggled with academic IL skills such as the use of quality professional references, especially peer-reviewed journals. This is similar to what

happens in other professional fields, with students succeeding within a specific discourse community but not transferring the skills and knowledge to different communities. We expect, however, that part of what may constitute a discourse community is how it uses (and values) IL skills.

During the following semester, collaboration with library staff included an in-class IL session intended to support students in the ability to

identify the major databases for use in education research and to be able to use them efficiently; to distinguish between peer-reviewed articles and other resources; to know how to locate articles, books, and other appropriate resources, and to be able to identify ways in which they could get assistance with their research. (Floyd, Colvin & Bodur, 2008)

Results at the end of the semester with the librarian presentation demonstrated an increase in peer-reviewed sources in projects. This is an example of the potential benefits of teacher-librarian collaboration in teacher preparation.

These studies include librarians as collaborators in development of IL skills. Librarians, as indicated in the following section, have developed structures and language to support development of IL skills. The terminology in other education fields addressed in this chapter, however, is less focused on a common definition of IL. How does this lack of a common language impact preparing K-12 teachers to prepare their students in IL skills?

SPEAKING A COMMON LANGUAGE

Although the multiple organizations impacting teacher education all include some reference to IL skills, it is interesting to note that none of them use the specific term *information literacy*. Jordan K. Smith (2013) reported on a qualitative study of secondary teachers which revealed that participants were not familiar with the term or scope of IL. Smith suggested that since the majority of IL studies were published in library and information studies publications, teachers would not have been exposed to them. The absence of shared terminology is also evident in the K-12 arena with the *Standards for the 21st-Century Learner* of the American Association of School Librarians (AASL), the professional organization for librarians serving K-12 schools, and the fragmented skills within the CCSS. If teachers are to be prepared to implement the CCSS related to IL, the adoption of a common framework or shared vocabulary across disciplines is essential for communication.

Given the growth of available information, obsolescence of information, and lack of screening of information credibility as we moved from an oral to a print

and now to a digital culture, an increased emphasis on IL skills in K-12 education is essential (Warmkessel & McCade, 1997). The CCSS reflect recognition of this need to prepare K-12 students with skills for success after high school, including foundational skills (e.g., reading, and especially critical reading) essential to IL, and higher-order thinking skills required for success in higher education and careers (CCSS, 2015). The emphasis begins in kindergarten: “With prompting and support, ask and answer questions about key details in a text” (CCSS, 2015), and continues through high school content literacy standards: “Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem” (CCSSO, 2015).

The AASL Task Force on Information Literacy Standards developed a list of competency standards to be addressed in K-12 education in 2007 that offers

a vision for teaching and learning to both guide and beckon the school library profession as education leaders. The learning standards shape the library program and serve as a tool for school librarians to use to shape the learning of students in the school. (AASL, 2015.)

Resources, including lesson plans and an alignment, or “crosswalk,” with the CCSS, are published on the AASL website. Although this crosswalk attempts to address the alignment of global AASL Literacy Standards and linked CCSS across grade levels, we believe the lack of specificity within the CCSS does not provide an adequate picture of how IL is addressed.

One problem with the attempt to connect AASL and CCSS Standards is the lack of a common terminology across disciplines. For example, as illustrated in Table 13.1, the AASL reference to an “inquiry-based process” is aligned with the CCSS standards addressing “Research to Build and Present Knowledge.”

Although the two standards represent a shared vision of inquiry, the lack of shared terminology can create a barrier to collaboration between school librarians and classroom teachers. As Maggie Dugan (n.d.) notes, “Every type of science has a robust language of its own, rife with acronyms and jargon that make for efficient communication amongst peers within the field but can be confusing, misleading or off-putting to people from other disciplines.”

The Association of College and Research Libraries (ACRL) also recognized the need to address IL in post-secondary education. Table 13.2 highlights similarities and differences between the elements of the definition of IL by the ACRL (2000) and the CCSS for Literacy in World History Grades 11–12.

The shared vision of IL is masked behind differences in vocabulary. Dugan (n.d.) says that “we rely on language to convey meaning, and that if we don’t

Table 13.1. Comparison of AASL and CCSS standard

AASL Standard 1: Inquire, think critically and gain knowledge	CCSS English Language Arts/Literacy Standards
	Reading Informational Text Grade 6
1.1.1 Follow an inquiry-based process in seeking knowledge in curricular subjects, and make the real-world connection for using this process in own life.	CC.6.W.7 Research to Build and Present Knowledge: Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.

Table 13.2. Comparison of ACRL and CCSA

ACRL IL Definition Elements	CCSS.ELA-Literacy.WHST.11-12.8
<ul style="list-style-type: none"> • Determine the extent of information needed • Access the needed information effectively and efficiently • Evaluate information and its sources critically • Incorporate selected information into one's knowledge base • Use information effectively to accomplish a specific purpose • Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally. (ACRL, 2000) 	<ul style="list-style-type: none"> • Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; • Assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; • Integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. (CCSSO, 2015)

have a shared understanding, it's harder to work together and collaborate creatively." In other words, although it appears on the surface that educators and librarians at all levels believe in the importance of a focus on IL, the lack of a shared language interferes with collaboration in providing effective IL instruction and support for students at all levels.

A key source of confusion in reviewing standards is the definition of a standard. Teacher education accrediting standards are intended to guide the self-assessment of educator preparation programs using types of results described by the Council of Writing Program Administrators (CWPA) (2014) as outcomes, but the teacher education standards do not provide the precise level of achievement described as standards by CWPA (2014). Thus aligning standards with different levels of precision requires subjective assumptions by the reader. With

the recent moves by both ACRL and the CWPA to present a framework, rather than standards, for IL, we argue that teacher education programs and accrediting bodies need to review their own IL standards and consider how they may—or may not—align.

IMPROVING IL SKILLS

While it may not need saying, we nonetheless argue that in order to teach IL skills in K-20 settings, teachers must themselves first be information literate. A common characteristic of many teacher education candidates appears to be insufficient knowledge of core IL skills, according to Laura Saunders (2012) who summarized research indicating that college students did not demonstrate IL competency and university one-shot librarian presentations were not adequate to improve their skills. The lack of effectiveness of one-shot librarian presentations was also reported by Crouse and Kasbohm (2004). Duke and Ward (2009), however, report that, “many teacher educators still do not view academic librarians as collaborative partners who can help them teach information literacy skills and research strategies to pre-service and in-service teachers” (pp. 1–2). As a result, perhaps, the one-shot approach to teaching IL skills is all too often still in evidence.

As Stockham and Collins (2012) so astutely assert, “Since teachers cannot teach what they do not know, it is necessary for teacher education programs and libraries to collaborate in meeting ACRL student learning outcomes for information literacy” (p. 59). Targeted interventions have proven helpful in developing specific skills, but a more structured cross-curricular model is essential to prepare future educators so they, in turn, can better instruct information literate students. Els Kuiper, Monique Volman, and Jan Terwell (2005) suggest that

Research on students’ search skills should no longer be restricted to the actual search behavior of children but should investigate ways for students to learn search skills in an educational situation. The research could compare the effects of various learning environments on the acquisition of search skills.

The NFIL (2015) suggests that “Information literacy is a learner centric instructional template that, if applied strategically, can foster the development of independent, self-sufficient learners. In fact, information literacy skills instruction cuts across all disciplines.” (See also Feekery, Emerson, and Gillian, Chapter 17, this collection.) To effectively ensure the development of IL skills as part of a framework, rather than as a set of fragmented skills, then, scaffolding of instruction is necessary.

Scaffolding provides support and structure for student learning at the point of need (see, for example, Douglas Fisher and Nancy Frey's (2010) extensive review and description of the instructional scaffolding approach). Smith (2013) also emphasized scaffolding of instruction as a factor for pre-service K-12 teachers and their K-12 students. A structured approach to scaffolding across the disciplines would need to engage both teachers and librarians in mapping the points of need at each level. For example, in college settings, students report their first-year composition instructors and librarians are key supporters in their development of early IL skills (Head, 2013). However, Asselin and Lee (2002) note that assumptions about student prior acquisition of IL skills can also be a barrier to effective IL instruction.

Effective collaboration between a college field experience instructor and librarian resulted in improved IL skill development of teacher education students in a job-embedded research project (Floyd, Colvin & Bodur, 2008). Similar results were reported in an early education study by Heider (2009), who found that teacher-librarian collaboration supported student IL skill development, but that a single intervention was not sufficient for continued growth. And, in a study by Angela Feekery, Lisa Emerson, and Gillian Skyrme (Chapter 17, this collection), the collaborative model was a contributing factor for student acquisition of IL skills. Asselin and Lee's (2002) research also provided a model for collaboration and relevancy in teacher education programs. Duke and Ward (2009), however, assert that

It is not enough to simply strengthen the information literacy skills of preservice teachers; in order to prepare teachers to effectively integrate information literacy into the P-12 curriculum, teacher educators and academic librarians must model and teach information literacy pedagogy; teacher educators and academic librarians must also model and teach the collaboration necessary to support such integration. (p. 251).

Further research needs to address the impact of scaffolding IL skill instruction across the curriculum. In the NCTE *Council Chronicle*, Lorna Collier (2013) discussed the potential for the CCSS to support writing across the curriculum efforts if writing is included in content assessment. AASL Standards provide alignment with the K-12 CCSS and could serve as a first step, and collaboration between teachers and librarians is essential (Crouse & Kasbohm, 2004). Alignment of the ACRL *Framework for IL* with discipline-specific programs could also provide guidance for increased collaboration at the college level.

However, as Feekery, Emerson, and Skyrme (Chapter 17) acknowledge, there is a problem of ownership of IL skill development. This is also seen in

conclusions drawn by Sharon A. Weiner (2014) after a survey of discipline faculty that addressed the importance of understanding the assumptions discipline faculty have regarding prerequisite IL skills they assume undergraduate students have already mastered. Librarians could work with faculty to develop methods to assess the level of individual IL skills that students have mastered as a pre-test to inform faculty of gaps in IL skills that would require intervention. The assessment model used by Feekery, Emerson, and Skyrme is an *example* of providing this kind of data for point of need interventions.

CONCLUSION

A common theme in research reviewed for this chapter is the lack of a common vocabulary. This interferes with communication and thus, potentially at least, with effective cross-disciplinary collaboration and continues to reinforce the development of splinter skills rather than effective IL skills. Collaboration between librarians and teachers in K-12 and higher education settings is essential. The ACRL *Framework for IL* can serve as a starting point for discussion across disciplines.

Mark Emmons et al. (2009) reported on a project that included alignment of ACRL's *IL Standards* (2000) with structured teacher/student/librarian activities and assessment across courses in an undergraduate program for dual special education/general education preparation. Although the sample size was too small to demonstrate statistical evidence, the qualitative data provide a basis for future research. An interesting outcome was the increase in rigor and expectations throughout the program. These results are in concert with Crouse and Kasbohm (2004) when they describe the natural link between library and teacher education goals, "to transfer to education department graduates the commitment to take the goals, objectives, strategies, methods, and results to their students" (p. 48).

Common vocabulary can contribute to the collaboration across disciplines that have been reported to support IL skill development. The cross-curricular model requires collaboration based on ownership of student IL skill development by all participants. The role of the teacher-librarian is essential at both the K-12 and post-secondary levels. Providing a model of collaboration for pre-service teachers is essential for their collaboration with librarians in their practice at the K-12 level. Developing a program-specific plan for scaffolding IL instruction with targeted assessment at each level could assist in providing point-of-need instruction, or what Feekery, Emerson, and Skyrme refer to as learner-centered pedagogy. Including a focus on real-world applications, as Floyd, Colvin, and Bodur have shown, can also contribute to preparation of teachers who are ready

to promote higher-order thinking through problem-based learning, including IL skills as a basis for growth in their K-12 students.

Success in learner-centered and campus-specific research models can promote discussion to align with the ACRL *Framework for IL*, as described by Barbara J. D'Angelo and Barry Maid (Chapter 2, this collection), as a flexible model that can address individual program context. Future research into the separate and combined implementation of scaffolded, cross-disciplinary, teacher-librarian collaborative interventions based on shared ownership of student acquisition of IL skills within a shared framework are necessary.

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