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Secondary Teachers' Perception of Information Literacy Skills
and Their Instruction in the Classroom

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Education

by

Jane Tu Quyen Thi Tran

2022

ABSTRACT OF THE DISSERTATION

Secondary Teachers' Perception of Information Literacy Skills and Their Instruction in the Classroom

by

Jane Tu Quyen Thi Tran

Doctor of Education

University of California, Los Angeles, 2022

Professor Kimberley Gomez, Chair

This qualitative study investigated secondary teachers' definitions of information literacy and how they teach information literacy in the classroom. The sample consisted of 15 secondary teachers in a large, urban public high school. I used qualitative interviews to determine teachers' understanding of information literacy and analyzed documents to determine how they teach information literacy in the classroom. My findings from the teacher interviews and document analysis reflected the conclusions of past literature: Teachers believed information literacy is important but do not have a common definition. My findings also suggested that teachers teach information literacy in a variety of ways, from thoughtful questioning of the text to determine credibility and to evaluate sources, to choosing relevant content that relates to students' lives and extending their knowledge, to web search through Google and research databases such as Google Scholar and EBSCO Host. Through document analysis, I

determined that teachers create assignments that ask students to show information literacy in a variety of ways, such as searching for information, accessing information through different sources, and constructing and extending knowledge based on the information they found. My findings suggest a call for teachers to agree on a common definition of information literacy and to collaboratively build a plan to incorporate information literacy into each part of the curriculum, not just into one isolated unit. Furthermore, I also recommend that the district hire a teacher librarian that can not only help students strengthen information literacy skills, but also collaborate with teachers to ensure a rigorous and relevant curriculum.

The dissertation of Jane Tu Quyen Thi Tran is approved.

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2022

DEDICATION

I dedicate this dissertation to my family: Tang Tran, Sa Doan, Anthony Tran, and Frankie Tran. Your love and support is incomparable.

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CHAPTER ONE: INTRODUCTION

In today's ever-growing data-rich world, students need to be able to access, evaluate, and use the information they find on the internet (Eisenberg et al., 2004). The ability to "share, discuss, interpret" (Head, 2012, p. 12), and make sense of information is critical. More than skills, information literacy allows students to become lifelong learners, because they have "learned how to learn" (American Library Association, 1989, p. 1).

As "digital natives" (Stanford History Education Group, 2016, p. 4), students are increasingly exposed to information, visuals, and different forms of social media online. Due to this saturation of information, students need to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the information needed" (American Library Association, 1989, para. 3). As such, effective information literacy instruction is essential. Students, however, are entering higher education without information literacy skills (Katz, 2007; *School Library Journal*, 2019; Varlejs et al., 2014). Teachers' understanding of information literacy is tentative, and many are unsure of their own definition of information literacy skills (Smith, 2013; Williams & Wavell, 2007). This uncertainty may translate to the lessons and strategies teachers are using in the classroom, leading merely to skill development rather than building students' research capacities and critical thinking skills.

Purpose of Study

Although most teachers agree that students should be taught information literacy skills, many are not clear about what to teach or how those skills would transfer to undergraduate studies (Goodin, 1991; Kovalik et al., 2013; Saunders et al., 2017; Varlejs et al., 2014). Many students do not make connections between the information literacy skills they learned in high school and how they can utilize those skills in higher education (Varlejs

et al., 2014). One step to alleviating this problem is to determine better communication between the high school and the college level to make sure that both institutions are working on the same skills (Saunders et al., 2017).

This study contributes to the existing knowledge by connecting teachers' understanding of information literacy to their practices in the classroom. Prior to this study and the 2020-2021 academic school year, teachers at my site did not consistently include an information literacy unit in their curriculum, and teachers taught it at their discretion. Because my school site was just starting to incorporate information literacy into the curriculum and making this unit mandatory, my study addressed how teachers define information literacy and how they teach it in the classroom. Exploring this information provided qualitative data to the teachers and district that could affect future curriculum development. Based on teachers' understanding and strategies in the classroom, the data may provide teachers with a common definition and understanding of information literacy and present strategies that will ensure consistency and rigor across the curriculum.

Additionally, data from the state testing shows that there is a need to explore how teachers are teaching information literacy in the classroom. The Smarter Balanced Assessments that California students take each year assess them in English and Math for grades 3-8 and high school, and are computer based and computer adaptive, with multiple choice questions and performance tasks that asks students to show their critical thinking and problem solving skills (Smarter Balanced Assessment Consortium). According to the 2018-2019 SBAC data for Los Angeles County, the general population of 11th graders scored 32.37% above standard when it comes to the Inquiry/Research strand. When broken down into subgroups, there is a difference in numbers. For the economically disadvantaged African

American students in 11th grade, 14.96% scored above standard, and for the economically disadvantaged Hispanic or Latino students, 22.01% of the students measured above standard. For the Asian students, 44.53% measured above standard; however, when delineating the Asian subgroups, 38.03% Filipinos measured above standard, and 18.92% of Native Hawaiian or Pacific Islander students measured above standard. For students who are designated as EL students, 3.08% measured above standard. Looking at this SBAC data, teachers and school district still have work to do to improve information literacy instruction. The first step can be to develop a common definition to ensure consistency and rigor for all students, especially at sites such as mine, which are now formally incorporating information literacy into the curriculum.

This study also asked teachers about their recommendations for other teachers who are teaching the concept of information literacy, which provided insight into teachers' struggles and may influence professional development and instructional support. Providing teachers with an opportunity to express their concerns allowed me to gather data on what teachers need support with and any challenges they had in common. Having similar challenges may give teachers the opportunity to advocate for themselves together for more education, support, or resources.

Research Questions

While teachers agree they should teach information literacy skills, there is no agreement on the definition or on how they should teach those skills (Kovalik et al., 2013). For that reason, the goal of this study was to conduct a qualitative study to explore teachers' understanding of information literacy and investigate how that understanding influences classroom instruction. The following questions guided the research:

1. What are high school teachers' understanding about information literacy?
2. In what ways do teachers incorporate information literacy into their instruction?
3. What recommendations do teachers have for teaching information literacy?

Research Design

My study employed a multiple methods primarily qualitative design (Creswell & Creswell, 2018) that investigated teachers' definitions of information literacy at a diverse urban high school and analyzed the strategies teachers were using in the classroom. I conducted individual interviews with teachers at the high school where I teach and gathered lessons and assignments for document analysis. These open-ended forms of data collection allow participants to share their ideas candidly (Creswell & Creswell, 2018). After the interviews and document analysis, I reviewed the data and organized them into codes and themes about teachers' definitions of information literacy and the strategies they are using in their classrooms. I also gathered information about their challenges and recommendations for teachers who are teaching information literacy.

Site and Population

The target population for my research project was the students at Franklin High School (pseudonym), which is part of the ABC High School District in Los Angeles, CA. During the 2020–2021 school year, 79.2% of students qualified for free and reduced-priced meals, and 17% of students were classified as English Learners (California Data Partnership, 2021). According to the California Department of Education (2021), Franklin High School's student demographics for the 2020–2021 school year were 75.5% Hispanic, 14.8% African American, 3.4% Asian, 1.7% Pacific Islander, and 1.3% White students. Because of the diverse student body, conducting research at Franklin High School allowed me to determine

how teachers view information literacy and analyze how that definition led teachers to strategize and plan their instruction in the classroom for an urban school.

Significant Outcomes and Broader Impacts

Information literacy is crucial for academic and professional success, yet research has indicated that there is insufficient information literacy education overall. The 2019 *School Library Journal* stated that while 89% of librarians and 81% of classroom teachers teach information literacy, they lack a way to formalize the instruction. One study showed that only 16% of pre-service teachers had a clear understanding of information literacy skills and 14% of those teachers modeled the skills to the students, 15% talked about those skills to the students, and 26% integrated the skills into assignments and rubrics (Stockham & Collins, 2012).

In this study, I sought to provide insight on teachers' understanding of information literacy at an urban, secondary high school. Moreover, I hoped to determine whether teachers' understanding influences their curriculum development. Because teachers have the autonomy to create their daily lessons and assignments, deciding on a specific set of skills may help promote fidelity and rigor across the schools in my district. This information could extend beyond my own district and would allow others to review and possibly use the strategies as well.

CHAPTER TWO: LITERATURE REVIEW

In the following literature review, I begin by discussing the literature related to the guiding theory of critical information literacy and how this theory influences the way information literacy might be taught in the classroom. I also discuss Bruce's seven faces of information literacy, which provides a lens for teachers to view information literacy as a relational model instead of a fixed definition and serves as a way to look at how teachers understand information literacy and how they can apply it to the curriculum. Then, I give a brief overview of information literacy and how it has changed throughout the years. I also review existing research related to information literacy within the context of K–12 environments and provide context for the work that teachers are currently teaching in the classroom. Lastly, I give my own definition of information literacy and discuss the gaps in the literature that I sought to address in this study.

Theoretical Framework

According to Tewell, 2018, critical information literacy is a way of thinking and teaching about the political dimensions and social construction of information and knowledge. Critical information literacy examines how students can question the information they find, determine the reliability of the information, identify the purpose of that information, determine the audience, and indicate how that information may be biased (Brisola & Doyle, 2019; Swanson, 2004; Tewell, 2018). Elmborg (2006) stated that information literacy is the ability of students to read, interpret, and produce information that is valued by academics but argued that information literacy should migrate away from “skills-based definitions of literacy and toward an understanding of literacy as a culturally

situated phenomenon based in the way communities construct meaning and belonging” (p. 193). More than just skills,

for information literacy to have a critical dimension, it must involve both an understanding of how various classification systems work, and also an understanding of how they create and perpetuate such powerful categories for representing “knowable reality and universal truth.” (Elmborg, 2006, p. 197)

Not only should students be able to find information for their assignments, but they also need to evaluate where the information comes from, such as social media platforms, news sites, search databases, or the different search engines. Additionally, students need to be able to view the information in the context of their own reality, to see how it may confirm, contradict, or expand their knowledge.

Along the same lines, when students are accessing information, what they find is not neutral. According to Jonathan Cope (2010), critical information literacy “maintains that the development of students’ capacity to pose thoughtful questions (as opposed to clear answers) is as important as their ability to locate, organize, evaluate, and apply information in the research process” (p. 13). In asking questions, students are actively engaged in their learning. Asking questions ensures that students are not just consuming information, but understand the different contexts in which the information is developed. In critical pedagogy, “there is no such thing as an ‘apolitical’ education exchange” (Cope, 2010, p. 24), and education should serve as a catalyst for change. Critical information literacy allows students to participate in the inquiry process to produce work from their own interests, negating the “banking” model of education in which the students only internalize and store information given by the teacher (Freire, 2007, p. 72). Paulo Freire argued that if students develop a “critical consciousness” of the world, they can transform it (Freire, 2007, p. 73).

Educators, according to Tewell (2018), should teach students how to read texts from the dominant, negotiated, and resistant spectatorship positions to be critical of the information they encounter, categories first introduced by Stuart Hall in 1973. The dominant position encourages students to read the text the way creators intended, without much oppositional thinking. The negotiated position urges the reader to believe some ideas but can disregard or oppose others. The resistant spectatorship position challenges students to question the dominant messages and beliefs the text imparts (Tewell, 2018). Safiya Noble's (2013) work on how African American girls are represented as "highly sexualized and even stigmatized" (p. 1) in Google searches on the web showed a need for students to question and challenge the text and images they encounter. An objective standpoint when it comes to viewing information would reinforce a male and white privilege education that causes students to conform (hooks, 2003, p. 128) rather than question the material and creators of information.

Teachers can view information in different ways, and this may determine their curriculum they enact. Information can be seen as a *thing* that exists outside of the user, where "knowledge is external to the knower . . . independent of mediation and interpretation" (Luke & Kapitzke, as cited in Elmborg, 2006, p. 198). Additionally, teachers can define information as a *process* in which students use the information and details they encounter to make new knowledge (Elmborg, 2006). Next, information can also be *knowledge* that inspires students to actively participate in their education and learn to navigate their classroom and the world they live in (hooks, 1994). The information and knowledge that students receive in class should be meaningful, should value the students' voices, and should allow the teachers and students to grow (hooks, 1994). This knowledge will translate into an

education that encourages students to use information to analyze dominant ideology to educate others about their own experience (Elmborg, 2006; Kellner & Share, 2019). All these ways of viewing information may influence teachers' understanding of information literacy and how they conceptualize and teach information literacy in the curriculum.

Instead of looking at information literacy as a set of fixed skills or an all-encompassing definition, Christine Bruce's 1997 study suggested that information literacy be viewed as a relational model that shows how students interact with information and how teachers can utilize students' different experiences to shape learning outcomes (Bruce, 1997). Bruce's seven faces of information literacy offered a guide to looking at the different ways that students can experience information literacy (Bruce, 1997). Rather than viewing information literacy as a specific set of behaviors, this framework allows teachers to see the connections between information literacy definitions and instructional practices (Bruce, 1997). The seven faces include the following:

1. The information technology experience, in which students communicate and retrieve information
2. The information source experience, where students find information in information sources
3. The information process experience, where students execute a process to find information
4. The information-control experience, where students make connections and store information
5. The knowledge construction experience, where students build up personal knowledge in what they are interested in

6. The knowledge extension experience, where students learn new knowledge or ideas
7. The wisdom experience, where students use information to benefit others (Bruce, 1997)

Bruce's 1997 study of 60 academics from different disciplines suggested that information literacy can be experienced in a variety of ways (Bruce, 1997). This is consistent with research by Boon et al. (2007), whose phenomenographic study suggested that the 20 English teachers interviewed from the UK had similar conceptions of information literacy compared with Bruce's study. Boon et al.'s (2007) study revealed that English academics conceptualize information in ways ranging from accessing and retrieving information (which relates to Bruce's second and third faces of information literacy) to becoming independent thinkers (which closely relates to Bruce's sixth and seventh faces of information literacy). However, Boon et al. (2007) did note that the English teachers in the study did not address how information should be stored or retrieved, only that it is critical to have a selection of texts to choose from.

Webber et al. (2005), in a study of 20 marketing and English professors, used the same phenomenographic approach as Bruce and confirmed that educators identify information literacy as being able to access and retrieve information, knowing basic search skills and when to use them, and becoming independent and critical thinkers. Additionally, Webber also pointed out some nuanced differences, such as English teachers emphasizing books as information sources, while marketing academics view information sources as coming from news, market reports, company websites, or data sets, generally including electronic sources (Webber et al., 2005). These studies suggest that academics experience

some overlapping in their conception of information literacy, though differences may occur due to sample size and time period, because the use of technology may have changed from being used to communicate to now being used to acquire information (Boon et al., 2007).

Yu et al.'s (2010) study of three Malaysian teachers revealed that they conceptualize information literacy as information and communication technology, sharing information, and accessing information. Yu et al. determined that these conceptualizations are on the "lower level of [information literacy] skills" (p. 261) of Bruce's seven faces. The teachers in this study did not mention knowledge construction, knowledge extension, or even wisdom extension, which reflect higher-level skills of information literacy, as they shaped students into intelligent and self-sufficient students (Yu et al., 2010). These studies reveal that there are many ways of looking at information literacy, and that even though there is not a firm definition that everyone can agree on, there are similarities among academic professionals. However, those similarities may be different due to the needs of the academics and how technology has changed throughout the years.

The theoretical framework that guided my study was critical information literacy. While there are standards and studies that focus on information literacy as a set of skills (American Library Association, 1989; Smith, 2013; Williams & Wavell, 2006), critical information literacy focuses "less on information transfer and more on developing critical consciousness in students" so they can question the world around them (Elmborg, 2006, p. 193). In addition, I also used Bruce's seven faces of information literacy to understand teachers' conception and practice of information literacy. Together, they provide a way of analyzing a teacher's belief and determining whether they are critical in their teaching of information literacy or whether they may ascribe to reinforcing search skills. Using these

theories, I also explored the documents and worksheets that teachers assigned and sought to determine any relationship between teachers' understanding of information literacy and their practice.

Historical and Evolving Definitions of Information Literacy

There have been various definitions of information literacy throughout the years, with the definition fluctuating between an emphasis on practical skills versus a conceptual understanding of information literacy. The term *information literacy*, coined by Paul Zurkowski in 1974, referred to information literates as having learned the “techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information solutions to their problems” (p. 9). Two years after Zurkowski presented his own definition, Burchinal (1976) stated that an information literate person is able to “efficiently and effectively locate and use information needed for problem-solving and decision-making” (p. 8). In that same year, Owens (1976) stated that information literacy is not just about gathering information effectively, but is “needed to guarantee the survival of democratic institutions” (p. 27). Zurkowski and Burchinal emphasized skills and techniques, rather than the larger importance of managing and understanding the information we find. In contrast, Owens's definition expanded the skill of collecting information to applying those skills in real-life situations, such as being able to use the skill of finding information in order to become responsible citizens and voters. Through his definition, Owens emphasized a conceptual understanding of information literacy and how it can improve society.

The definition of information literacy continued to change in the 1980s due to an emphasis on computer technology as a tool for accessing large amounts of information (Behrens, 1994; Eisenberg et al., 2004) and making information literacy skills applicable in

real life and in the classroom. Kuhlthau (1987) believed that information literacy is related to functional literacy and that it involves the “ability to read and use information essential for everyday life” (p. 2). This continued the theme that information literacy should be practical because a person can encounter information in a variety of ways and needs to be able to organize and use it daily. To emphasize the connection between the classroom and everyday life, the president of the American Library Association (ALA) developed a committee on information literacy in 1987 called “The Presidential Committee on Information Literacy.” The committee’s inception was due to a need to provide equitable access and to encourage the development of students in the Information Age (ALA, 1998). The committee’s purpose was to define information literacy and the benefits for students in learning these skills, design a model of learning information literacy, and determine the importance of developing information literacy training for teachers (ALA, 1998). The committee defined an information literate person as someone who “must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ALA, 1989, p. 1). This definition further added to Owens’s definition of informed citizenry, indicating that information literacy is needed in order to address “long-standing social and economic inequities” (ALA, 1989, p. 1). The addition described information literacy skills as necessary to preparing students for lifelong learning so that they can use the skills to improve job opportunities or education (ALA, 1989). Doyle’s (1992) definition of information literacy, which is “the ability to access, evaluate, and use information from a variety of sources” (p. 1), stressed the need for students to “learn how to learn” (p. 1) in order to be informed citizens. These definitions indicate that learning information literacy surpasses just

mastering curriculum in the classroom; information literate people will continue to learn throughout their lives, any time they encounter information (ALA, 2012).

More recently, researchers have considered critical perspectives on information literacy. Doug Kellner and Jeff Share (2019) explained that their conception of critical media literacy “aims to *expand* [the] understanding of literacy to include reading and writing of all types of texts, as well as to *deepen* analysis to more critical levels that examine the relationships between media and audiences, information and power” (p. 8). A critical media lens will urge students to consider where information comes from and who is disseminating that information and encourage them to make connections and examine how that information may reinforce stereotypes or oppressive structures. Due to the popularity of social media, *metaliteracy*, a term introduced by Thomas Mackey and Trudi Jacobson (2014), uses the foundation of information literacy to incorporate other types of literacies such as media literacy, digital literacy, cyber literacy, visual literacy, mobile literacy, critical literacy, health literacy, trans literacy, new media literacy, and ICT (information, communication, technology) fluency. Mackey and Jacobson (2014) defined a metaliterate student as someone who can “understand their existing literacy strengths and areas for improvement and make decisions about their learning” (p. 2). This definition, along with Kellner and Share’s definition, emphasizes the agency of the students and encourages them not only to reflect on the information they find, but also to assess their own learning.

Due to the emphasis on students as active learners, and as a result of new technology in the 21st century, schools focused on teaching students to be more than just consumers of information, and school education standards reflect this notion (Kellner & Share, 2019; National Governors Association Center for Best Practices & Council of Chief State School

Officers, 2010). At the secondary level, the Common Core Standards, a set of standards that all states adhere to in order to prepare students for higher education and life, institute a set of writing standards to build research skills and present knowledge. Starting in the first grade, students learn to gather information from both print and online sources, conduct searches, and evaluate the information they find (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). The addition of these standards indicates how important information literacy skills are in education, and those skills should be built on and recur for each grade level in K–12 education.

Furthermore, the Association of College and Research Libraries (ACRL) also adopted new information literacy frameworks for higher education. These frames include the following:

1. Authority Is Constructed and Contextual
2. Information Creation as a Process
3. Information Has Value
4. Research as Inquiry
5. Scholarship as Conversation
6. Searching as Strategic Exploration

The ACRL (2016) defined information as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (p. 8). These frameworks are guides for instructors to design their curriculum and assignments, situating the students as lifelong learners and creators of information as well as consumers.

Teachers' Definitions of Information Literacy

According to the literature, teachers do not have a common definition of information literacy (Smith, 2013; Williams & Wavell, 2006). Research has shown that there is a lack of consensus about teachers' understanding of information literacy skills (Probert, 2009; Smith, 2013; Williams & Wavell, 2006). A study of eight teachers by Smith (2013) showed that teachers may define information largely as a general understanding of literacy and information skills, or as a specific set of skills such as locating information. Smith found that teachers believed students' information literacy skills were high, though they stated that the development of the skills depended on the needs of the students. Those who were in higher academic classes were taught in-depth skills for academic research, while those in remedial classes were taught the skills to look up information in everyday life (Smith, 2013). Other studies have shown that students who are enrolled in honors or college prep courses tend to have higher levels of information literacy skills (Corral, 2019; Fabbi, 2015). However, teachers in Smith's study could not clearly explain how they incorporate information literacy into the curriculum, indicating that they believe students are acquiring the skills simply by completing activities and lessons (Smith, 2013).

Yevelson-Shorsher and Bronstein (2018) interviewed 10 faculty members at a university in Israel who believed that their own lack of knowledge about information literacy may lead to their students having a more difficult time developing these information literacy skills (Yevelson-Shorsher & Bronstein, 2018). In this particular study, researchers also interviewed 15 college students, who identified information literacy as finding the right search terms, using the library, or developing search skills rather than depending on the teacher to upload sources (Yevelson-Shorsher & Bronstein, 2018). This lack of consensus

about definitions and skills indicates that, based on teachers' beliefs, students experience a wide range of rigor and assignments in the classroom.

Some teachers' definitions of information literacy are tied directly to being able to teach students procedural steps or skills. Williams and Wavell (2007) conducted a study of 31 teachers, who indicated that they view information literacy as a set of skills and processes, such as reading skills where students can skim, find the main ideas, or learn how to locate information in libraries or on search engines. There are studies that indicate that students who are deficient in reading skills have the most difficulty with obtaining information literacy skills (Abimbola, 2010; Bussert-Webb and Henry, 2016). Though students may have access to a library at their school, many students have low reading skills and they find reading boring and take a long time to read and comprehend texts (Abimbola, 2010). Bussert-Webb and Henry, 2016, believes that digital literacy can improve literacy overall, as students need to be able to read to locate and evaluate information online. These studies show a need to engage students in reading, and to also connect what they learn in class to the development of information literacy, an ongoing process. However, teachers "tended to discuss information literacy development as separate from subject content and did not necessarily connect the development of subject knowledge with information literacy" (Williams & Wavell, 2007, p. 209). If students cannot connect the learning of information literacy beyond solely skills, they will not know how to apply the skills to be successful when searching and learning independently (Williams & Wavell, 2007).

Similarly, Yu et al. (2016) found that the teachers defined information literacy as being able to find information, being competent in using the computer, being able to complete a research project, and becoming lifelong learners (Yu et al., 2016). Teachers also

defined information literacy as being able to find information, being able to use various sources, or simply developing computer skills (Yu et al., 2016). Teachers who subscribe to such definitions instruct students by providing them with sources, reminding them of the requirements to evaluate sources, providing keywords, and encouraging students to find sources on their own (Yu et al., 2016). Teachers who define information literacy as a research experience or as generating new knowledge will encourage students to explore different searching techniques and provide more “facilitating/coaching” (Yu et al., 2016, p. 61). In other words, such teachers will offer attention and conversation that personalizes the instruction to the students’ needs.

How Do Teachers Teach Information Literacy?

Search, Search, and Search Some More

Although information literacy is important, research has shown teachers are instructing students more often to practice web searching rather than higher levels of information literacy skills. Often, this will ensure that students are proficient at consuming information but not experienced in evaluating the information critically (Hargittai & Young, 2012; Mackey & Jacobson, 2014). Fidel et al. (1999) worked with high school students to observe their online searching behaviors. They determined that, without formal training, students were frustrated and would complete only the basics of the assignments, filling out a worksheet. They rarely planned ahead to find information and were reactive because the continuation of their search was dictated by what they saw online (Fidel et al., 1999). Moreover, so much information often overwhelmed students, which led them to over-rely on a single source or be unable to synthesize information in a coherent manner (Dipetso & Moahi, 2019).

Lurie and Mustafaraj (2018) investigated how 30 students evaluated news sources they were unfamiliar with and how they used the Google search engine results page to determine the credibility of these news websites. However, the students' actual behavior when web searching and performing lateral reading indicated that they could not determine credibility when they viewed the knowledge panels, could not distinguish between a fake and a legitimate site when looking at a search engine results page, and were unfamiliar with domain names (Lurie & Mustafaraj, 2018). In a 2009 study of three 11th- and 12th-grade biology classes, Julien and Barker found that students generally use Google for educational and personal purposes, as it is easily accessible. However, the study revealed that students' skills at searching were "unsophisticated" (Julien & Barker, 2009, p. 3), with students simply entering a question into the search box, raking over the first few sites that appeared, and checking only the higher-ranking sites for uniformity.

Yevelson-Shorsher and Bronstein's 2018 study, which included interviews with 15 college students, determined that students admitted to finding it difficult to know how to start searching, and that they feel embarrassed about their inability to use the library sources and limited searching skills (Yevelson-Shorsher & Bronstein, 2018). They could not search beyond the resources that their teacher provided for them and lacked knowledge about how to access sources, and they stated an introductory tutorial was insufficient in teaching them how to search properly (Yevelson-Shorsher & Bronstein, 2018). Students' emphasis on searching, and instructors teaching only search skills without a critical perspective, will signal to students that "research [is] more like a scavenger hunt than a critical, self-reflective process" (Jacobs & Jacobs, 2009, p. 75).

Is It Real? Can I Believe This Content?

Students' lack of skills in distinguishing between fake and authentic information further confirms their status as consumers of information rather than critical thinkers. Traditionally, students are taught a range of questions or “rules they can apply to a document” in order to determine its reliability (Harouni, 2009, p. 479). Harouni (2009) found that these questions are mechanical and do not help students become invested in the information they found. In fact, the researcher observed that students used these questions only when prompted, and it does not help improve students' inquiry process (Harouni, 2009). Using these questions and applying a rules-based method may be efficient, but it “oversimplifies” (p. 481) the issue of recognizing and questioning controversial sources of information and the statements they impart (Harouni, 2009). While teachers may teach web searching and lateral reading, students still find it difficult to evaluate knowledge panels and judge credibility based on search rankings, and they may believe that seeing social media reports increases the credibility of the sources (Lurie & Mustafaraj, 2018). Users cannot just acquire skills; they must “learn to have the habit of questioning the origins, interests, and contexts of information production” (Brisola & Doyle, 2019, p. 282) and must continually work to become critical and information literate.

When looking up information, students often go to Google to find answers or solutions because it is easy and convenient (Connaway et al., 2011; Head, 2013), which closely aligns with findings from Julien and Barker's (2009) study. Head (2013) reported that students tend to stick to “tried and true” (p. 475) methods, such as search engines like Google and Wikipedia, to access information. For course-related research sources, students will first turn to teacher-provided course readings, then search engines, then scholarly research

databases such as JSTOR (Head, 2013). Students are taught that academic journals and books are reliable because of “checks and balances” (Harouni, 2009, p. 480) that certify the content, but this only simplifies the evaluating process, and students are not able to critique all other information they find online.

Noble (2018) pointed out that “citation analysis” (p. 40) helped to determine whether an article is of importance to a scholarly community, and when an article or document is cited many times, there is a greater possibility of it showing up in a search and seeming to be legitimate. However, documents can show up first on a search because of keyword manipulation or having many pages that reference them (Noble, 2018), so students must be vigilant in evaluating this information. Students who do not have strong evaluation skills that focus on content will continue to search for sources that do not answer their research question, or they may be evaluating features of sources (such as author or venue of publication) that do not lead them to relevant sources (Braasch et al., 2009; Cheney, 2010).

Furthermore, some students mistakenly believe that if a website is indexed, then the information is credible (Lorenzen, 2001). In fact, major news outlets and information are orchestrated to benefit the elites and surface to the top of a web search results page over lesser-known alternative blogs or news sites (Noble, 2018). Users even encounter information on social media sites such as Facebook, which utilize some of their features to make stories look credible (Lurie & Mustafaraj, 2018). According to a Pew Research Center study, 23% of adults indicated that they had shared fake news knowingly or unknowingly (Bartel et al., 2016), which further reinforces the importance of fostering critical information literacy skills in students in order for them to make informed decisions.

Materials and Assignments

In terms of curriculum materials, research has suggested that for many teachers, teaching information literacy is easier if there are worksheets involved; it is a quick way to assess students' knowledge and have something for them to produce (Fidel et al., 1999; Julien & Barker, 2009). Research also has shown that teachers are much more likely to use worksheets and questions addressing their search strategies in order to teach students information literacy, though these worksheets are not effective (Fidel et al., 1999; Julien & Barker, 2009; Ruthven et al., 2005; Walraven et al., 2013). Some worksheets were too complicated and long, and students did not want to fill them out (Walraven et al., 2013), while others were too broad and did not give enough structure for students to understand the task (Ruthven et al., 2005). Walraven et al. (2013) conducted a study of four teachers from three different secondary schools to determine how they evaluated their 101 students' search results and the information the students found online. Though teachers used short worksheets that asked students to reflect on their search, they were not consistent in asking students to reflect on the process. Teachers may not have encouraged students to complete the reflection, or students may have filled it out partially or incorrectly (Walraven et al., 2013).

On the other hand, assignments can be beneficial to students by providing them with guidance and a process for understanding the information they find. Bowers et al.'s (2009) study of librarians and faculty who came together to teach research in a business program stated that when professors provided a workbook with clear questions that lead students to finding answers about the topic, gave suggestions about what students can look up for their research project, and are encouraged to work with librarians, there are more positive results. The professors gave feedback, and students were also instructed to write a reflection on their

search experience, the information they encountered, and their writing experience (Bowers et al., 2009). The results of this project indicated that the assignments and professional help allowed students to communicate effectively in writing (and in using appropriate citations, formatting content, and writing about the content), and they felt very capable in accessing and using information, both electronic and printed (Bowers et al., 2009). However, students still had trouble evaluating sources, which the study determined was due to professors having to teach this concept in a limited time: one semester (Bowers et al., 2009).

Warschauer's (2007) study of 10 K–12 schools that utilized one-to-one laptops in the classroom showed that learning the research process as early as fifth grade and utilizing worksheets was beneficial. While students utilized the laptops to search for information, the librarian also created a bibliography where students entered their citation for their sources, wrote down keywords they used, and made notes of the information they found (Warschauer, 2007). Students also had access to more academic sources such as encyclopedias and online databases, but students used these forms for both print and online sources to track their information (Warschauer, 2007). Beyond just finding information, using a laptop and participating in the inquiry process help students to apply their skills and learn interactively (Warschauer, 2007).

Head and Eisenberg (2010) added to the literature by discussing the properties that handouts have in common. They concluded that handouts and assignments contain a lack of focus on substantive or pedagogical content and instead focus on reminders to produce a paper with a specific structure, APA format, and other citation needs. Of the handouts they examined, 61% included reminders to produce a paper with a specific structure. Additionally, 60% of the handouts also recommended students use the campus library, while only 42% of

the handouts suggested online library sources. This can have negative consequences, as fewer recommendations for students using open web sources may prevent opportunities for students to practice source evaluation and may lead them to choose access over quality (Correll, 2019). Most importantly, Head and Eisenberg (2010) found that 25% of the sources suggested reviewing authority (author credentials), while 11% suggested reviewing timeliness (publication date) when evaluating sources. This study reiterated the idea that “traditionally taught, the research paper places its focus on format and final product, on sources and citations instead of intellectual process” (Norgaard, 2003, p. 222).

According to Lowe et al. (2016), the less sequenced and detailed a document is, the better the results. Their study looked at 520 assignment prompts in a first-year seminar course that emphasized writing and research skills (Lowe et al., 2016). They found that students fared better on their research papers when they could pick a topic of their choice, and prompts that gave moderate directions were more successful than those that gave too many (Lowe et al., 2016). The researchers hypothesized that prompts that have too much information may confuse a student, especially where there may be other “meaningful interactions and activities” (Lowe et al., 2016, pg. 132) in the course that would better explain difficult research concepts, such as teacher-student meetings and coaching, writing tutors, or time to write and research (Lowe et al., 2016; Mokhtar et al., 2007). Students who need additional support should be given scaffolding and modeling (Yu et al., 2018). The modeling approach, as shown in Yu et al. (2018), includes demonstrating how to browse and access information from books, encyclopedias, journals, and magazines, and this teaching technique should be used when students are accessing information and synthesizing what they found. When teachers guide students through critically evaluating information, students

are exposed to more sources and have more knowledge about their research topics (Leeder & Shah, 2016).

Prompts that have too much detail may focus more on the product of a research paper than the process or conceptual learning. Head and Eisenberg (2010) found that 83% of the handouts they analyzed called for an individually written research paper. Gross and Latham's (2009) study of 20 undergraduate students determined that they see information literacy as product oriented, a "formalized, constrained process" (p. 342) that can help them capitalize on a higher grade, rather than a process of learning. Teachers who rely heavily on discussing the project guidelines may signal to the students that it is most important to get good grades and meet all the requirements (Yu et al., 2018). This in turn may encourage students to make decisions that would be most convenient and easy to complete their work (Yu et. al., 2018).

Often, teachers do not explicitly teach students how to evaluate sources, even though they know it is important, because their own knowledge is merely theoretical, they have little confidence in their own abilities to teach such skills, or they believe students are learning these skills throughout the curriculum. Togia et al. (2015) found that 21 teachers generally assigned work of different complexity (such as finding information about topics or people, finding resolutions, or synthesizing sources), rather than the traditional methods of textbooks, but did not teach evaluating sources explicitly, because most of their knowledge was "empirical" (pg. 232). Some teachers felt such time pressure to get through the curriculum content that they may not teach evaluation, and provided reliable sources to students rather than helping them identify inaccurate information (Williams & Wavell, 2006). Most evaluation instruction centered on URL status or author credibility to evaluate sources (Togia et al., 2015). This corresponds with Burton and Chadwick's (2000) study, which also

indicated that teachers assigned research papers without educating students about source evaluation. Finally, some teachers believed students may already be learning information literacy skills in other courses, so they may not reinforce these skills (Yevelson-Shorsher and Bronstein, 2018).

Curriculum and Instruction

Many teachers find that utilizing an acronym to teach research skills gives students more confidence and helps them understand the different tasks that are required of them when completing a research assignment. Herring (2006) provided students with a PLUS booklet, which stands for purpose, location, use, and self-evaluation. Students were required to find a topic, brainstorm, complete a concept map, and read some preliminary articles before writing a paper. The teachers concluded that the iterative process resulted in students being more adept at their analysis and improving their note-taking skills. The teachers anecdotally confirmed that students can transfer information literacy skills across the subjects and grades when using this model.

Wolf et al. (2003) utilized the Big 6 model, developed by Eisenberg and Berkowitz in 1990, to help guide students' thinking during research activities, which required them to complete six steps: task information, information-seeking strategies, location and access, use of information, synthesis, and evaluation. Wolf et al. (2013) found that when students follow the Big 6 model, they use it as a metacognitive scaffold that assists with determining which information sources to use to solve a problem, identifying whether a source contains information they need, summarizing skills, and evaluating skills, just to name a few. With the Big 6 model, students were able to access complex materials and also plan the next steps in their research process.

Meloche et al. (2020) introduced students to the acronym CRAAP, which stands for currency, relevance, authority accuracy, and purpose. They also taught students about a list of critical literacy guiding questions that helps students to evaluate the information they find. The critical literacy guiding questions focused on the different perspectives, biases, and assumptions in a text. Meloche et al. concluded that some students thought the CRAAP test was tedious and used it to superficially evaluate sources without a critical lens in order to finish the assignment. While some students were able to understand how power and perspective were reflected in the critical guiding questions, the teacher did state that many students did not achieve a deep level of critical evaluation and could have benefited from learning these skills earlier in the year (Meloche et al., 2020). These findings were mixed and suggested that some students may use the acronyms to help them go through the process of a research paper, while some students simply use acronyms as a checklist to complete assignments (Meloche et al., 2020).

Recent research has examined how critical information literacy is practiced and carried out in the curriculum, especially by teacher librarians. The teacher librarian is one who possess both a California teaching credential and a California Teacher Librarian Services credential (California State Board of Education, 2011). According to the Model School Library Standards for Public Schools (2011), there should be at least one full time credentialed teacher librarian per 785 students. In 2020-2021, there were only 621 school librarians in the state of California (National Center for Education Statistics, 2021), with one teacher librarian per 9,667 students (Lambert, 2022). California has low professional library staffing numbers, with only 86% of public schools reporting they have classified staff in the

library and 9% of schools having a credentialed teacher librarian (Department of Education, 2022).

Tewell's 2018 study showed that it is, in fact, beneficial for schools to employ teacher librarians to instruct critical information literacy. The 13 librarians in Tewell's (2018) study indicated that they teach critical information literacy through discussing classification systems, showing students how to search, discussing academic conventions and access, and talking to students about corporate and alternative media. Teaching students to question how knowledge is presented, who has access to academic information, the motives of corporate media, or counterculture media are all ways to challenge oppression (Tewell, 2018). However, the librarians also noted that much of this teaching is limited, because there is pressure from faculty to show students only how to use the library sources, not necessarily to provide a critical perspective. In terms of teaching methods, librarians employed discussion and dialogue, encouraged group work, chose to forgo the database demonstration to promote student agency and contributions, asked students to reflect on the lesson and its importance, and incorporated problem-posing pedagogy by reflecting on a real-life problem as strategies to allow students to develop a critical consciousness (Tewell, 2018). Tewell determined that time constraints, student expectations (recitation instead of critical discussion), teaching only the basics (like showing a database), and institutional roadblocks (like those who opposed critical teaching) all present challenges to teaching critical information literacy.

McDonough (2014) synthesized and analyzed 42 studies to determine critical information literacy in practice. McDonough aimed to determine which content topics and teaching pedagogies librarians used to include a critical perspective when teaching information literacy. The analysis of the studies indicated librarians should teach about

information and avoid judgments about where the sources come from, should not limit sources but should use ones that students are familiar with, and should dialogue about information and its uses. In terms of pedagogical content, librarians should build on students' prior knowledge, promote student choice, use topics that are meaningful to students' lives, use accessible language, and design instruction that is based on real-life problems or questions. These studies indicated that there are a variety of ways to teach critical information literacy, but a common thread is not teaching students how or where to access information, but to contextualize the information they find and to create assignments that are relatable and meaningful to students' lives (McDonough, 2014).

My Definition of Information Literacy

In this study, my definition of information literacy reflected the influences of critical information literacy and Bruce's seven faces of information literacy. I defined *information* not as an isolated and apolitical thing that students consume (Elmborg, 2006), but as sources that students analyze and produce that reflect the context of their own lives and experiences. I defined *information literacy* as being able to access and evaluate information (ALA, 1989; Kuhlthau, 1987; Zurkowski, 1974), as well as being critical of how people and events are represented. Last, I defined the word *critical* as the ability for students to examine the sources they read, and to evaluate and articulate how the information may contain bias or misrepresentation or reinforce dominant ideas that are exclusive or nonreflective of student lives. Being critical of information will allow students to become self-actualized and form a consciousness that will help them recognize and resist systems of dominance (Freire, 2007; hooks, 1994).

Summary

It is necessary to support students in learning information literacy because it will provide them skills to navigate the internet, to search for information to problem solve, and to evaluate the information they find online, which are skills they need in their personal and professional lives (Breivik, 2005; Eisenberg et al., 2004; Head, 2012; Smith, 2013). Findings from the literature suggested that when information literacy is being taught in the classroom, it is taught in a cursory and disjointed manner (Smith, 2013; Walraven et al., 2013). The emphasis on worksheets, skills development that almost centers on computer literacy instead, and product rather than the process of researching and evaluating shows a limited understanding of information literacy. Information literacy is not just gathering information to complete an assignment; it must incorporate analysis and inquiry to examine how power is enacted through and by the information presented. This study sought to explore teachers' operational definitions of information literacy, examine how that definition influences teachers' instructional practices, and provide recommendations for instructors. Hence, this study investigated how teachers support students' development of information literacy skills in order to strengthen students' ability to be critical consumers and producers of information.

CHAPTER THREE: METHODOLOGY

Information literacy skills are essential in modern society, as they enable students to think critically, problem solve, and share information with the world (Mackey & Jacobson, 2014). This study investigated teachers' understanding of information literacy and how they teach information literacy in the classroom. Because teachers have the autonomy to create daily lesson plans, investigating the lessons and assignments that teachers create can provide insight regarding their understanding of information literacy and their decision-making skills, which can improve curriculum design in the future. Additionally, exploring the recommendations that teachers provide can give insight into how teachers and the district can best support information literacy instruction. Last, due to teachers' experiences with teaching information literacy, the feedback and recommendations they provide can help with future professional development opportunities.

Research Questions

1. What are high school teachers' understanding about information literacy?
2. In what ways do teachers incorporate information literacy into their instruction?
3. What recommendations do teachers have for teaching information literacy?

Research Design and Rationale

This qualitative methods study investigated teachers' understanding of information literacy skills, examined their pedagogical practices, explored their challenges, and provided recommendations they have for teachers who may want to teach these skills in the secondary classrooms. This study had a two-part data collection phase. In the first phase, I identified teachers via snowball sample to purposefully determine which teachers believed that they are teaching information literacy skills in their lessons so I could interview them for information-

rich data (Merriam & Tisdell, 2016). According to Creswell and Creswell (2018), the qualitative approach requires the researcher to understand a “social or human problem” (p. 4), collect data from participants, conduct inductive analysis to find codes and themes, and make meaning of the data. Because there is a lack of consensus about the term *information literacy* among teachers (Probert, 2009; Smith, 2013; Williams & Wavell, 2006), defining which skills are most pertinent for students to develop posed a challenge. Using this qualitative method allowed me to interview teachers about their understanding of information literacy and determine a possible shared understanding of the term. Qualitative data also allowed me to probe teachers about their lesson plans and the strategies they are using in the classroom.

The second phase of data collection came from document analysis. Using document analysis allowed me to triangulate my data and reduce bias (Bowen, 2009). I collected documents from participating teachers to understand how their definitions influence their strategies and activities in the secondary classroom. These documents included lesson plans, worksheets, or instructional materials that teachers provide to students. The data from the documents are an example of “text providing context” (Bowen, 2009, p. 29); looking at the quotes, excerpts, and images from the documents helped me align the definitions of the teachers to their beliefs about students’ skills and opportunities to evaluate sources, collaborate, and connect to students’ lives. Ultimately, document analysis allowed me to find additional data, identify questions on which I can follow up in future research, and track changes and development (Bowen, 2009) among the teachers’ understanding and actions in the classroom.

Data Collection Method Rationale

This study utilized in-depth 1:1 interviews with 15 teachers who were perceived to be incorporating information literacy lessons in their classroom. The semi-structured interview process lasted 60 minutes. During these interviews, I probed teachers' understanding of information literacy and how that understanding influenced the documents teachers assigned. My expectation was that this study would contribute to a uniform definition of information literacy and encourage teachers to focus on specific key skills and concepts. Additionally, I sought to discover the content that instructors teach about in the classroom and how they carry out their instruction.

I used semi-structured interviews to determine what information is the most useful and to stimulate views and opinions from the participants (Creswell & Creswell, 2018). Additionally, as our school was in distance learning instruction due to the COVID-19 pandemic and I could not physically observe a classroom, interviews provided historical information and allowed me to control the line of questioning, probing for in-depth experiences and responses (Creswell & Creswell, 2018). Interviews allow researchers like me to understand the interviewee's beliefs, motives, and decision-making process (Guest et al., 2013). For this reason, interviews were the best data collection method to understand how teachers articulate their beliefs about information literacy and explore how that understanding aligns with the skills they help students develop and the assignments they create.

The questions I asked pertained to the interviewees' understanding of information literacy and how they teach information literacy in the classroom. The critical information literacy theory and Bruce's seven faces of information literacy framework informed my

interview questions because I believe this theory and framework enhance the learning of information literacy skills. My interview questions probed for teachers' understanding of information literacy not only as being able to access, find, and evaluate information, but also as revolving around critical thinking, critically evaluating media for credibility or bias, and creating assignments that are connected and relevant to students' lived experiences.

Furthermore, as my interview questions revolved around how teachers instruct and plan their assignments, I probed for the various ways that teachers introduced information literacy as outlined by Bruce's seven faces of information literacy. Using Bruce's framework, I investigated the ways in which the teachers at my site taught information literacy.

Last, teachers submitted their documents—PowerPoints, worksheets, and assessments—which helped me to understand the strategies and resources teachers use. Document analysis enabled me to analyze the language and words participants use and to view documents they have deemed important (Creswell & Creswell, 2018). These classroom artifacts explained how teachers are engaging students in the classroom, which skills students are developing, and what instructional approaches teachers are taking. These documents did not include evidence of engagement or of how successful students will be at learning information literacy skills. However, these documents are suggestive of what teachers believe to be the most important skills to learn in terms of information literacy, which ultimately influences the teachers' instructional approaches and teaching objectives.

Recruitment

To select the 15 participants, I used the snowball sampling technique to generate a list of teachers who may have been teaching information literacy. I reached out to department chairs and literacy coaches from one district in order to identify the teacher participants. In

the secondary school system, department chairs and literacy coaches support teachers in lesson planning and may co-teach with a teacher or help analyze data and lessons. Therefore, they are also most likely to know which teachers are instructing students on information literacy in the classroom. This list was compiled with the help of these department chairs and coaches, and through my own personal knowledge and references. In my initial recruitment email, I asked potential interviewees if they were interested in participating in the study and also asked them to refer me to others who might teach information literacy in the classroom.

Access

The 2020–2021 school year was my seventh year teaching at Franklin High School (pseudonym). I have formed a close relationship with other teachers and leaders in my role as a teacher, course lead, and coordinator of an academy at my high school. As a result, I felt comfortable reaching out to my principal for approval and support. As a teacher leader at the school, I have worked with a variety of teachers to achieve Western Association of Schools and Colleges (WASC) accreditation, host numerous school events, and participate in different academies throughout my years at the school. I stressed the importance of my role as a graduate researcher and not as a friend or teacher colleague. The focus of my work was on information literacy skills and how they influence curricular and pedagogical strategies.

Due to the COVID-19 pandemic, the teachers were not instructing students during face-to-face instruction. All classes and professional development occurred through the platform Google Meet or Zoom Video Conferencing. While I was not able to see teachers physically, I conducted individual interviews via Zoom.

Strategies of Inquiry

Site Selection

This study took place at Franklin High School, a diverse, urban school district. Franklin is made up of a large percentage of students of color and English learners: During the 2020–2021 school year, 79.2% of students qualified for free and reduced-priced meals, and 17% of students were classified as English Learners (California Data Partnership, 2021). According to the California Department of Education (2021), Franklin High School’s student demographics for the 2020–2021 school year were 75.5% Hispanic, 14.8% African American, 3.4% Asian, 1.7% Pacific Islander, and 1.3% White students.

According to Franklin High School’s SBAC data, for the 2018–2019 school year, of the 1,857 enrolled students, specifically in the Research/Inquiry category, 29.98% of the students measured above standard, 50.37% were near standard, and 19.66% were below standard. With less than 30% of the students scoring above standard on the research and inquiry category, there is a need for students to improve their information literacy skills. Additionally, during a curriculum planning meeting with the dean of humanities from the local community college and our English department, the dean expressed that students have low information literacy skills when they matriculate into college. Further, in a faculty survey in 2018, 61% of the faculty disagreed with the statement that students have sufficient information literacy skills to finish an assignment (El Camino College, 2018). As a result, Franklin is intentionally incorporating information literacy skills into the curriculum in English classes. Each student must complete a research paper in each grade level, and students need to incorporate more sources as they advance through high school. As this was a new directive at the time of the study, and due to our site not having a direct definition of

information literacy, there was a need to explore teachers' understanding of information literacy and how it affects their curriculum and pedagogical strategies.

Data Collection Methods

I used interviews, asking participants to explain their understanding of information literacy and to share lessons they have used to teach information literacy skills in the classroom. I probed teachers for information such as how their lessons reflect critical thinking, how they teach students to evaluate for credibility or bias, and how their lessons reflect students' lived experiences or interests.

Document analysis yielded further data collection about how teachers are instructing students in the area of information literacy in the classroom. I considered the relationship between the teachers' understanding of information literacy and the content and format of the materials. Document analysis allowed me to analyze data that participants had created or modified and analyze the language and written evidence. It was an unobtrusive source of information that I could examine on my own time (Creswell, 2009).

Data Analysis Methods

Teacher Interviews

Teacher interviews were semi-structured, which allowed me to probe for further details, particularly to understand the ways teachers conceptualize information literacy and how they instruct students in the classroom. I asked teachers to expand on the lessons they used, particularly about the content they teach and the strategies they use in the classroom. This provided insight into the content in the curriculum, as well as the strategies that teachers use in the classroom. These questions helped to determine whether teachers are being critical

in teaching information literacy and identify the variety of ways students can experience information literacy, as described by Bruce.

All interviews were scheduled based on teacher availability and were conducted via Zoom. During each interview, I took notes on responses in order to follow up with probing questions specific to the participants' responses and documents. I transcribed all interviews through a transcribing site (Otter AI) in order to make sure that all the recordings were accurate. I shared each transcription with each interviewee to ensure accuracy of responses. In order to gather more reliable data, I transcribed and coded the interviews immediately after they were recorded (Merriam & Tisdell, 2016). I continued to analyze codes in order to identify themes shared across all interviews. I categorized the themes in Microsoft Excel and Max QDA (a qualitative platform), using a color coding system to group patterns, similarities, and evolving topics that emerged from the interviews.

I highlighted key words and phrases from my interviews that represented emerging themes. I sought to identify the ways in which teachers' responses aligned to critical information literacy (Elmborg, 2006; McDonough, 2014; Tewell, 2018) and Bruce's (1997) framework. I looked for codes such as critical thinking (Boon et al., 2007; Pickard et al., 2014; Webber et al., 2005; Yu et al., 2016), evaluating websites for credibility and bias (McGrew et al., 2018), and using students' real-life interests (McDonough, 2014; Tewell, 2018), as described in Chapter Two. I also coded for reports of teachers' explicit instructional practices such as the use of worksheets (Yu et al., 2016; Walraven et al., 2012), questioning (Cope, 2010; Harouni, 2009), and modeling (Yu et al., 2018). After doing my first round of coding, the codes of which initially came from the literature, I did a second round of coding, inductively, looking for emerging codes that might not have been described in the literature.

After the second round of coding, I created larger categories of codes and considered how the categories represented themes. This second cycle of coding required me to use skills such as “classifying, prioritizing, integrating, synthesizing, abstracting, conceptualizing, and theory building” from the data (Saldaña, 2013, p. 58). I then developed analytic memos that reflect the claims that I can make and the evidence to support my claims.

In my analytic memos, I reflected on my coding process, my code choices, and any emerging patterns, categories, themes, and concepts that I understood from my data (Saldaña, 2013). While my codes were significant to my study, so was the reflection on the meaning of these codes (Saldaña, 2013). For each of my research questions, I started a new Google Doc, wrote the claims I saw from my data, and then included the evidence from my data sources. I included multiple quotations from my interviews or examples from the document analysis. After collecting this evidence on the Google Doc, I included a written reflection for each claim. My reflection included how I personally related to the participant or their actions or how the evidence related to my research questions (Saldaña, 2013). Furthermore, I also wrote about how the evidence reflected my codes and justified my choice for these data, completing a “reality check” (Saldaña, 2013, p. 44) where I could reflect on my thinking and even come up with more refined codes. Last, in my analytic memo, I reflected on any emerging links or connections between codes, patterns, categories, or themes and on any problems with my study, such as personal or ethical issues (Saldaña, 2013). This process of writing the analytic memo helped me transition from coding to completing the formal write-up of my study (Saldaña, 2013).

Finally, I shared my coding categories as a form of member checking with a trusted colleague. I printed my interviews with my codes in order for my colleague to complete a

member check of my work. We calibrated our understanding of said themes to ensure that my findings reflected the literature and answered my research questions. For confidentiality, names and any identifying factors were removed to protect the anonymity of all interviewees.

Document Analysis

After each interview, I asked teachers to submit a document that engages students in information literacy. Teachers sent these documents through email or shared them through Google Drive. Documents produced by these teachers included outlines, directions for their projects, or step-by-step guides to searching in research databases or evaluating a website. I looked for evidence of teachers' understanding of information literacy by highlighting the directions that instructed students on how to search, annotating the assignment for concrete skills teachers were asking students to practice, and identifying the outcomes of the lessons. I coded the data by analyzing the teacher-created documents with Bruce's seven faces to determine the skills students were practicing and the outcomes of those information literacy skills.

Because my data came from multiple sources of data and multiple collection methods (Merriam & Tisdell, 2016), I was able to triangulate data sources specific to each teacher and across the teachers. I then compared the themes from the coding with the documents to see if there was alignment between what teachers say and what they do. For example, I compared codes and associated quotations from each individual teacher regarding their definition of information literacy and compared these with their instructional practices, as evidenced in their documents. I analyzed the data to see if there was alignment between the teachers' responses and their practices, and if so, how their responses and content and pedagogical

practices aligned with critical information literacy and Bruce's seven faces of information literacy.

Ethical Issues

Positionality

I positioned myself as a graduate researcher who was completing her dissertation, with an interest in information literacy acquisition and instructional strategies. In order to encourage participation, I informed teachers that I would not be reporting individual results to the administration, but rather would report on trends and share summarized findings of effective strategies to inform others. I made no judgments about teaching methods. Because few are pursuing a doctoral degree at my site or district, and we do not get many doctoral students coming to our site to do research, my position needed to be efficient and professional, so that any future researchers will feel welcomed into our school. I understood that the teachers I interviewed may have believed that I had some biases, as I am a teacher at the same site with an interest in information literacy. I had to make sure to be direct and objective in my questioning but also flexible enough to allow the participants to feel comfortable to participate in this dialectical process.

I offered my administrators and the participating teachers a summary of my findings while also protecting participant anonymity and confidentiality. I provided a brief summarized report of the teachers' definition of information literacy, the self-reported skills instructors are teaching students, examples of the resources utilized, and recommendations for teaching information literacy for other teachers and the district. I also sent an e-gift card to Amazon or Target and formal thank-you notes to each of my participants for their time.

Confidentiality

One ethical issue I encountered was protecting my colleagues' confidentiality. Interviews were conducted through the online platform Zoom, and participants were assured that their responses would not be heard by anyone other than the researcher. I stored the recordings and transcripts on a hard drive labeled with randomly selected pseudonyms. The recordings of the interviews were destroyed after the participants verified the accuracy of the interview transcript.

I gave the teachers in my study pseudonyms to protect their confidentiality so that they would feel more comfortable and be able to answer honestly and completely. The selected pseudonyms were randomized so that interviewees cannot be connected to this study and were used throughout the data analysis and findings section. I stored the tapes of the interviews and the data analysis in a locked room in my home. Participants' identifying information was not included anywhere in the write-up of my study. All electronic files were password protected and will be destroyed 2 years after the study to ensure participant confidentiality.

Credibility and Validity

In order for my study to have credibility and trustworthiness, I made sure to address any validity issues. There are two broad types of threats to validity—researcher bias and reactivity (Maxwell, 2013). In order to address researcher bias, I made sure to survey and interview diverse teachers and discuss the findings objectively. Although I had my own beliefs about and perceptions of the importance of information literacy skills, I needed to be impartial and make sure that I stated facts and explained ideas instead of making judgments. In order to prevent reactivity threats, I made sure to ask straightforward questions and make

my participants feel comfortable in sharing information. To make sure they felt comfortable, I stressed the importance of the confidentiality agreement and reiterated that our conversation would be kept classified. I also restated my role as a researcher and not as someone who would pass judgment about their teaching.

In order to increase credibility and validity, I conducted 60-minute individual interviews, followed by document analysis, to gather rich data. Rich data “are detailed and varied enough that they provide a full and revealing picture of what is going on” (Maxwell, 2013, p. 126). Taking detailed notes while individually interviewing teachers, recording the interviews, and transcribing and making sense of the notes helped me to capture the teachers’ work in the classroom. In addition, I included a transcript review to ensure that I captured the meaning of the data as intended by the teachers. I documented all I did to make sure that my findings came from systematic data and so that, in the process of listening to and reviewing my interviews as I conducted my research, I could find better ways to interview teachers.

Study Limitations

Because I conducted research at only one school site, my data may be applicable to teachers’ experiences from one diverse urban site, but not to a less diverse school, a rural or suburban school, or a higher-resourced diverse urban school. A limitation of using only one school site is that my data constituted a small sample with specific demographics. As such, the findings were not informed by the experiences of teachers from other schools within and outside of the district; therefore, my findings may not be beneficial to teachers beyond the target school. Using only one site or a small sample does not provide saturation or redundancy, so the data I gathered may be useful to only my own site and population.

Another study limitation was decreased teacher involvement because of the COVID-19 pandemic. Because all of our instruction and meetings, including resources and lessons, was shifted to online teaching, some teachers may have modified their curriculum and may not have included a research unit or had shortened lessons because of the revised bell schedule of online distance learning. A limitation of document analysis is the inability to determine the authenticity and accuracy of the documents. Teachers may have documents that are idealized rather than what they actually teach. Another disadvantage of document analysis is that it may be incomplete or inauthentic or may not address the topic of information literacy, although the participants may insist that it does.

A benefit of conducting individual interviews was confidentiality and trust for the participants. Teachers felt comfortable being able to give their true opinions without fear of others judging them. Collecting documents for analysis gives researchers a primary source of documents that may provide descriptive information, confirm or advance new theories about information literacy, and provide historical understanding of the topic from the teachers' perspective. The data from the documents provide stability, because the documents would have been used at this point in time.

An advantage of collecting data at one site is that there is a controlled sample, where teachers experience the same internal forces such as district teaching policies, student demographics, and maybe even similar teaching strategies. As someone who has worked in this district for the last 7 years, I also feel a vested interest because the information may inform the community I work with each day and may help to support my students and colleagues in the classroom.

Summary

To investigate teachers' understanding of information literacy and how it affects their curricular and pedagogical instruction, I conducted a qualitative study on a secondary urban high school site. The study included individual interviews and document analysis. The document analysis helped to identify what skills are most important to teachers and how they are teaching those skills to the students. I relied on my relationship with the teachers at my site to gain trust for interviews. At our district, where there is a push to include information literacy in the curriculum, analyzing the work done at my site may create a blueprint for other sites to change or modify their instructional practices.

CHAPTER FOUR: FINDINGS

In this qualitative methods study, I explored how teachers define information literacy and how they incorporate their beliefs about information literacy into their pedagogical and curriculum decisions. In addition, I also completed a document analysis to understand how teachers integrate information literacy into their classroom assignments. This chapter represents my interview and document data analysis to answer the following research questions:

1. What are high school teachers' understanding about information literacy?
2. In what ways do teachers incorporate information literacy into their instruction?
3. What recommendations do teachers have for teaching information literacy?

Participants

I conducted 15 interviews with high school teachers at my school site, Franklin High School (pseudonym) in Southern California. The interviews allowed for a thorough exploration of the first research question, regarding teachers' understanding of information literacy, and helped to determine how teachers define information literacy. While I will not detail the teachers' backgrounds, it is important to note their demographics to provide context on the study participants. The key demographics of the 15 teachers are listed in Table 1.

Table 1*Demographic Characteristics of the High School Teacher Interview Participants (n = 15)*

Characteristic	<i>n</i>	%
Years in profession		
1–5 years	2	13.0
6–10 years	7	46.7
11–15 years	2	13.0
16+ years	4	26.7
Gender		
Female	10	67
Male	5	33
Racial/ethnic identity		
Asian American	6	40
Hispanic, Latino/a/x, or of Spanish origin	4	26.7
White	2	13
African American	1	6.7
Biracial	2	13
Subjects taught		
English	10	66.7
History	3	20
Science	1	6.7
AVID	1	6.7

Of those who responded, the majority were in the middle of their career, female and people of color, teaching in the humanities. Participants taught a variety of subjects; 10 teachers taught English, three teachers taught history, one teacher taught science (specifically

chemistry and environmental science), and one teacher taught AVID (Advancement Via Individual Determination, an elective course). I conducted a snowball sampling of teachers at Franklin High School in order to determine participants for this project; therefore, there was a diverse group of participants across many fields of study.

This study sought participants with diverse experiences and backgrounds. The study participants' diversity was essential to identifying common patterns and definitions of information literacy, regardless of the years and subjects the participants teach. I understand that teachers may have common knowledge even though they may not work together. Additionally, this study may serve to strengthen information literacy awareness at the school site.

Findings Related to Research Questions

In this section, I present the findings for each research question. Results from the qualitative interviews addressed research questions 1, 2, and 3. Additionally, I completed document analysis of the assignments and worksheets that teachers sent to me to answer Research Question 2.

Findings for Research Question 1

Research Question 1 was "What are high school teachers' understanding about information literacy?" I found that teachers have individual definitions of information literacy based on their own experiences. Overall, I found four major definitions that stemmed from the high school teacher interviews. I provide examples of each major definition in the following sections.

Definition 1: Information Literacy as Finding Information and Evaluating for Credibility

In general, eight out of 15 teachers defined information literacy as finding information and being able to evaluate for credibility. One English teacher explained, “To my understanding, [being information literate] is being able to navigate internet sources, and to be able to differentiate the different types of information that’s out there and know how to select a reliable source.” Another English teacher stated, “It’s the ability to discern whatever information that you need, including credible sources and biased media.” This definition of finding information was extended to include not just informational text sources, but also media. One English teacher believed that informational literacy was the aspect of finding information that they can trust and emphasized the authority of the sources: “Information literacy is knowing about where your information comes from. The sources and who the authors are, where the source comes from, and any biases that might come with that.” This definition focused on finding information but also on being able to discern whether the source is credible.

Another English teacher said, “Information literacy is being able to take information given to you and evaluate its credibility.” Yet another English teacher said that information literacy is “the ability to seek and find the information that is needed and understanding how to delineate between credible and noncredible sources.” Credibility was a prominent component of these definitions, with teachers stressing that the ability to access quality and reliable information is a crucial part of being information literate. In addition, two teachers defined information literacy as accessing credible information, but also being able to produce information. One English teacher said, “Informational literacy is the ability to evaluate, read, and produce information that is credible, that is reliable.”

The AVID teacher reiterated this idea of production by defining information literate students as being “able to look at [and] evaluate sources, [to] understand bias within sources. And being able to disseminate information from a source into their own words.” In order for students to move on to production, they need first to evaluate the information they encounter. Based on this participant pool, a majority (53%) of teachers interviewed stated that in general, their definition of information literacy is the act of finding information and evaluating for credibility. The emphasis on skills-based information literacy instruction is similar to the definitions of information set out by Zurkowski and the Association of College and Research Libraries, which is a division of the American Library Association.

Definition 2: Information Literacy as an Inquiry Process

Overall, three of 15 teachers defined information literacy as a process in which students collect ideas about a topic or question they are interested in and then use that curiosity about the topic to launch an inquiry process that will help them find the answers to or different perspectives on those questions. One English teacher explained,

For me, it relates to the idea of idea gathering, idea collecting, that starts and stem from an inquiry process or what I call or reference students as... the seeds [that] came from either curiosity or a need or a desire to learn and investigate on a topic or idea.

This teacher stressed the process of finding and investigating a topic of the student’s curiosity, rather than emphasizing practical skills. Another English teacher explained, “We usually use it in the classroom, when we’re doing topics, like usually information literacy revolves around an essential question, and what we’re trying to answer and looking at different perspectives, to inform our opinions about the essential question.” This definition emphasized students’ experience of exploring from different angles to arrive at a conclusion. Last, one English teacher said,

Information literacy for me and for my students is the ability to critically think about an essential question by assessing what [they] want to know, evaluating and conducting research to develop a position on something which hopefully develops into an argumentative thesis in the classroom supported with relevant evidence.

These three teachers believed that information literacy is not just isolated skills, but a process by which students arrive at an answer to a question they were interested in learning. This view of information corresponded with Elmborg's view of information literacy as a process in which students use information to make new knowledge (Elmborg, 2006). In answering a question of their interest, students are invested and will be able to construct and make meaning of information they find.

Definition 3: Information Literacy as Learning to Read

Overall, two of 15 teachers defined information literacy as being able to read, and using those reading skills to understand the information they encounter. Students then use those reading skills to help them complete research. One science teacher answered that information literacy is "learning to read. And I mean, using reading and writing to research." A history teacher explained, "Literacy is like being able to read, write, and comprehend. So, I thought it was just being able to read to kind of understand and comprehend information you find." This definition emphasized students' comprehension of the information they read in order to make sense of what students consume. This definition matched with Kuhlthau's (1987) beliefs that information literacy is about functional literacy and being able to use these skills in everyday life.

Definition 4: Information Literacy as Using Information to Explain Your Ideas

Finally, two out of 15 teachers believed that information literacy was students' ability to analyze the information they find. Teachers placed emphasis on students being able to critically analyze, rather than the process by which they found the information. One history

teacher explained, “Information literacy is the ability to research, identify, and critically analyze information and articulate it to support or change positions.” According to this definition, information should be analyzed and utilized to inform others. Moreover, another history teacher indicated that information literacy is “taking research, analyzing the information, and then applying that information into an argument or type of essay.” This teacher indicated that an information literate student should be able to use the information they encounter to present new ideas and create a product for class.

Overall, based on the study participants, teachers had different interpretations of the definition of information literacy. These teachers’ definitions are consistent with Smith (2013) and Williams and Wavell (2007), whose studies showed there was a lack of consensus about teachers’ definition of information literacy. However, 53% of the teachers agreed that information literacy was finding information and evaluating for credibility, and that skills-based strategies were something students must learn in order to be information literate. This again corroborated with Smith (2013) and Williams and Wavell (2007), who stated that teachers’ definitions of information literacy are more about skills development. Overall, the teachers in this study typically defined information literacy as a set of skills students master; however, three other definitions arose among the participants. Identifying teachers’ understanding of information literacy helps us to better understand how they implement instruction in the classroom.

Findings for Research Question 2

Research Question 2 was “In what ways do teachers incorporate information literacy into their instruction?” Research Question 2 delves into understanding how teachers are instructing students about information literacy, in both content and instructional design.

During the teacher interviews, I asked teachers to discuss a lesson on information literacy in their classroom, focusing on both the content and the purpose of the lesson and how they carried out instruction. A synthesis of the data interviews revealed themes from teaching content and instructional practices, and the following emerged most frequently throughout the data.

Content

Throughout the interviews, teachers shared content of their assignments and discussed how they instructed students to thoughtfully question and evaluate sources. They also shared how they created assignments that are relevant to students' lives and focused on increasing their students' ability to search.

Thoughtful Questioning and Evaluation. One way teachers instruct students on information literacy is having them improve their questioning and evaluating skills. Rather than simply consuming information, teachers model how to question the information they find. One English teacher explained,

I'll model questions that are going on in my mind as we approach certain parts of the text. In my classroom, I have a "like this question" matrix bulletin board. I want students to learn how to ask a good question. And how to form a question, especially for my English Language Learners. And so I'll model how to form a question using the question matrix, and then throughout a unit, they'll refer to that question matrix to come up with more questions about whatever content [they find].

She described a unit where students found and analyzed media images and gave examples of the questions she modeled. The teacher said,

We took a look at different media outlets, media and advertisements and commercials, and we discussed, what is this advertisement? For example, what is it communicating to the audience? Who might the target audience be? What explicit message is being communicated? And what implicit message is being communicated? And that was a lot of visual learning as well.

These questions lead students to look at information critically rather than maintaining a merely superficial outlook.

Another English teacher expanded on the types of questions students can use to evaluate the authority of the sources. She used an online flow chart from a nonprofit named Common Sense Media that provides a free digital citizenship curriculum. The teacher explained,

I remember that Common Sense Media flow chart, like what's the URL? [Students then] write the URL in the graphic organizer. Who's the author? What did you find out about the author? Or what did you find out about the organization? And then the context could also be like, is this an organization? Who is the audience? And what form of media is this? Is this a newspaper, is this a speech? Is this a journal from a scientific journal or credible journal?

These questions portray how students need to develop their sense of questioning. Cope (2010) said that thoughtful questions are just as important as being able to find the information itself. As demonstrated through these questions, the teachers instilled in students a need to critically evaluate information, as information is not apolitical (Cope, 2010). The information and knowledge that students develop is subject to interpretation (Luke & Kapitzke, 1999), and developing strong questioning skills allows students to examine how knowledge is organized and disseminated (Kellner & Share, 2019).

In terms of evaluating sources, with the advent of technology and academic websites available, teachers direct their students to more sites with credible sources already filtered for them. A teacher described the need for learning information literacy and being able to access academic sites:

Right now, in this day and age, definitely learning how to use electronic research engines as sources of research. And particularly scholarly research engines, such as EBSCO Host or Google Scholar or JSTOR. You know, learning how to use those types of platforms and how to narrow and refine their search is really important.

With access to credible search engines, teachers are more confident that the information students find may be more relevant to their research but will need to then extend information literacy lessons to using those types of platforms and refining their research.

The same teacher explained that students also need to be able to evaluate social media:

I think it's also important for students to be able to identify credible information that they're getting from social media sources, or things that pop up on their social media feeds and understanding how those sources are often tied to advertisements versus sources that actually follow the ethics of journalism.

This teacher acknowledged that technology has brought with it social media platforms, which may educate students through advertisements and misinformation. One teacher reiterated social media itself as problematic, stating "because our social media controls most of the information that we get, and because the algorithm is producing things that we want to see, we are now in these echo chambers of seeing just information." To combat this, referring students to credible websites will help them find information that is relevant and appropriate.

Along those same lines, another teacher described the use of reputable search engines:

I used Google Scholar with them and also a couple different new sites. I have also used the *LA Times*, *New York Times*, and *The Atlantic* just because I have subscriptions to them so I can access all their articles. With Google Scholar, a lot of the articles or abstracts, or the language, the Lexile level is just so far above where they're at right now. It's incomprehensible for them, unfortunately. So I ended up giving them a lot of articles from different publications, or directing them to government websites.

The teacher mentioned different websites that may require a subscription fee, which may limit students who cannot afford to pay these fees. Sites such as Google Scholar may be free for students to access, though the problem the teacher has encountered is that students find it difficult to access the texts because of their reading level. Due to these two issues, the teacher

provided students articles from fee-based websites or directed them to websites with more accessible articles.

Of Bruce's seven faces of information literacy, these findings correspond to Face 1 and Face 2. Face 1 consists of students using technology to retrieve information and to communicate, and Face 2 is finding information sources. While teachers are aware of academic search engines and teaching students how to access information online, their teaching of information literacy may be limited because of students' lack of access to subscription-based engines when they are at home, or their low reading level.

Relevancy and Extending Knowledge. When teaching information literacy, teachers are much more aware of creating content that is relevant to students' lives and that addresses current events in the news. While many teachers will assign the summative assignment to be an essay or a worksheet, information literacy can be extended to create new forms of knowledge and disseminating that knowledge through a non-essay format. One teacher offered the following idea:

The end product isn't always a direct process essay. The end product is something that the students are going to have to use in a real-world context, that might require them to have some research experience to make that presentation. Products that I really enjoyed were when we wrote a letter to a politician about some problems in our community. And then in another [students] had to create some kind of PSA for [other] students.

These relevant skills ask students to go beyond writing to creating work that translates into their own lives. Another teacher created content based on real-life current events that engaged students through what they saw in the media. In her English 10 class, she said,

This is my first year teaching the juvenile justice unit. And I think it was more relevant to what was happening in our cultural news because Derek Chauvin was on trial, so we were talking about sentencing, like even first degree, second degree murder.

Furthermore, in the English 11 class, the teacher said,

The junior curriculum this year focused a lot on what it means to be an American and what our identity is in America. It's about the Black Lives Matter [movement]. Like the Black protest movement and Amanda Gorman speaking, I think everything just tied together.

Connecting students to their assignments through real-life examples helps students to reflect on their own experiences to problem solve and make connections from the classroom to their own lives.

A history teacher discussed how he connected teaching information literacy to real-life events:

So one of the most talked about events of this year is January 6th, when people say protests, insurgency. Depends what word you use, and where you're getting your information from. So what we do for our lesson is, we'll see how words have power, and how words change the way stories are narrated. So we looked at headlines. I provided students with a chart that informs them of how left or how right a news outlet is. And I had them research and just break down headlines, and who's the author of it, and what websites it's coming from. It's before you even read the actual article, you get the information, you get to detect the bias, and you get to detect a point of view. And also to see whether it's credible or not, you know? So the lesson was to see, is this information we're getting reliable? And how do the words that the editor uses or the author uses kind of change the story that's being told, choosing also to look at point of view, different perspectives.

This history teacher expanded on teaching students about evaluating sources, reading, and credibility based on the information students would find online. The current events that occurred allowed the teacher an opportunity to address the information students found and how it influenced the message a reader receives.

An English teacher also expanded on how she used the pandemic as a teachable moment:

For instance, and I recall having a conversation about the CDC facts about COVID, or the vaccines, the reports that are coming out, is this just one person's opinion about what they're seeing? Is it witness testimony? You know, is that completely reliable? Or is this a scientific study that has gone through multiple scientists. Like, which fact would you prefer? Which fact would you trust? You know, we had a conversation about that, and just how it applies to real life in the pandemic, what's happening now? Because there's tons of misinformation circulating.

This English teacher addressed the relevant issue of the pandemic, vaccines, and misinformation circulating through an informal conversation with her class. Posing questions will help the students to understand the information, but they need to know that the knowledge they construct is influenced by interpretation and mediation (Luke & Kapitzke, 1999).

While some teachers chose to focus on utilizing current events when it came to their lessons about information literacy, others focused on the students' own interests and lives. One English teacher said that teaching information literacy is a process that starts with identifying what students are interested in:

I gave students some time to have a brainstorm session in class about what big events or what big things are important [to them]. What values are important? What questions do you have about those things? So some students want to focus on global warming. Some students did gun violence. A lot of the girls wanted to focus on portrayals of women in [the] media, one girl focused on issues of body images with female athletes. So that was really neat. Another girl looked at gender roles and gender identity with Disney, specifically, how they are portrayed, you know, princesses and the image that gives off to people around them.

Igniting students' interest can be a way to engage students and help them to extend their own knowledge.

A teacher of AVID, which is an elective class that supports first-generation students in learning skills for higher education, focused her assignment on service learning:

It was a research-based project that's on service learning. So they had to look at different websites, they had to evaluate their credibility that we use an acronym for them to be able [to evaluate] that came from AVID, then they had to write a research paper that talks about the process, the information, their reaction to the information, and then they had to provide a solution for whatever social problem they were addressing. We're addressing immigrant worker rights, homelessness, and immigration.

The teacher said these topics are important to the students:

I think both of those are things that touch home with our kiddos, and definitely the immigration because a lot of them are first-generation students. So looking at what's occurring with their parents, because they were born here. So they're naturalized, but their parents are not. Some of them are not citizens. And so that was a really poignant topic for a lot of them. And homelessness. Also, they're just seeing their families are experiencing it themselves. So they wanted to look at how they can help situations or friends, family. They had to find credible organizations to work with; they couldn't just create something on their own. You know, they had to write, really research what the problem was, and they had to understand and then they had to find an organization or an agency that was credible [that provided a solution].

In touching upon this issue of relevance, the teacher wanted to connect students to an issue in their lives that they could address. This connects with Bruce's Face 5 and Face 6, where students interact with the information, construct new ideas, and extend beyond their own knowledge of the topic. Additionally, this service learning project was the only one that addressed Face 7 of information literacy, in which students use their knowledge to benefit others. Finding research about a problem in their community, then utilizing those research skills to find a solution, encourages students to think critically and problem solve.

Though relevance is important and will help motivate students in learning information literacy, teachers also need to make explicit connections so that students can understand the purpose of the assignment. Two teachers spoke about assignments they believed would be relevant to students and help them to develop information literacy skills but were unsuccessful. One science teacher reflected on his experience:

And this project came up, a low buy-in assignment, which is fairly simple, just research. [Students needed to] find a scientist that looked like you or maybe that you're interested in, that's not Caucasian, or male. I provided a list and it's] continually growing. I think at the top we had 200 [scientists] range by their sex, their ethnicity. And they can just choose, and they're also different topics, like microbiologist, surgeon. So they had their options. And surprisingly, a few didn't want to do it. And the whole point was to get everyone involved, especially the people who didn't like science. But, to get 80% [of students involved], it's so hard.

When the teacher was asked why students might not want to complete an assignment that is relevant to them, the teacher responded, "Not because they're incapable. It's just lazy."

Connecting this assignment to a clear purpose would give students more motivation to complete it, rather than explaining that it is a low buy-in and easy assignment. Moreover, giving context to the assignment would also increase participation.

An English teacher explained that teaching students to conduct research around confusing terms resulted in unmotivated students. She said, “They had to research consumer culture, and they had to research solutions. So it was really they were thrown off with the term *consumer culture*, like a lot of them didn’t get it.” In teaching students about complex text or ideas, teachers would need to reiterate important terms and vocabulary in order to guide students in completing their research. Additionally, reiterating to students the purpose of the assignment or its relevancy to students’ lives may also increase motivation.

Web Searching. This study also revealed that teachers spend a large amount of time teaching students to search, and they refer students to websites that are easily accessible. One teacher suggested that teaching students to search is simply expanding on skills that students already have. She clarified,

So with this idea of information gathering is really important, because they’re already doing a lot of information gathering on their cell phones, on their laptops, they’re doing a lot of that already. And I want to showcase how we’re not teaching them new skills, we’re teaching them how to use the skills that they already have. But in a different setting, in an academic setting.

In translating students’ real-world experience to the academic setting, teachers can build on students’ skills.

One teacher did mention that relying on students’ generic research skills may be detrimental without teaching students to question where the information is coming from or who is providing it:

Seeing how the students interact now with their phones, and how all the information is so quick. Like I said, there’s those websites where random people ask questions,

and then anybody can answer it. When the kids don't know how to search for things, they'll just type in a question into Google.

Some teachers even fall back onto using Google as a search platform due to students' familiarity and ease of access with it. A science teacher said,

The more you ask Google, the more you learn from Google, the better. Like how Google's algorithm is formatted so that you can get the information you're seeking based on specific keywords that you type in. And that's essentially the beginning of research, just type in your question in Google.

While some teachers prefer to use academic search engines like EBSCO Host, Google becomes an easier alternative because of its usability. A history teacher said,

I told the kids just research this, just throw it in and search for and see what you find. And I started looking at this information. And a lot of them see Yahoo Answers and Reddit and stuff. And I use that guide, that left or right [wing] news outlets, to see where the information is coming from. Can you even trust these websites as being credible?

This history teacher used an opportunity in class to teach about the search process. Looking at the information they found, the teacher demonstrated evaluating websites from a negotiated position (Tewell, 2018), to analyze which websites to believe and explore further, and which to disregard.

Using Google provides a very basic introduction to searching, which will need to be followed up with teaching students how to evaluate the sources they find from Google.

Another teacher said that using Google Scholar may be a better choice, because this search engine is free. The teacher explained, "After we talked about what makes good research, sources or materials, then I also modeled the process of using the database. We actually first used Google Scholar because it was the most readily available." This teacher modeled how to use Google Scholar to find credible sources. As Google Scholar is a free site, it provides any student access to credible information. One teacher explored the difference between Google and Google Scholar with her students:

I tell them not to use Google. And then I show them Google Scholar, and I have them search on there. And then I kind of just explain why the search results from Google Scholar are more credible than if you just did a normal Google search.

With information easily accessible, students need to be able to discern between credible websites. With access to Google Scholar, teachers now need to discuss the difference between regular search engines, such as Google, and academic search engines.

Another English teacher supported her students by doing the following:

I modeled how to find information on EBSCO Host. So I taught them how to use our database, how to bookmark, how to cite the different sources to do keyword searches. And then I gave them different websites, like one of the websites was procon.org.

These findings connect with Bruce's Face 1 and Face 2 of information literacy. Being able to access sites that allow students to find accurate and reliable information strengthens information literacy instruction. However, as stated before, a problem with accessing research websites is students' lack of ability to access the text itself. An English teacher surmised,

They're already using Google [to search]. So it might be a bit easier to use. But again, the issue I ran into was a lot of abstracts. And what resources they could find were so technical that they really weren't much use. There really wasn't too much for my students to use just because they couldn't access the text.

Accessing credible websites such as EBSCO Host, a "library for scholars," as one history teacher described it, may help students to find more credible texts. However, this is further complicated by teaching students not only how to access information, but also how to read and interpret the information they find. Studies have shown that many teachers still instruct students on how to complete web searching, though students find it difficult to determine credibility (Fidel et al., 1999; Lurie & Mustafaraj, 2018). Students still find Google to be most easily accessible (Connaway et al., 2011), as did teachers in this study.

However, with Google Scholar being more available, teachers may need to focus on both evaluating credible websites and navigating difficult texts.

Teaching Methods

Graphic Organizers. In terms of instructional practices, many teachers believe that a graphic organizer is the most productive and efficient way for students to collect information and reinforce information literacy skills. Teachers believe that a graphic organizer is also most important when it comes to writing, after students have already finished collecting their information. One teacher confirmed that she liked to use a graphic organizer to facilitate

writing, because students needed a way to organize their research. And because we know at the end, they're going to have to create the work cited page there, [which] they may not, as a ninth grader, be planning ahead for that.

In this aspect, learning information literacy is also a way to store and easily retrieve information, which connects with Face 4 of Bruce's information literacy relational model.

After accessing relevant and credible sources, students must also have a way to organize and access the new information they learned. One English teacher said that having a graphic organizer can be doubly useful:

Finding relevant quotes and articles is one thing. But being able to have a single place to click on information is also really vital when it comes to drafting and editing or even just trying to unify thoughts and claims.

The graphic organizer can serve as a place where students can gather information and also prepare writing for their final assignment. One teacher explained that the graphic organizer serves as a memory tool as well:

Formative questions can be just like a quick answer and then [the students] forget about it sometimes. Whereas a worksheet like the graphic organizer, they're doing it repetitively for each hour. Recall. So it's kind of getting ingrained in their mind when they look at each source. They know: I have to do this for every source that I look at. So maybe I would say the graphic organizers are more effective.

When teaching information literacy, it is important to have students see the relevancy in their assignments. If not, they will simply finish the assignment for completeness rather than looking critically at the sources (Meloche et al., 2020).

Modeling. Another strategy that teachers find successful in teaching information literacy is modeling what they would like students to do. This modeling can be the thinking process, or how to access different websites. One teacher remarked,

I'm thinking and I always think out loud, and use the academic terminology to reflect that language and how I'm critically evaluating those things on the rhetorical value, being open to ideas, always modeling, and then allowing the students to always express their views and opinions with me and with each other, and we share so we can kind of take those ideas so that it's okay.

An information literate person needs to be able to express their ideas and also question the information they find. Modeling for students how to express their ideas leads them to construct new knowledge (Face 6).

Another teacher stated that teachers also need to model the practical steps of accessing information literacy:

There's visualization, they have to see the screen. And they have to see you click on certain buttons, they have to see the visual screen on the whiteboard. Because if you just give them a packet with a worksheet and tell them to figure it out on their own, it's gonna be harder on them.

This teacher explained that students may need to be shown how to navigate a website. This connects with Face 1 and Face 2, which reflect on how students view information literacy as finding and retrieving information. Studies have shown that students need to be taught explicitly how to access and evaluate information (Burton & Chadwick, 2000; Togia et al., 2015). Teachers in this study stressed modeling as a scaffold to help students learn skills and behavior. One English teacher stated,

But you're facilitating the questions that they need to ask themselves when gathering the information. You can model where you get your information from, how students

could find the information. Model the process, because it's not just the graphic organizer, it's like, how do you do that kind of horizontal thinking and fact checking? I guess, like, think alouds? And what goes through your mind when you watch the news? Giving them acronyms to help them determine what is a credible source? What's an accurate source? What's the relevant source? All those kinds of like, learning behaviors that we need to practice.

This English teacher believed that modeling was the best strategy to help students develop learning behaviors that they can utilize outside of the classroom. Yu et al. (2018) suggested that the modeling approach be used for students who are struggling and need additional support. Learning to evaluate the information is an interactive process that requires students to learn how to learn and how to apply these skills beyond the classroom (American Library Association, 1989).

Document Analysis

In this research study, teachers also submitted documents they used in class to teach information literacy. These documents were analyzed using Bruce's seven faces of information literacy in order to understand how educators are teaching information literacy. Generally, information literacy is being able to locate, manage, and use information (ALA, 1989; Burchinal, 1976; Zurkowski, 1974). However, Bruce's (1997) study indicated that information literacy can be experienced in different ways, and in this study, it was enacted through the activities that students are completing through their assignments. Table 2 represents the ways in which information literacy is experienced through the assignments the teachers in this study designed. The documents are numbered for easy reference, and each document is described by its name, a summary of the assignment, and the connection to Bruce's seven faces of information literacy.

Table 2*Teacher Document Connections to Bruce's Seven Faces of Information Literacy*

Doc./ subject #	Description of documents	Face						
		1	2	3	4	5	6	7
1	Service Learning Project: Teacher created a worksheet that outlines how the students should present their research question, describe their search process, and present the information they found. The teacher provided information about MLA format and Works Cited page.	x	x	x		x	x	x
2	Reliable Sources Worksheet: Teacher created a worksheet in which students are asked to list websites they used, analyzed the credibility of the source, and found supplemental sources that supports their research question.	x	x	x		x	x	
3	Article Analysis: Teacher created a worksheet in which students find news articles and studies that answer their research question, summarized the article, and provided textual evidence.	x	x	x		x	x	
4	Evaluating Research: Teacher reviewed the acronym CRAP to help students evaluate a source: Currency, Reliability, Authority, Purpose.	x	x	x		x	x	
5	Research Graphic Organizer: Teacher created a graphic organizer in which students are directed to discuss the pros and cons of the research topic, then paraphrase and cite their information.	x	x	x		x	x	
6	Genetic Disorder Disease Project: Teacher provided students with the research directions, which included questions students need to complete for the project, reminders to cite their sources and use MLA format, and links on how to check for plagiarism.	x	x	x		x	x	
7	US History Research Paper: Teacher created a page of instructions for students on how to complete a research paper. The documents include directions on selecting a topic, how to complete research, examples of a Works Cited page, directions on how to create an outline, and how to write a rough and final draft of the paper.	x	x	x		x	x	

Doc./ subject #	Description of documents	Face						
		1	2	3	4	5	6	7
8	Directions for EBSCO Host: Teacher provided step-by-step directions of searching for information and how to store and retrieve sources from email.	x	x	x	x			
9	Critical Media Literacy Unit: Teacher created a lesson in which students analyze how advertisement provides messages about beauty by looking at provided samples to help answer the unit question.	x	x			x	x	
10	Credible Research: Teacher created a lesson in which students identify credible and non-credible sources (based on currency, author credibility, URL, and access to academic database).	x	x			x	x	
11	Research Worksheet: Teacher created a worksheet in which students researched a different topic related to their unit each night. Students were told explicitly not to use Wikipedia and were required to list the source of their information.	x	x			x	x	
12	Class Debate Template: Teacher created a graphic organizer for students to collect evidence, explain their ideas, and cite their sources.	x	x			x	x	
13	Do Words Have Power Worksheet: Teacher created a worksheet to analyze headings from news article and to examine ideology from news outlet.	x	x			x	x	
14	Document Based Question Analysis: Teacher utilized an acronym to analyze primary source documents (Purpose, Audience, Context, Outside Information).		x			x	x	
15	Selecting Evidence Mini Lesson: Teacher created a lesson in which students learned about different types of evidence (statistical, textual, testimonial, anecdotal) and identified them.		x			x		

These documents are ordered based on how many aspects of the seven faces occur in the documents. There are assignments that reflect multiple skills of information literacy, though there are outliers as well. The document analysis determined that while teachers have different content according to their subject and different definitions of information literacy, students generally experience information literacy uniformly. They experience information literacy through searching for information (Face 1), being knowledgeable about how to access information (Face 2), constructing new knowledge based on the information they find (Face 5), and extending their knowledge based on their interactions with information (Face 6). The analysis also indicated that teachers rarely asked students to store and retrieve information (Face 4) or apply the information they learn or construct to benefiting others (Face 7).

Documents 1–13 that teachers assigned included Face 1 (the information technology conception), and documents 1–15 addressed Face 2 (the information source conception). In their assignments, teachers indicated that students should be able to use technology for personal or informational purposes and then be able to access information. Instead of critically evaluating the information, teachers emphasized the ability to access information. In the documents, teachers asked for URL links and source links and provided examples of search engines such as Google Scholar or EBSCO Host. This is consistent with the literature in which students are asked to search for information online and use URLs to determine credibility (Fidel et al., 1999; Lurie & Mustafaraj, 2018). Only one participant, a history teacher, provided a chart that showed the ideology behind news outlets. Teachers also provided examples of sources they found online to ask students to evaluate for credibility, using an acronym such as CRAP (Currency, Reliability, Authority, Purpose) or PAC-OI

(Purpose, Audience, Context, Outside Information). This is consistent with Meloche et al. (2020), who also used similar acronyms to help students evaluate information. Teachers also asked students to summarize the information they found, which depended on their ability to use technology to access the sources they needed for their paper.

Additionally, many of the documents also required students to construct their own knowledge and extend their knowledge (Face 5 and Face 6). Documents 1–7 and 9–15 addressed face 5, which is knowledge construction, and documents 1–7 and 9–14 addressed Face 6, which is knowledge extension. In experiencing information literacy through face 6, as Bruce suggested, students construct their own knowledge and add to their prior knowledge, begin to reflect, and complete some sort of evaluation (Bruce, 1997). This personal perspective would include some sort of critical evaluation on the student’s part. In Document 2, the teacher asked students two questions after analyzing sources: “How will you use these three sources to support your research topic? Do you think the authors of your sources are providing readers with the truth or perhaps have an ulterior motive?” These questions require students to reflect and evaluate on the information they found and make connections to their research topic. Document 3 also asked students to summarize the information they found and asked them to add “Quotations that help answer your research question.”

Some worksheets were less structured, such as Document 5, which simply asked students “to paraphrase and note (cite website).” These questions asked students to use textual evidence and cite their sources in order to connect to their research question, which requires analysis and evaluation. The knowledge extension face of information literacy asks students to combine their personal knowledge with new insight or creativity (Bruce, 1997).

Document 1 asked for students to come up with new ideas for their project, stating students need to “try to focus on three or four major findings from the research (claims, causes, solutions), and then expand upon each.” These directions asked students to develop new solutions to their research problems based on what they have read and synthesized.

Document 7 asked students to choose a topic, “one that interests you,” to develop new knowledge. Document 13 asked students to reflect on the lessons in class about the headlines they see in the media and then to apply it to their lives. The directions on the worksheet asked students to consider “How can these news outlets’ ideology affect how information is disseminated to the community?” In the knowledge construction and knowledge extension phase, students are asked to evaluate the information they find and build upon their knowledge.

As with Boon et al.’s (2007) study, many teachers did not discuss much about how students store and retrieve information (face 4). Only one teacher created a worksheet that provided step-by-step details about how to access EBSCO Host, how to email an article to oneself, and how to create a folder in Google Drive to store these files. Moreover, many teachers also did not address how students may use the information they find to benefit others. Only Document 1 asked students to reflect on the research and explain “How does/will the learned information affect future decisions or behavior?” and “Did it have value?” These questions urged students to reflect on how the information and conclusions they come to may benefit society.

Findings for Research Question 3

Research Question 3 was “What recommendations do teachers have for teaching information literacy?” It focuses specifically on what recommendations teachers have for

other instructors who are teaching information literacy. This study's site is implementing information literacy and requires that each grade level in English complete a research paper; these recommendations would provide important suggestions to strengthen the curriculum. Specifically, the interview question I asked the participants about recommendations was, "Imagine that you're working with a new teacher on information literacy. What recommendations would you give them?" Out of the 15 high school teachers interviewed, five teachers said they believe that relevancy and engagement are important when teaching information literacy. In addition, six teachers discussed how time is an issue and that teachers need to intentionally plan for this unit in their curriculum. Six teachers described the need to expand information literacy to more than just one unit within the curriculum for the year. They advocated for information literacy to be a reiterative process within their curriculum. Based on this interview question, teachers had three concrete recommendations to suggest, which are discussed in the following sections.

Recommendation 1: Ensure Assignments Are Relevant and Engaging

Of the 15 teachers who responded, five teachers said they believe it is essential for other instructors to make assignments and projects relevant to students. bell hooks argued that to practice engaged pedagogy, students must be an "active participant, not a passive consumer" (hooks, 1994, p. 14). Giving students the ability to make connections between their academic and personal life will enhance not "just knowledge in books, but knowledge about how to live in the world" (hooks, 1994, p. 15). One English teacher said that "learning is a social act, like they need to be working and asking questions with each other. Try to make it as relevant as possible, try to make it as student driven as possible." That teacher explained that student driven "[means] they're coming up with the questions, they're coming

up with the topics. But you're facilitating the questions that they need to ask themselves when gathering the information." Giving students the opportunity to take charge of their own knowledge allows them to have agency, and the teacher acts as the facilitator to that knowledge.

Another English teacher recommended that instructors "be flexible, be open to students' interests." A history teacher further supported that idea, stating,

I would tell them, it's not about content. It's not about pacing. It's not about covering dead people 200 years ago, and memorizing what dates such and such things happened. . . . It's [taking] even a smaller context of information, and then building up their own idea of what their opinion is going to be.

With so much content to cover in a curriculum, it is even more important for students to contextualize the information to their own lives, and to make the learning meaningful. When students can express their own opinions about the information they come in contact with, then the teacher practices engaged pedagogy, which "values student expression" (hooks, 1994, p. 20).

Moreover, engagement is necessary to ensure that students are invested in their curriculum. One English teacher said that "whatever that topic might be, engagement is key." Following up on this idea, the teacher stated that engagement for her means that she is "getting them familiar with the vocabulary, the academic vocabulary, the structure of a lesson." Allowing the students time to understand the curriculum will help them to know the purpose of the assignment. Another English teacher suggested that engagement can be found in different mediums: "specifically teaching them the vocabulary of audience, purpose, mediums in terms of, is this a podcast, an editorial, the different genres, the different mediums in which the information can occur." Giving students the vocabulary to discover

different platforms of information may encourage them to seek beyond books and broaden their meaning of a text.

In contrast, a science teacher recommended using social media to engage students. He suggested teachers find “something interesting, find a TikTok video and describe what’s happening and what [the] background information [is].” As any form of media displays information, it is important to note that students must be able to discern misinformation they see online. The science teacher continued, “Get them to understand the little simple procedures of checking if these are good sources, or fake sources.” Teachers recommended utilizing different strategies to engage students and making assignments relevant to their lives to make information literacy instruction effective, whether it is through explaining the assignment clearly or by engaging with social media.

Recommendation 2: Plan With a Purpose

Another recommendation teachers had for those teaching information literacy is to plan lessons with a purpose in mind. One English teacher said,

I’m always about backwards planning. So whatever the unit is that they’re working on, I would want to know what is the culminating task that students will have to produce, what standard or how they are going to measure their success.

Clarifying what the end goal for the assignment is will make it the process of learning information literacy transparent to both the student and the teacher. Another English teacher said,

I would probably tell [teachers] to have focus; it’s really important to have a focus to know what’s the end goal. And backwards planning in this, especially with this. It’s very important to know what you want students to do; everything has a purpose.

If teachers want students to display a certain skill, they need to be explicit about this focus and planning instruction to meet this goal. Additionally, an English teacher stated that instructors should

have a clear goal in mind for every step of the process, know exactly what you want to do [about] resource gathering and whatnot. Front load technical skills and key concepts or information so that students know what to expect as they go into it.

When students have a goal and a purpose to their reading and writing, they have clear expectations and are more likely to achieve success.

Included with purpose is the recommendation to provide adequate time for teaching information literacy. One English teacher said, “Time. Consider where and when in your curriculum you’re teaching information literacy; if it’s like the only isolated time that you’re going to teach it, then you need a lot of time, a lot.” This teacher contended that if information literacy is relegated to one unit within a curriculum, then teachers should dedicate adequate time to the subject. One English teacher supported this idea, saying,

I would encourage them to spend time with your section. I mean, I know we’re rushed with the curriculum, but I think this full Research Unit took about two months to produce one essay. And I think taking the time is very important. As students need time to read, and summarize and pull information, and search, searching itself doesn’t always lead to success.

Spending time on a unit is essential if teachers will dedicate only one unit out of the entire year. One history teacher would rather that instructors “talk about this stuff early, about like primary source, the sooner you can establish it, the better, talking about primary sources, secondary sources, conceptualization, bias, credibility.” Information literacy consists of more than just skills; it also includes concepts that this history teacher believes need to be established early on in the curriculum and reiterated throughout the year.

Recommendation 3: Incorporate Information Literacy into Each Part of the Curriculum

Map

Many teachers expressed the need to have information literacy be a part of the year-long curriculum, not relegated to just one unit in the year. One teacher suggested that the entire department continue to update and incorporate information literacy so that students are

constantly practicing their skills, though she acknowledged it is difficult with the changing technology:

I know that we're trying to do some sort of research at every grade level. [We're] supposed to continue [with] the development of the curriculum that way, so that students can have more practice in inquiry and all that kind of stuff. It's hard. It's hard, though, too because technology is updated all the time. So you have to update the curriculum.

For students to develop their information literacy skills, teachers also need to ensure that they teach information literacy with fidelity and have resources that students can access.

Another English teacher stated,

These are things that we have worked on in our department, and maybe we could always revisit them; it's vertical alignment, let's say, [of] common academic vocabulary. We want all of our students to know this vocabulary set in the ninth grade, 10th grade, 11th grade.

This teacher suggested that common vocabulary surrounding information literacy should be reiterated in each grade level. She shared the same perspective as that of the history teacher, who said that information literacy concepts should be introduced early in the year so students know what to expect, in addition to building skills and habits that would make them information literate. One English teacher said that instructors should "introduce small pieces of information, small nuggets of information or skills and strategies that students can learn how to use from the beginning of the school year, and just constantly refer back to those practices." Constantly referring back to information literacy practices, big or small, would allow students to retain information and practice their skills.

Additionally, one teacher expanded on how information literacy skills can be used in any part of English classes, which could expand to other subjects as well:

So students should be reading information articles, in every unit that you do at least once, so that you can talk about credibility, so that you can talk about the validity of a source. Those things that I spent time front loading. But I feel like [it] should not be a front load [to the research unit]; it should be integrated as part of the conversation, no

matter what unit you're in, whether you're reading a literature unit, I pick out a literary review, and talk about or introduce the research components. If you're doing something else, talk about something so that when you're ready to address this big research piece of writing, which I really think should be at the end of the school year, then you did yourself a favor, and you did the students a favor, and students are not learning these skills for the very first time and then having to apply them one time immediately.

This teacher described introducing concepts early, making connections to other units, and ending with a research paper. This allows teachers to help students build skills incrementally rather than expecting them to learn information literacy skills in one short unit. A history teacher supported this idea, saying that information literacy should be practiced daily, in and outside the classroom. He said he believes that information literacy is knowing different perspectives, as "everyone sees the story in a different way. So this is a lot of detective work. And you need to do detective work every day, to get this information." Getting students into the habit of questioning what they see and then to further their knowledge is crucial to helping students be information literate and lifelong learners.

The recommendations teachers suggested are practical and can be implemented in the classroom daily. What is most important is that teachers are thinking about information literacy and recognize that there is a need and impetus to teach these skills. Teachers said they believe that engaging students by making sure they understand the lesson and that the lesson connects to their lives is important to capturing the students' attention. The curriculum should be student driven and address students' own curiosity about the world. Additionally, teachers also recommended planning with a purpose. Teachers should plan backwards with the skills or summative assessment they want students to produce, so that there is adequate time in the classroom to master those skills. With the district implementing a research paper in each grade level this school year, implementing information literacy in each of our teaching units may be the next step.

Summary

In this chapter, I provided an overview of the participant sample and data set. I provided the significant findings for each research question and included examples from the interviews. In Chapter Five, I make connections between the findings that I have laid out here and the literature review in Chapter Two. I expand on whether my findings extend, contradict, or confirm the findings of the researchers in my literature review. Most notably, I confirm how the teachers in my study are teaching critical information literacy through examining and questioning current events, and connecting to students' real lived experiences. Additionally, I focus on how many of the teachers share beliefs about critical information literacy, such as those of Elmborg (2006), Tewell (2018), and McDonough (2014). However, I do note that teachers can deepen critical information literacy by developing curriculum that would encourage students to question dominant ideology, and to continue teaching students how to view and question texts not from a dominant position, but to read information from negotiated and resistant position (Tewell, 2018). Furthermore, I expand on Bruce's (1997) seven faces of information literacy and apply these different strategies of learning about information literacy not only to the definitions that teachers provided but also to the assignments they submitted.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

This dissertation explored teachers' understanding of information literacy, how they instruct their students, and how they design their classroom assignments. Existing research has shown that teachers have different definitions of information literacy (Smith, 2013; Williams & Wavell, 2007; Yu et al., 2016). Findings from my research, as I will describe here, lend support to prior research. Similar to prior research, my findings showed that the majority of my teachers conceptualize information literacy as finding information and making new knowledge (Smith, 2013; Williams & Wavell, 2007; Yu et al., 2016). In addition, my findings also lend support to prior research that found that teachers also conceptualize information literacy as possessing critical thinking and awareness of sources (Smith, 2013; Williams & Wavell, 2007).

The impetus for this study was a school-wide assignment. Franklin High School, the site of this study, instituted a research paper in each grade level, with the goal of helping students access informational texts to improve their reading and writing scores in summative assessments within the classroom and in state testing. While a research paper is included in the curriculum map guidelines for the State of California, not all teachers at my school site collaborated to form information literacy units, nor did they come to a consensus about the content or what skills to teach. Furthermore, teachers were not held accountable for implementing a research paper in the classroom before the 2020-2021 school year. For that reason, exploring teachers' understandings of information literacy provides insight into how teachers are instructing these skills and content in the classroom, in order to form a cohesive definition and ensure that all students have access to this curriculum.

To engage in this study, I conducted qualitative interviews over the course of 6 months with teachers from Franklin High School via Zoom and encouraged them to send their assignments through email in order to conduct document analysis. I argued, in my proposal, that understanding how teachers define information literacy and analyzing their documents would provide consistency for all teachers, creating pathways for them to be most effective in the classroom.

The 15 teachers were identified through snowball sampling, and my research drew on the qualitative interviews and document analysis to provide context for the work that teachers are conducting in the classroom. I utilized Bruce's seven faces of information literacy as a framework to examine how teachers view information literacy, not as a set definition or skills, but rather as a range of behaviors and specific outcomes that define an information literate student. Most notably, I employed Bruce's seven faces of information literacy in order to analyze teachers' documents, whereas previous studies such as Boon et al. (2007), Webber et al. (2005), and Yu et. al., (2010) have used this framework to define teachers' conception of information literacy. I drew on a multi-method approach in order to understand teachers' approach from conceptualizing the idea of information literacy to how they instruct it in the classroom.

After using Bruce's framework, I recommend that this framework be used to analyze the assignments that teachers create. Originally, Bruce (1997) created the framework to explain how students can experience the difference types of information literacy. Applying this framework to the document analysis provided a way for me to see how teachers' definitions and beliefs of information literacy found their way into how they presented this concept to their students. The more ways that teachers allowed students to experience

information literacy based on the seven faces, the more opportunities for students to express their skills and knowledge. Additionally, the faces that reoccurred the most throughout the assignments also gave insight into which faces teachers found most relevant. Based on this study, teachers believe that information literacy is about using information technology to find information and knowing different information sources, face 1 and 2. These faces further support how teachers define information literacy in this study, where the key finding stated that 53.0% of the teachers indicated that information literacy is about finding and evaluating information. Additionally, teachers also believe that information literacy is constructing and extending knowledge (Bruce's face 5 and 6), which also reflected teachers' beliefs of information literacy as an inquiry process where students pursue a topic of their interest and learn more about it.

One disadvantage of using this framework is that it does not address the critical perspective of evaluating information. While Bruce's faces include students constructing, extending, and using the knowledge they accrue to benefit others, it does not address how students evaluate the information they find. The framework does not include a critical analysis of information, rather treating information as flat or apolitical (Cope, 2010). In that respect, this framework may address how teachers teach information literacy, but not adequate to address how students critically analyze the information they find. Tewel (2018) stressed that educators can teach students to read the information they encounter through a dominant, negotiated or resistant position, where students may believe or challenge what they read. Bruce's seven faces do not include a face that addressed the critical evaluation of sources.

This dissertation explored three separate research questions that sought to understand teachers' conceptualization and instruction of information literacy. Each question provided a snapshot into teachers' work in their classroom and provided insight into and suggestions for this field of information literacy. The research questions were the following:

1. What are high school teachers' understanding about information literacy?
2. In what ways do teachers incorporate information literacy into their instruction?
3. What recommendations do teachers have for teaching information literacy?

Guided by the theory of critical information literacy, this study sought to determine teachers' understandings of information literacy and whether they are critical in teaching information literacy. Researchers suggest that teachers can help students develop critical information literacy skills, which in turn can help students develop a critical consciousness - "students learn to take control of their lives and their own learning to become active agents, asking and answering questions that matter to them and the world around them" (Elmborg, 2006, p. 193). Therefore, connecting students' learning to not only their interest but also current events encourages them to become more critical of the information they consume. Findings from my study closely aligned with the empirical literature by offering evidence that teachers do still tend to instruct students on how to search for information very superficially, using sites that are easy to access such as Google (Connaway et al., 2011; Julien & Barker, 2009) and using prompts such as looking at the URL or author to determine credibility (Togia et al., 2015).

The findings of this study highlight not only the superficial nature of information literacy assignments, but also that far too seldom teachers do not provide assignments that allow students to critically evaluate the information they find. While teachers make it their

priority to create a curriculum that reflects real-life problems and values student choice, there does not seem to be a focus on encouraging students to publish this information or use it to benefit others. In doing so, this work illustrates the need for further examination of how teachers in urban high schools conceptualize information literacy and the curriculum they create in the classroom to benefit others.

This chapter considers the study's major findings, situating it in the context of the existing literature, and emphasizes the need for teachers to create assignments that encourage an evaluative and critical examination of the information they find. This chapter ends with implications and recommendations for the teachers, department, and administration in order to ensure that teachers come to a consensus about the definition, to ensure that all teach with fidelity and rigor.

Summary of Findings

Research Question 1: Ways That Teachers Understand Information Literacy

In Research Question 1, I explored teachers' understandings of information literacy. From this aspect of the study, four definitions were developed. The findings indicated that that broadly speaking teachers view information literacy as a process of finding information and evaluating for credibility, an inquiry process, learning to read, and using information to express their ideas.

However, the 15 teachers who participated in this study differed in the specifics of their definitions. Identifying these differences lent support to Smith's (2013), Williams and Wavell's (2007), and Yu et al.'s (2016) studies, which also found that teachers have different definitions of information literacy. Williams and Wavell's (2007) study revealed that teachers understand information literacy as being able to find and read information, make

meaning, and be critical of sources. Yu et al. (2016) confirmed that information literacy also includes being able to find information, using multiple sources, and exploring a research experience. These definitions were confirmed in my own study, and similar to the teachers reported in Bruce's study, the teachers in this study also confirmed that they held a variety of definitions of information literacy. While the ALA has a formal definition of information literacy, these studies indicated that teachers have different definitions of information literacy, perhaps based on their own experience or their understanding of the words *information* and *literacy*. Having a school-wide definition could provide consistency for both teachers and students.

What is missing from teachers' definitions is a critical perspective, in which teachers understand information as a force in society that may perpetuate knowledge that is not neutral. In teaching, teachers need to understand that there is no "apolitical education exchange" (Cope, 2010, p. 24) and should aim to teach students to learn more than simply finding information to complete the assignment, as well as more than just evaluating for credibility and reliability. Teachers need to encourage students to commit to research and learning about topics that have real-world applications to them. The American Library Association, as far back as 1989, has argued that information literacy should address "long-standing social and economic inequalities" (p. 1). With this goal, information literacy should focus not just on skills development, but an education that teaches students to work toward a "democratic institution" (Owens, 1976, p. 27). While some teachers touch upon a social justice mindset in their conversations, this idea does not make its way into their definition of information literacy.

Research Question 2: Ways That Teachers Incorporate Information Literacy into the Curriculum

Research Question 2 focused on how teachers instruct students about information literacy in the classroom. From this question, I divided my analysis into two parts, one on content and one on teaching strategies. As with so many other studies, my findings suggest that teachers emphasized web searching (Fidel et al., 1999; Lurie & Mustafaraj, 2018). However, this study extends what is known in the literature because the teachers in this study spoke about the many websites students use to search for information. This study confirmed what Connaway et al. (2011) and Julien and Barker (2009) implied, that students will gravitate toward what is most convenient. Teachers in this study also prioritized convenience, mentioning the Google search engine as a starting point for research. They did, however, clarify that sites such as Reddit, Yahoo Answers, and even Google searches may mislead students. For that reason, some teachers in this study focused on Google Scholar, which is free, and EBSCO Host, a platform paid for by the school district. This dissertation expanded on the literature on convenience by explaining how teachers are utilizing sources such as free research databases like Google Scholar, and EBSCO Host to help students search for more credible sources. These specific references to library databases echoed Head's (2013) summary of six major studies from Project Information Literacy, which stated that for "course related sources" (p. 475), students turned to course readings, search engines, and library databases.

Regarding content, teachers taught students to question the text in order to evaluate sources, through modeling how to question and evaluate credibility based on the author, site, and subject of the text. Students must "learn to have the habit of questioning the origins,

interests, and contexts of information production” (Brisola & Doyle, 2019, pg. 282), and teachers’ emphasis on developing their questioning skills was evident in the study. While Tewell (2018) determined that librarians taught information literacy through showing students how to question who has access to academic information, the motives of the media, or ways to challenge oppression, the findings from this study showed that teachers make more of an effort to connect their lessons to students’ lives, using their interests and current events to engage them. The teachers in this study confirmed McDonough’s (2014) study, which stated that many librarians taught information literacy by building on students’ prior knowledge, giving them choices, and using topics that are meaningful to students. These findings have broader implications regarding the curriculum development at the high school level and emphasize creating assignments that not only are culturally relevant, but also must focus on deeper critical aspects such as questioning dominant ideology (Elmborg, 2006; Kellner & Share, 2019) and using their education to learn more about the world and educating others (hooks, 1994; Kellner & Share, 2019). The content teachers revealed in this study very rarely asked students to question dominant ideology or educate any others beside their teacher.

In terms of teaching methods, teachers indicated that graphic organizers and modeling how to ask questions as well as the practical steps of searching are important teaching strategies for teachers to show. While Walraven et al. (2013) stated that the process of filling out the assignment can be repetitive, the teachers in this study actually found that graphic organizers helped students to stay organized, especially as students gathered information and made sense of the information they found online. While Ruthven et al. (2005) believed that worksheets may be ineffective if they do not provide enough structure or guidance for

students, the teachers in this study designed their worksheets to help students plan their essays and store their information through citing textual evidence and hyperlinking to websites. The graphic organizers also reinforced Bruce's Face 2 (being able to find information) and Face 4 (controlling and organizing information).

This study also confirmed the need for teachers to model their instruction in the classroom. This is confirmed through Yu's et al., 2018 study, who stressed that teachers should scaffold and model, especially for students who need additional support. Students should be taught explicitly how to look up information, but also how to think about what they find. While Yu et al., (2018) talked about teachers demonstrating how students should browse and access information, the teachers in this study modeled how to evaluate information through questioning the text, evaluating the credibility of the author, the sites where the information is found, and whether the information contains bias. This modeling is necessary and crucial, as studies have shown that students cannot determine credibility alone based on site rankings as their research skills are still developing (Julien & Barker, 2009; Lurie & Mustafaraj, 2018).

Meloche et al. (2020) found that providing critical guiding questions is especially important in order to help students understand the different perspectives, biases, and assumptions in a text. Their study showed that students could have benefited from learning these skills earlier on in the year (Meloche et al., 2020). This confirmed the data in this study, where teachers indicated that teaching students how to question and think about the text will help them to construct new knowledge, and how important it is to introduce information literacy early in the year and in multiple units, not an isolated one.

Using Bruce's seven faces of information literacy, this study also analyzed documents that teachers distributed to their students. According to Bruce (1997), looking at information through the seven different faces would give insight into how to teach information literacy. Rather than a set definition or even set skills, students can experience information literacy in a variety of ways. While other studies have connected Bruce's seven faces of information literacy to how teachers define the term *information literacy* (Boon et al., 2007; Webber et al., 2005), this study adds to the empirical research by using the framework to analyze the documents that teachers submitted. Existing research has shown that teacher-created documents rarely include information about how to use internet sources, how to evaluate information, and how to avoid plagiarism; they instead focused on mechanical processes and directions on how to submit a final product (Head & Eisenberg, 2010; Lowe et al., 2016). However, the prompt and assignments are not as important and effective as the interactions between teachers and students as well as the activities that lead up to the final assignment (Lowe et al., 2016). The interpretation of this study's findings contradicts the findings of Head & Eisenberg (2010) and Lowe et al., (2016), as the assignments that teachers submitted for this study included directions and activities that teach students how to evaluate, provided step-by-step directions on how to search for information in databases, and served as a graphic organizer where students could collect information they found. A possible reason for this discrepancy may be that the documents collected for Head & Eisenberg (2010) and Lowe et al.'s (2016) studies focused on the assignment prompts, rather than documents that teachers provided during the course of a lesson in which students can practice.

Research Question 3: Recommendations for Teaching Information Literacy

Research Question 3 focused on a collection of recommendations for teaching information literacy from the teachers in the study. Overall, this study arrived at three main recommendations for teaching information literacy. Teachers believed that in order to be effective, they must ensure that assignments are relevant and engaging, they need to plan with a purpose, and they need to incorporate information literacy into each part of the curriculum map, not just in a single unit. The first recommendation reflected in the findings of this study showed that teachers should focus on relevancy and extending knowledge when it came to creating assignments. In order for students to reinforce their information literacy skills and their critical thinking, the assignments teachers distribute should reflect on students' lived experiences or on current events that affect them or their community (Tewell, 2018). Some teachers in this study underscored the problematic political climate as a catalyst to teaching students how to evaluate the information they encounter online. Lurie and Mustafaraj (2018) also saw a need to teach students how to evaluate online new sources, and reported that students are still unfamiliar with determining legitimate sites. What Lurie and Mustafaraj (2018) and the teachers in this study believe is that students need to learn information literacy so they can be a part of "democratic institutions" (Owens, 1976, p. 27), to not only observe but to solve problems and make decisions (Burchinal, 1976).

Additionally, teachers stressed that instructors need to plan their lessons with a purpose, so that students understand the goal of the lesson. Teachers stress time constraint as one of the impediments to learning information literacy (Tewell, 2018). In this study, teachers suggested incorporating information literacy into each part of the curriculum, not just one isolated assignment. This connected with previous studies, which indicated that

students would be more adept at information literacy skills if they were to learn it earlier in the school year (Bowers et al., 2009; Meloche et. al., 2020). The teachers in this study suggested a vertical alignment of not just academic vocabulary that students can expand on each year, but also building on the skills of evaluating websites and using research databases. Studies have shown that students use Google and Wikipedia to find information (Head, 2013) because it is easy to access, though they are taught to turn to research databases because it is more reliable (Harouni, 2009; Head, 2013). The teachers in this study confirms the idea of research databases are more reliable, as they teach students to use Google Scholar and EBSCO Host when they are on the school Wi-Fi.

Current research on information literacy has shown that teachers have different understandings of information literacy. By operationalizing the theory of critical information literacy and Bruce's seven faces of information literacy, this dissertation fills an empirical gap about how to apply these theories to high school teachers and documents that teachers provide. This study's findings support assertions from Smith (2013), Williams and Wavell (2007), and Yu et al. (2016) that teachers do not have a consensus about their understanding of information literacy. Furthermore, this study also supports the findings of Boon et al. (2007) and Webber et al. (2005), who utilized Bruce's seven faces of information literacy to determine teachers' definitions. Their studies further reiterated that there is no consensus about the definition, but that it largely revolves around being able to find and access information and becoming critical thinkers (Boon et al., 2007; Webber et al., 2005). This study expands the framing of Bruce's seven faces of information literacy and connects the seven frameworks to documents that teachers submitted, rather than just the definitions itself. This provides a way to view teaching information literacy not simply as a set of skills, but as

a range of experiences where students can practice accessing, learning, and disseminating knowledge.

Study Limitations

A significant limitation to my study was limited participation of schools and a low response rate likely due to the COVID-19 pandemic. Due to distance learning and school closures leading into the 2020–2021 academic school year and beyond, all communication had to be conducted remotely. In addition, I provided the teachers in my study with the questions prior to the interview. As teachers were in the midst of the pandemic and dealing with distance learning, the teachers requested the questions before the interview started so that they could be sure to answer the questions. As such, when I asked teachers about their definitions of information literacy, they may have had time to prepare an answer they thought I wanted to hear, or they may have even looked up what information literacy is online. This may have contributed to their reported definition of information literacy, which may not have been genuine and truly reflected the understanding or misunderstanding of the topic.

Additionally, the impact of COVID-19 may have affected how teachers responded. The lack of collaboration and their sometimes negative comments about students may have been the impact of an unprecedented school year, where they had to transition to online learning with little time to prepare, without access to the right training, and with the many pressures of dealing with families and their students while everyone was at home.

Additionally, the mental effects of COVID-19 for teachers having to accommodate their students and families also could have affected the way they responded. They may have been abrupt and negative and talked about their assignments in a negative way. Even so, I

recognize and appreciate that during a global pandemic, the high school teachers still made time to participate and speak with me for the interviews.

The second limitation of my study design was my small sample size. In this study, I interviewed 10 English teachers, but only three history teachers, one science teacher, and one elective AVID (Advancement Via Individual Determination) teacher. In a regular school year, teachers likely would have been more open to being interviewed, especially if it occurred near the end of the school year, as my study did. Due to the pandemic, eliciting interviews was even more difficult, as I was limited to emails, text messages, and following up through texting or phone calls. Because many teachers were dealing with possible burnout, low student engagement, and worry for young children or elderly parents, the number of respondents was very low. As such, the results may not be generalizable to other schools or other parts of the country, as my sample size was focused on one school in Los Angeles, California.

Despite the limitations of the small sample size, the study yielded findings that provided a very small but still important contribution to the literature on how teachers define and incorporate information literacy in their curriculum. Due to the small sample size and the limited variety of teachers, I can provide only recommendations that cannot be generalized for groups. The following are some recommendations for future research on this topic.

Recommendations for High School Teachers

Recommendation 1: Teachers Should Agree on a Common Definition and Teaching Strategy

While agreeing on a common definition and teaching strategy seems to be obvious and a simple fix, this can be a difficult task. The teachers in the school district get together

for one week of professional development after the school year ends, and that would be an opportunity for them to determine a definition for information literacy. There is opportunity for cross-curricular alignment and collaboration, so coming up with a school-wide definition for information literacy would provide consistency. Based on this study, I find that my definition of information literacy is different from the teachers at my site. I understand information literacy as being able to critically evaluate the information students find, especially to examine how sources may represent bias or misinformation, or reinforce dominant ideals that are represented in the media (ALA, 1989; Kuhlthau, 1987; Zurkowski, 1974; Kellner & Share, 2019). Meanwhile, the teachers in this study did not have a consensus about what information literacy means, an idea supported by studies from Probert, 2009, Smith, 2013, and Williams and Wavell, 2006. However, most teachers in this study largely understand that information literacy as finding information, which is a skill set rather than a conceptual understanding of information literacy (Williams and Wavell, 2007). Yevelson-Shorsher and Bronstein (2018) believed that teachers' own lack of knowledge about information literacy may hinder students' own learning about information. Therefore, developing a definition with a critical lens would allow teachers to begin strengthening and developing curriculum that incorporates critical information literacy.

With attendance at summer planning sessions declining, and because of the move to online meetings during the pandemic, not many teachers attend professional development opportunities. Because teachers cannot meet over the summer, I propose that the members of the English department come to a consensus about how they define information literacy and how they will instruct students in the classroom at the beginning of the school year. In structuring discussions about information literacy, I would survey teachers in the English

department about their understanding, come to consensus about their definition, and then use our definition to collaborate on assignments. Based on the data in this study, most teachers believe that information literacy is about looking for information, which reduces the concept to just skills. Some teachers describe having the skills of finding information, such as locating relevant information, using search engines, summarizing and integrating sources as being information literate (Williams and Wavell, 2007). In order to avoid this skills development mindset, teachers need to connect information literacy to subject content, so that students can link the process of learning information literacy to creating new knowledge and becoming more conscious about the world (Freire, 2007; Williams and Wavell, 2007). Therefore, a definition that allows for a critical information literacy perspective will move teachers away from focusing on just simply skills to developing students who are self-actualized and use their education to transform the world.

Recommendation 2: Provide a Librarian at Each School Site to Teach Critical Information Literacy

In order to strengthen information literacy instruction, I recommend that a credential teacher librarian be available at each site. In 2020-2021, there were only 621 school librarians in the state of California (National Center for Education Statistics, 2021), with one teacher librarian per 9,667 students (Lambert, 2022). Providing a teacher librarian at each school site allow opportunities for the librarian to support students, but also collaborate with teachers through a teaching cycle. McDonough's 2014 study of teacher librarians stated that teaching students about information and its uses, promoting student choices, and utilizing topics that are meaningful to students are effective strategies to teach critical information literacy. Likewise, Tewell's 2018 study surveyed 13 librarians who stated that they taught

critical information literacy through questioning how knowledge is presented and introducing counterculture media as a way to challenge hegemonic views (Tewell, 2018). The librarians utilized teaching strategies such as dialogue and collaboration and problem posing pedagogy to reflect on real life problems (Tewell, 2018). In these studies, teacher librarians focused on the concept of information literacy so students develop a consciousness to ask questions and create knowledge rather than information transfer from the sources to a paper. Therefore, I recommend for high school districts to hire specifically a teacher librarian to support the teaching staff in educating students about critical information literacy and to encourage collaboration amongst the instructors. Many of the teachers also speak about using EBSCO Host and Google Scholar in this study with their students, and having the support of the teacher librarian who has a background in both teaching and library sciences can help teachers to reinforce these skills in the classroom.

Recommendations for High School District Administrators

Recommendation 1: Create a Class That Allows Students to Practice Information Literacy

A recommendation for administration is to create a research methods class in which students can go into depth about the topic. The College Board has recognized the need for information literacy, creating a Research and Seminar class in which students can enroll their junior and senior years and earn a Capstone certificate. However, this program has to be approved by the school, and teachers have to attend training in order to be eligible to teach the class. I would recommend that administrators prioritize this program and send teachers to the training in order to build their skills and designate a class in which students can

strengthen their information literacy skills, and teach them to become critical thinkers about information.

Recommendation 2: Create a Reading Campaign

Additionally, another recommendation would be to have explicit conversations around literacy and what it means to be literate. In Research Question 1, teachers defined information literacy as “learning to read.” This may be due to the fact that the word *literacy* is central to the topic of information literacy. Moreover, teachers talked about how difficult it was for students to access higher-level texts, especially those from abstracts of studies students may find from Google Scholar or EBSCO Host. However, the documents they design imply that students’ reading levels are high enough for them to access any text and gather evidence in order to use it in their papers. Nevertheless, the state testing data shows that many students are not exceeding standards on their Inquiry/Research strand of the SBAC, with only 32.37% of all students scoring above standard, and 3.08% of EL students scoring above standards. These numbers indicate that the reading campaign would not only support students with low information literacy skills, but students with low literacy in general.

Both Abimbola, 2010, and Bussert-Webb and Henry, 2016, conducted studies that determined that students with low literacy reading skills will have difficulty developing information literacy skills. They may be uninterested in what they read (Abimbola, 2010), or they may lack critical thinking skills that prevent them from being able to evaluate and understand sources, which will hinder information literacy skills (Bussert-Webb and Henry, 2016). In order to increase reading Lexile levels, I recommend that the administration start a reading campaign that encourages students to see how reading is essential to everyday

learning. According to the data in this study, especially Question 1 in which some teachers defined information literacy as being able to read, literacy skills is incredibly important for students to understand the text, and to also communicate their opinions. Many of the teachers mentioned that even if students can access informational texts and find research articles online, they cannot access the text because the Lexile level is so high. For this reason, encouraging students to read will allow them to navigate difficult texts, which will then allow them to make sense of, evaluate, and synthesize different information sources. In previous years, our school and district started a campaign called “Show me the math” in order to emphasize how math can be seen in everyday circumstances and to encourage students to view math in a positive manner. A reading campaign would allow students to see reading as vital to their everyday life, in and out of the classroom.

Research Recommendations

Many teachers expressed a desire to be trained in information literacy so that their teaching style might become more effective in the classroom. However, the way teachers practice information literacy may be different, as they may be influenced by their own educational backgrounds or the classroom time limitations that require them to skip steps or simply provide students with sources to meet the time constraint of the curriculum map. Therefore, a study that compares and contrasts teachers with training about up to date information literacy and critical information literacy verses those with less training would highlight the effects and necessity of incorporating information literacy into the curriculum.

Aside from solely discussing information literacy, many teachers discussed the effects of social media and information online that may influence how students develop. Many teachers in this study asked for training in information literacy. One particular teacher,

who attended the UCLA Teacher Education Program, specifically mentioned a desire to be trained in critical media literacy. Rather than just focusing on information that students encounter online, discussing how the internet and social media influences people and the power dynamics that occur would give students a more critical awareness of the information they find. One teacher in the study mentioned how a student of hers was radicalized based on the information they found online. This signals that teachers witness the effects of media and the internet, but they do always believe that they have the skills to combat it. Providing teachers training in critical information literacy and critical media literacy to build their students' skills in critiquing the media they see would encourage students to question all information instead of consuming media and utilizing it for entertainment without thinking about its effects on their psyche.

Another possible study is to consider how the ethnic and gender identities of the teachers can contribute to their definitions of information literacy and how they present lessons in the classroom. Teachers' own experiences of marginalization and privilege may contribute to how they access and understand information as well. Table 1 showcases the teacher demographics of this study and includes their years of teaching, racial demographics, and teaching subjects. A future study could examine how teachers' backgrounds, their pre-service experience, and their continuing professional development may influence how they teach information literacy.

Lastly, a longitudinal study to assess what students know about information literacy and how that would align with teacher's definition would be beneficial. Researchers can conduct a pre-survey of what students and teachers know about information literacy and how they interpret the concept. Then, after students have had lessons and experience with

information searching and learning, a post survey at the end of the year could provide information about the effectiveness of the information literacy instruction. The data collected will show whether students and teachers are aligned in their definition, and if their instruction help to shape students' perception of information literacy.

Future Methodological Approaches

In reflection on the methods of my study, a multi-site study would provide opportunities for me to triangulate the data. All three school sites in my district were incorporating research papers into their curriculum, with a focus on searching for and finding information online. Collecting data (e.g., research papers) and interviewing teachers at all three sites would likely provide more information about the range of expectations and content that teachers assign students. This may contribute to more generalizable information.

Conclusion

This study began because I was interested in how teachers are incorporating information literacy into their classroom instruction. Because my school site is incorporating a research paper into each grade level throughout English classes, and as this was the first time information literacy was being formally introduced into the curriculum, it became essential to understand how teachers view information literacy and how they are integrating it into the classroom. Beyond research, information literacy teaches students to learn how to learn, and it is essential to creating a well-informed citizenry. If there is vertical alignment of the curriculum, then it would be beneficial for teachers to have a common definition they can refer to and to agree on the skills that will be taught at each grade level. In a school that also has a high turnover rate, it is essential to have specific strategies and curriculum that new teachers can depend on year after year. On a personal level, as a teacher, I am always seeking

to grow and understand my students and enhance my own teaching practice. It is only through this growth and reflection that I can continue to be the best teacher I can be for my students.

APPENDIX A

INTERVIEW QUESTIONS

[1 hour individual interviews with 15 teachers]

Name of Interviewee:

Date

Time

Place/Location:

Hello,

Thank you so much for taking the time to interview me today. The data that is gathered will help me to better understand teachers' understanding of information literacy, and how it drives their curricular and pedagogical instruction.

The interview should take 45-60 minutes. I will be recording and taking notes, but all of the information is confidential. Your name will not be used. The interview is for my doctoral program dissertation on Information Literacy Skills in the Secondary Classroom. If at any time you feel uncomfortable or do not want to be recorded, please let me know and I will turn off the recorder.

Do you have any questions before we get started? Let's begin!

Warm-up: *I will begin with questions about you and your role in the classroom.*

1. ____, how long have you taught at this school?
 - b. What subjects have you taught?
2. This interview is going to be about Information Literacy.
 - . How do you define information literacy?
 - a. Where did you learn about this definition?
 - b. What motivates you to teach information literacy?
3. These following are three different scenarios of what information literacy may look like in the classroom. Based on these different scenarios, which may fit closest to what you do? Does your definition fit with any of these scenarios here?

Scenario 1:

A teacher is instructing students on a lesson about media messages. He pulls up news articles about the attack on the White House in Washington DC that happened in January of 2021. The teacher encourages the students to look at the headlines and determine what the

messages are saying, who is writing the articles, and how these messages are perceived by the audience. The teacher then asks students to look up articles on their own about the attacks and share their own analysis with the class.

Scenario 2

A teacher has just finished a lesson on a unit about juvenile justice. The teacher provided and reviewed informational texts with the students, noting the author, date, and main ideas. The teacher has students fill out a graphic organizer with pros and cons from the texts, and students write their essay based on their brainstorming worksheets and guided lessons in class.

Scenario 3

A teacher is starting a research unit in class. The teacher reviews with the students credible websites, an acronym to evaluate source credibility, and provides graphic organizers for students to collect information. Students choose their own topic and start their research. Some students use EBSCO Host, the database the district subscribes to, and some students simply Google articles. The teacher reminds students to follow the steps for searching and evaluating, focusing on finding sources that may fit their topic by looking at key words.

Curricular and Pedagogical Design

4. Think back to a lesson you taught around information literacy. What does it look like in your classroom when students are participating in an information literacy lesson? Walk me through that lesson:
 - . What was the focus for this lesson?
 - a. What did you ask students to do for this lesson?
 - b. What were you hoping students would gain from this lesson?
 - c. How successful do you think the lesson was?
 - d. What are some key information literacy skills you think students should learn when it comes to this lesson
5. How do you think these lessons or skills connect to students' daily lives, college, or career plans?
6. What other lessons or worksheets have you provided to your students around information literacy?
7. What specific instructional strategies do you use to support students learning _____(each specific skill of information literacy)?
8. What resources (curricular materials/librarian, experts, websites, videos, conferences) do you use to support students in learning these Information Literacy skills?
9. A while ago, you mentioned that IL was _____. How does your definition influence the strategies you used in the classroom?

10. How have you learned about these strategies or how to teach Information Literacy?
11. When you evaluate your students' skills in IL, what approach do you take?
 - . What guides your thinking about their IL skills?
 - a. How do you do an assessment?

Challenges and Recommendations

12. What are some of the challenges you find to happen frequently in helping students become information literate? What are some other challenges that you often find when supporting students' in becoming information literate?
13. How do you respond to those challenges?
14. What resources have you personally found to be helpful? Is this in planning or preparing IL lessons?
15. Imagine that you're working with a new teacher around IL, what recommendations would you give them? What resources would you share with them?
16. What recommendations do you have for your department to broaden its (effective) teaching of IL? What recommendations do you have for how admin can support IL?

Closing

17. Is there anything else you'd like to tell me about teaching IL? Is there anything you thought I might ask that I didn't ask?

I truly appreciate you taking the time for this interview. Thank you.

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