Middle School Students' Use of Cognitive and Sociocultural Resources During an

Examination of a Contested Topic in a Digital Space

by

Hyeju Han

Bachelor of Arts, Ewha Womans University, 2013

Master of Arts, Ewha Womans University, 2015

Submitted to the Graduate Faculty of the

School of Education in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

University of Pittsburgh

2021

UNIVERSITY OF PITTSBURGH

SCHOOL OF EDUCATION

This dissertation was presented

by

Hyeju Han

It was defended on

June 29, 2021

and approved by

Dr. Linda Kucan, Professor, Department of Teaching, Learning, and Leading

Dr. Amanda Godley, Professor, Department of Teaching, Learning, and Leading

Dr. Detra Price-Dennis, Associate Professor, Teachers College, Columbia University

Dr. Byeong-Young Cho, Associate Professor, Hanyang University, Seoul, Korea

Dissertation Advisor: Dr. Emily Rainey, Assistant Professor, Department of Teaching, Learning, and Leading

Copyright © by Hyeju Han

2021

Middle School Students' Use of Cognitive and Sociocultural Resources During an Examination of a Contested Topic in a Digital Space

Hyeju Han, Ph.D.

University of Pittsburgh, 2021

My dissertation research is a small-scale qualitative study that focuses on middle school students' use of cognitive and sociocultural resources while they investigate a contested topic in a digital space. This study is informed by multiple theories and studies of reading and literacy from both cognitive and sociocultural perspectives. To closely examine students' digital literacy practices, I brought qualitative approaches to student-generated verbal protocols to identify and interpret readers' cognitive, affective and emotional processes, responses and thoughts. I selected a public charter middle school in an urban setting as a research site and recruited eight eighth-grade students, all of whom were Black girls. The participating students engaged in two online digital literacy tasks (pre-selected source reading and online reading inquiry) and one writing task (writing social media posts). The tasks centered on a current social issue that is of particular local importance: *gentrification*.

The findings of this study revealed that the students activated a variety of resources during critical digital literacy tasks, coordinated those resources in three dimensions of literacy practice in a digital space (cognitive–constructivist, sociocultural–critical, and multimodal–digital), and acted as text critics and activists through the interplay of various resources. In particular, even those students who might be considered effortful readers took critical stances when they wrote a social media post. These results provide further evidence for the move away from decontextualized

literacy instruction and assessment and toward approaches that would honor and build upon the many sociocultural resources that young people bring to literacy classrooms, including their knowledge of social media and virtual modes of communication.

Table of Contents

List of Tables

List of Figures

Preface

First and foremost, I am deeply grateful to my advisors, Dr. Byeong-Young Cho and Dr. Emily Rainey, for their invaluable advice and continuous support throughout my PhD study. By sharing their immense knowledge and plentiful experience, they have encouraged me at every stage of my academic research and in my daily life. I would also like to express my sincere gratitude to Dr. Linda Kucan for her unwavering support and belief in me, as she provided me with important opportunities for both research and teaching during the course of my PhD degree. I would not have accomplished this work without her guidance and thoughtfulness. Additionally, I would like to extend my thanks to committee members, Dr. Amanda Godley and Dr. Detra Price-Dennis for their insightful comments and feedback, which pushed me to sharpen my thinking and raise my work to a higher level.

I am also thankful for my friends who have been there for me during the highs and lows, and to my dear cohort in the Language, Literacy, and Culture program. Meghan, Chris, Tom, and DaVonna, thank you for being my inspirational scholarly collogues and my best friends. Your support has been invaluable. To my dear Pittsburgh friends, Karen, Monica, Tim, Polar, Miroo, and Pami, thank you for the memories we have shared over the past few years, which have made my time in Pittsburgh so wonderful. To my friends in United States and Korea, Yeonkyung Anabel, Jiseung, Solji, Gaye, and Eunsoo, thank you all for your endless support and love.

I would like to give a special thanks to participants, teachers, and the principal who participated in and supported this study. Without them, my work would not have been possible. In particular, I am thankful to my eight wonderful participants who shared their truthful thoughts and experiences with me, which I believe should echo and be heard.

1.0 Introduction

This is a small-scale qualitative study that focuses on middle school students' use of cognitive and sociocultural resources while they investigate a contested topic in a digital space. This study is informed by multiple theories and perspectives of reading and literacy by conceptualizing adolescent readers' use of cognitive and sociocultural resources in a digital space. In particular, I focus on young students' critical digital literacy practices, which I broadly frame based on a culturally sensitive view of literacy that is related to readers' culture, ways of being, and critical awareness of the text, power, and ideology (Freebody & Luke, 1990; Gee, 1996; Janks, 2018; Street, 1984). To describe students' engagement with their cognitive and sociocultural resources, this study uses student-generated verbal report data as a primary data source.

1.1 Goals of the Study

Reading, learning, and solving problems using online information is an essential part of our daily lives (OECD, 2021). Today, 81% of Americans say they go online on a daily basis and one-third of them claim they are almost always online (Pew Research Center, 2019). Furthermore, according to the 2018 Pew Internet and American Life Project survey, close to half of U.S. teenagers say they are on the internet almost constantly, and 92% of teens (age 13 to 17) go online daily and spend less time with traditional media, such as books, magazines and television.[1] Given

---

[1] https://www.pewresearch.org/fact-tank/2018/11/28/teens-who-are-constantly-online-are-just-as-likely-to-socialize-with-their-friends-offline/

these realities, more and more scholars and organizations are acknowledging the importance of digital literacy practices and online contexts, including the need to support youths' digital literacies (International Reading Association, 2021; OECD, 2021).

However, educators and researchers have raised concerns that youths' digital literacies are not being sufficiently supported in K–12 classrooms without reflecting the needs of today's learners in a new textual environment (Leu et al., 2009). In their National Academy of Education (NAEd) report, Fitzgerald, Higgs, and Palincsar (2020) argued that there are several warning signs in technology-related reading comprehension research and instruction, including a lack of emphasis on developing readers' ability and motivation to evaluate the credibility of online information that may guide their active civic engagement.

Particularly in online settings, where an unlimited amount of information is continuously published, edited and distributed, today's readers need to read, test, and evaluate text information, which must go beyond achieving a basic understanding of the main idea of the text (Shannon, 2017). Critical reading of web sources requires readers to be engaged in sophisticated reading processes while using different cognitive resources (e.g., prior knowledge, reading strategies) and sociocultural resources (e.g., funds of knowledge, identities) to construct meaning from texts and to have a critical awareness of texts and authors. The Reading Framework for the 2026 National Assessment of Educational Progress (NAEP, June 21, 2021) also drew upon both the cognitive research tradition in reading (Anderson & Pearson, 1984; Kintsch, 1998; RAND Reading Study Group, 2002; Pearson et al., 2020) and sociocultural framing of literacy (Lee, 2016, 2020). The Framework specifically stated that "to comprehend, readers must engage with text in print and multimodal forms, employ personal resources that include foundational reading skills, language, knowledge, and motivations, and extract, construct, integrate, critique, and apply meaning in

17

activities across a range of social and cultural contexts" (NAEP, June 21, 2021, p. 5). Nevertheless, there has been a lack of empirical research with concrete examples investigating (i) what it really means to read and think critically and strategically in digital spaces by employing personal resources and (ii) how we should teach critical digital literacy in classrooms.

Moreover, there are open questions on the nature of youths' critical reading and writing in online social media spaces. Social media has been excluded from most curricular efforts focused on digital literacy—in fact, many schools have attempted to "manage" the risks of social media by simply blocking social media sites on school computers and networks (Turner & Lonsdorf, 2016). However, many youths engage heavily on social media and may bring substantial resources to their literacy engagement in social media spaces. For this reason, I join other researchers who argue that social media is fertile ground for learning about and supporting youths' digital literacies (e.g., Blaschke, 2014; O'Keeffe & Clarke-Pearson, 2011; Stone & Logan, 2018).

Last but not least, although educational research has a rich body of literature regarding Black literacy practices, knowledge about Black students' digital literacy practices remains limited (Price-Dennis, 2016). Hall (2011) argued that Black students' literacy practices are often informed by their historical legacies of resistance to social inequality and dehumanization. More specifically, there have been many studies that concentrated on Black female students' literacies (e.g., Muhammad & Haddix, 2016; Richardson, 2007). These studies have defined and contextualized Black girls' literacies as social practices that reflect cultural power dynamics within texts. Price-Dennis (2016) suggested that that because Black girls' literacies embody a critical stance that supports the juxtaposition of an unjust social system, engaging in digital texts can support them in acting as active learners. Because the participants of the present study were Black urban youths,

especially Black girls, this study can contribute to the body of literature on Black female students' digital literacy by investigating the ways in which they examine a social issue in a digital space.

In this dissertation, I seek to extend the research literature by tracing youths' sociocultural and cognitive tools as they engage in digital settings, including social media. I examine how middle school students activate and employ their cognitive and sociocultural resources as they investigate a contested topic in a digital space.

1.2 Contributions to the Field

1.2.1 Building Relationship Between Cognitive and Sociocultural Resources in Digital Literacy Practice

Within the studies of online reading, there have been clear distinctions between the studies that focused on cognitive resources (e.g., prior knowledge, reading strategies, epistemic processing) and sociocultural resources (e.g., funds of knowledge, identities). Some studies were rooted in a cognitive perspective, while others were rooted in a sociocultural perspective of reading that shaped different assumptions, study designs, and implications. Informed by these investigations, this study suggests the comprehensive understanding of online reading that includes both cognitive and sociocultural aspects of reading and literacy.

By drawing upon traditional reading theories, such as constructively responsive reading (Pressely & Afflerbach, 1995) and the Construction–Integration model (Kintsch, 1998), studies have investigated the knowledge and process dimensions of critical reading. There have been studies that examined how readers use their cognitive resources, such as language proficiency

(Davis & Neitzel, 2012), print reading skills (Cho, 2014), prior knowledge (Coiro & Dobler, 2007), and reading strategies (Cho et al., 2017; Coiro & Dobler, 2007). In these studies, online reading is defined as an active and constructive meaning-making process in which readers utilize various cognitive resources when reading in an online setting.

These studies approached online reading as an extension of print reading that, as a new textual environment, requires new or more complicated reading strategies in addition to traditional print reading strategies. That is, these studies have investigated how reading processes differ depending on the medium of reading, namely print or online texts. Specifically, the unbounded text environments of the internet and how readers navigate their reading within those environments have been central issues in online reading research.

Another aspect of critical reading that has been explored by empirical studies on online reading are the reading and thinking processes that readers perform while accessing new information and knowledge. Such studies have sought to answer specific questions, such as "why readers perform cognitive processing in particular ways and how individual differences beyond strategies and skills may determine the process and product of meaning making are often neglected" (Cho, Woodward, & Li, 2018, p. 198). To find the answers, studies have investigated the roles of readers' individual differences and abilities in their online reading process, such as epistemic beliefs (Barzilai & Zohar, 2012; Cho, Woodward, & Li., 2018; Mason, Ariasi, & Boldrin, 2011) and domain-specific thinking—especially historical thinking (Cho, Han, & Kucan, 2018). The results of these studies emphasize the importance of metacognitive skills such as judging information, monitoring knowing processes, and regulating learning actions when learning from web sources that may be biased, ambiguous, or even false.

Because these studies were interested in individual readers' cognitive reading processes while engaging in online reading, most were conducted in an instructional setting such as a school classroom or laboratory (e.g., Davis & Neitzel, 2012; Mason, Ariasi, & Boldrin, 2011), which shows that they focused more on academic reading of web sources than on personal and private ways of reading. In addition, most of the studies used think-aloud protocols and conversation analysis of individual reading or paired reading processes that can infer readers' cognitive processing, such as reading strategy uses or reading patterns.

On the other hand, there have also been studies grounded in a sociocultural perspective of reading (e.g., Gee, 2000; Street, 1984) and critical literacy (e.g., Freebody & Luke, 1990; Freire, 1970) to examine critical online reading as social practices that are related to readers' culture, ways of being (identity), and critical awareness of the text, power, and ideology. With this wide range of interests and approaches to literacy practices in digital spaces, these empirical studies explored a variety of topics, such as readers' reading and writing practices in social networking services (e.g., DeAndrea, Shaw, & Levine, 2010), blogging (e.g., Souto-Manning & Price-Dennis, 2012), text messaging (e.g., Lam, 2009; Lewis & Fabos, 2005) and fan pages (e.g., Kim & Omerbašić, 2017), with specific interests in identity, personal or cultural resources, and critical awareness of power relationships within texts.

These studies investigated not only online reading but also writing and communicating practices that reflect people's daily use of the internet and the way they encounter, read, write, and communicate information. That is, the primary focus of these studies has been on social and cultural contexts and how people are engaging in and shaping different literacy practices within those contexts. While some studies view online reading practices as unique and solitary practices that are performed and enacted only in digital spaces, other studies recommend further

investigation of the relationships between schooled literacy practices and digitally shaped literacy practices.

One of the few studies that has examined online reading practices from a critical literacy framework is Damico, Baildon, Exter, and Guo's (2009) work. They collaborated with a ninth-grade social studies teacher using an Asian Studies Social Studies curriculum and explored how middle school students with different cultural backgrounds used their cultural and contextual resources in meaning-making with politically sensitive web-based texts. They argued that "teachers can guide students in discussing, comparing, and contrasting the cultural and contextual knowledge they have to make sense of texts in order to learn more with and from one another about the resources, experiences, knowledge, and perspectives they bring to the classroom" (p. 325). Although this study contributed to our understanding of how readers activate sociocultural resources during online reading, it had critical limitations in that it was bounded in a school context with discipline-specific content, which may have limited readers' thinking and reading. More research needs to be conducted on the informal contexts of online reading with real-life topics to further investigate how readers' cognitive and sociocultural resources are involved in their reading of web sources.

In conclusion, there have been two distinct lines of investigation into online reading based on different theoretical stances and roots, which leave the relationships between cognitive and sociocultural resources unclear. The field requires a fuller conceptualization of online reading that integrates both cognitive and sociocultural aspects of reading. In an attempt to respond to this need, I seek to build a more broad and comprehensive understanding of online reading by engaging both lines of work.

1.2.2 Possible Implications for Pedagogy and Practice

The study of readers' use of cognitive and sociocultural resources in online reading can have important implications about how we conceptualize and foster adolescent readers' reading development, by reflecting on "*who the readers are.*" Although previous studies have considered students' background and interests when closely examining their online reading processes, many did not consider individual readers' sociocultural backgrounds. Because of the open-ended character of the online textual environment, each reader can read, think, and communicate in different ways based on their personal and cultural backgrounds, which can shape their identity and influence their choices for meaning construction while reading online.

Despite the importance of readers' identities, within online reading research, most studies focused on readers' sociocultural background with only a limited concept of identity that has not taken into consideration such factors as race, gender, and cultural groups (e.g., youth culture). As Esteban-Guitart and Moll (2014) explained in their definition of *funds of identity*, "the self includes everything that we consider 'ours' (mine), those things, objects, or people who are part of our experience—whatever might be considered as meaningful to us" (p. 32). Because identity is an ambiguous and abstract concept, there needs to be a more comprehensive but clear understanding of readers' identity when investigating their online reading processes.

Moreover, even if research on online reading processes documents a relatively wide range of participants' ages, from kindergarten students to adults, there have been limited studies on learning trajectory or developmental stages. It is not yet known how young students develop their online reading processes and how their reading processes and practices are similar to, or different from, those of adult readers. Most studies have focused only on the differences in reading abilities or sociocultural contexts among students in the same or similar grade levels (ages).

Although there is a common assumption that elementary and middle school students are too young to discuss social issues like racism and inequities, they are in fact capable of demonstrating critical understanding by noticing differences or in equalities happening in society (Rogers & Mosley, 2006; Stribling, 2014). Therefore, there is much to be explored on how students' identity and their understanding of worlds impact their thinking and reading when engaging in online reading processes with social issues. The results from this study can draw attention to the need for inclusion of readers' identities as considerations in curriculum and instruction practices.

Overall, from a sociocultural perspective, reading comprises not only the act of reading, but also the beliefs, attitudes, and social practices that literate individuals and social groups, and it is closely tied to cultural and power structures in society (Freebody & Luke, 1990; Gee, 1996, 2000; Street, 1984). That is, to examine how readers read and think critically, it is necessary to consider not only the readers' active use of cognitive resources, such as sophisticated reading strategies and skills, but also their utilization of sociocultural resources. Despite the fact that well-established online reading studies have identified different aspects of reading processes and practices, more research is needed to encompass individual differences in terms of different sociocultural resources of readers that they bring to their online reading. This study will be able to suggest new ideas for educators when they develop a curriculum or lessons for online reading or digital literacies in a way that takes into account individual readers' personal and cultural backgrounds and identities.

1.3 Key Concepts

In this section, I define key concepts that construct my perspective towards a culturally sensitive view of literacy, a contested topic, and marginalized and minority groups.

1.3.1 Culturally Sensitive View of Literacy

This study reflects on a culturally sensitive view of literacy that echoes three important sociocultural perspectives on literacy as suggested by Perry (2012): (i) literacy as social practice, (ii) multiliteracies, and (iii) critical literacy. First of all, the notion of literacy as social practice was driven by Street's (1984) work, which distinguished between "autonomous" and "ideological" models of literacy. The autonomous model of literacy explains literacy as independent of social context. In this view, literacy has been seen as a neutral mechanism that has its system of support. Even though literacy criteria and target populations have changed or expanded, literacy education before the twentieth century remained focused on functional literacy, which is oriented to technical skills and the cognitive aspects of reading and writing (Resnick & Resnick, 1990). The ideological model of literacy, on the other hand, views literacy practices as integrally tied to societal cultural and power structures. The notion of "context" here is not a narrow meaning of interaction or network, but broader parameters such as organization, conceptual systems, political structures, and economic processes. In this perspective, the focus is more on literacy as power and ideological practices within the context, which can lead to new insights related to the nature of culture and power, as well as the interaction between communication institutions and ideologies in the contemporary world. Later on, the New Literacy Studies (Buckingham, 1993; Street, 1998; Lankshear & Knobel, 2003), have added to this theory of literacy as social practice.

25

Second, the theory of multiliteracies (New London Group, 1996) was derived from but had different directions from theories of literacy as social practices. It acknowledged the importance of social contexts and power relationships in people's literacy practices, but it emphasized cultural and linguistic diversity that leads to multiple ways of communication (Cope & Kalantzis, 2000, 2009). In particular, the concept of multimodality (Kress, 2000, 2003) has been promoted, which considers multiple modes of communication, such as written language, images, colors and shapes, to be important tools for sophisticated meaning-making. With the rapid change in multiple media and tools, there has been increasing emphasis on the relationships between digital technologies and literacy practices associated with them, which led to a distinctive approach in the New Literacy Studies (Coiro, Knobel, Lankshear & Leu, 2008; Lankshear & Knobel, 2003; Street, 2003). Literacy is viewed as a new social practice, as well as important new strategies and dispositions required for online reading comprehension, learning, and communication from a perspective of new literacies. Some studies carefully examined a set of new literacies required by specific technology and its social practices such as text messaging (Lewis & Fabos, 2005), online reading comprehension (e.g., Cho, 2014, Cho & Afflerbach, 2015), and multimodality in online media (e.g., Kress, 2003).

Finally, just as the perspectives described above emphasized power relationships, critical literacy also emphasizes power, albeit with an expanded consideration of matters of agency and identity (e.g., Alvermann & Hagood, 2000; Moje & Luke, 2009). A more thorough understanding of identity based on sociocultural perspectives on literacy recognizes that identities mediate, and are mediated by, the texts that people read, write, and talk about (Moje & Luke, 2009). Hagood (2002) claimed, "what is central to critical literacy that focuses on identity is the influence of the text and specifically of identities in texts on the reader. The text, imbued with societal and cultural

structures of race, class, and gender, marks the site of the struggle for power, knowledge, and representation" (pp. 250–251). In conclusion, a culturally sensitive view of literacy within sociocultural perspectives on literacy focuses on engaging in authentic, real-world practice, challenging competence-based literacy, and understanding power relationships, agency, and identity.

1.3.2 A Contested Topic

In this study, I chose a current issue of interest—gentrification—which is also a socially contested topic that includes essentially contested concepts. From a culturally sensitive view of literacy, it is also important to choose a topic for literacy practices that reflects a current issue of interest that students can relate themselves to and that allows them to demonstrate their thinking about social justice, power, and activism (Hall, 2011). For example, Price-Dennis (2016) found that participating students could position themselves as co-constructors of knowledge, which was different from passive learning, when they participated in literacy events that were relevant to their own lives and issues important in their communities. In particular, an *essentially contested concept* (Gallie, 1964) can be a helpful term to understand a contemporary issue of interest that involves an understanding of different interpretations of qualitative and evaluative notions, such as social justice. For its part, *social justice* is an essentially contested concept that has only conflicting interpretations, but no true or core meaning (Gallie, 1964), which can be understood as the plurality of interpretations (Tietje & Cresap, 2018). In this regard, I deliberately chose a topic for digital literacy tasks that embraces essentially contested concepts (e.g., social justice, equality) that will encourage students to express diverse opinions and thoughts of their own towards the topic and the contested concepts that exist within it.

1.3.3 Marginalized and Minority Groups

From a sociologist's point of view, Louis Wirth defined a minority group as "any group of people who, because of their physical or cultural characteristics, are singled out from the others in the society in which they live for differential and unequal treatment, and who therefore regard themselves as objects of collective discrimination" (1945, p. 347). A smaller population size is not a defining feature of a minority because larger groups might also be called minorities when they have less power than others. By the 1960s, "minority" was effectively a synonym for African Americans, but in the 1970s, the term came to include different groups who experience unequal treatment and discrimination (Laurie & Khan, 2017). Recently, the term "minority" is "usually equated with being less than, oppressed, and deficient in comparison to the majority (i.e., White people)" (American Psychological Association, 2020, p. 145).

As such, in this study, I used the term "minority" as referring to a socially constructed and historically mediated group of people who share experiences that are generally shaped by power and socioeconomic status (Peters & Chimedza, 2000). In particular, I used the terms "minority group" and "marginalized group" by recognizing that non-White individuals (e.g., Black, Latinx, or Asian) are characterized as minorities through social constructs and processes (e.g., racism and oppression) that are beyond their control (Wirth, 1945).

2.0 Literature Review

This chapter aims to propose a theoretical construct for this study by reporting results from a review of relevant theories and research literature. The chapter is comprised of two major parts of a literature review:

• Conceptualizing "critical literacy practice" and "digital space"

• Introducing a conceptual framework of Critical Literacy Practice in a Digital Space

I begin this chapter by defining what I mean by critical literacy practice and digital space in this paper to set the criteria for developing a conceptual framework. I then revisit how previous studies has been investigated about critical literacy practice in a digital space. Next, I present a theoretical construct of critical digital literacy practice that synthesizes theories and relevant research literatures of reading from both cognitive and sociocultural perspectives.

2.1 Conceptualization of Critical Literacy Practice and Digital Space

2.1.1 Critical Literacy Practice

The term "critical" has referred to different meanings in different fields of research. Especially in educational research, it has been used as three different entities: critical thinking, critical reading, and critical literacy. Critical thinking has been often used interchangeably with critical reading, more specifically, critical thinking has been considered to be one way to understand the complexity of reading comprehension (Norris & Phillip, 1987).

In the field of critical literacy, on the other hand, critical reading has been studied as political practices that readers use to understand of how texts work by considering texts as constructed, agenda imbued, perspectival, and ideological (Janks, 2000). Multiple strands of research in critical literacy have focused on how readers challenge, question, and talk back to texts that reflect principles of justice, analysis, resistance, and action (e.g., Leland, Ociepka, Kuonen, & Bangert, 2018).

Here, I conceptualize critical literacy in a digital space by drawing perspectives from critical reading and critical literacy while considering its relationships to new textual environments (e.g., internet, social media). During reading, readers engage in various cognitive processes for making inferences, constructing coherent meaning, and achieving reading goals. Additionally, from the view of critical literacy, readers should also be engaged in activities that challenge the texts they are reading and question the author and underlying assumptions. The purposes of critical literacy are for students to realize that language is not neutral, to analyze the power dynamics embedded in language use, and to challenge their own assumptions in language production and reception (Janks, 1993).

Drawing upon the assumption that our society is constructed by unequal power structures, and that such inequalities are maintained or challenged by texts (Friere, 1970), this critical approach to reading offers new understanding of texts by recognizing that all texts reflect on specific perspectives and seek to situate readers to support them (Moje, Young, Readence, & Moore, 2000). From this view of reading, readers are expected to engage in processes and activities to have critical awareness of texts, to confront the power relationships represented in texts, and to take actions for promoting social justice.

In particular, Luke (1995) argued that "texts are not timeless aesthetic objects or neutral receptacles for information. Rather they are important sites for the cross generational reproduction of discourse and ideology, identity, and power within the same communities" (p. 11). This point of view is grounded on critical literacy theory and reflects values such as democracy and equity, questioning and criticism, resistance and activism, and so on, through investigating how meaning is created and connected to power dynamics within particular community of practice (Cevetti, Pardales, & Damico 2001).

One of the representative frameworks that reflects this critical view of reading is the *Four Resources Model* (Freebody & Luke, 1990). By constructing a Four Resources model that explains fundamental parts of competent, critical reading as social practice, they argued that pragmatic and critical dimensions of reading practice are as important as decoding and meaning formation. This model includes four competences: "coding competence (learning your role as code breaker – how do I decode this?), b) semantic competence (learning your role as text participant – what does this mean?), c) pragmatic competence (learning your role as text user – what do I do with this, here and now?) and d) critical competence (learning your role as text analyst – what is this text trying to do to me?)" (Luke, 1992, p. 13). The aspects of reading practice suggested by this model are pragmatic and critical competence that highlight the aspects of reading as contextual, social, and political processes.

Readers are expected to approach texts with a critical mind, to raise questions about how texts promote different perspectives, and to consider whether these beliefs should be adopted. This is referred to as "reading against texts." Rather of accepting a text's storyline in order to uncover hidden meanings about inequalities or be forced to reconsider beliefs about race, this approach prioritizes text analysis and the ways texts are formed. By engaging in these reading practices,

readers can achieve "the development of alternative reading positions and practices for questioning and critiquing texts and their affiliated social formations and cultural assumptions" (Luke & Freebody, 1997, p. 218).

Asking questions while reading will support and prompt readers to assess texts from multiple perspectives with a series of questions in mind: "What does the author want us to know? What different interpretations are possible? What kind of person and with what interests and values wrote this text? What view of the world is this text presenting? How is power used and what effect does power have on others? Whose voice is missing and what alternate ways can texts be presented to give voice to the silenced?" (McLaughlin & DeVoogd, 2004, p. 53).

For example, Leland, Ociepka, Kuonen, and Bangert (2018) suggested the idea of "*talking back to texts*" which is rooted in critical literacy and acknowledge the challenges of fake news in this post-truth culture. By conducting a long-term intervention study in an eighth-grade language arts classroom, they were able to find the possibility of educating students to become critical thinkers who take time to read texts thoughtfully before determining whether they agree, disagree, or require more information to reach a decision.

Therefore, to read and think critically in a digital space should not be considered only as being skillful and cognitively engaged. There also needs to be a discussion about critical reading in an open-ended space of reading by considering readers' belief systems, identity, and practices, as well as their cognitive processing skills in digital settings. Therefore, in this literature review, I consider critical literacy practice as both reading processes and practices for readers to have critical awareness of texts, to confront the power relationships represented in texts, and to take actions for promoting social justice.

2.1.2 Digital Space

The traditional way of defining "digital space" has been typically focused on a change of medium, which can be represented as a change from paper to digital (e.g., e-learning environments, e-books). Especially in the field of multimedia learning, focal research interest has been on how the learners understand texts and their meanings when they are presented in different formats (Mayer, 2001). From this perspective, varying delivery media (e.g., speakers and laptop screens), display modes (e.g., letters and pictures), or sensory modalities (e.g., auditory and visual) are factors that influence readers' understanding of meanings from digitalized multimodal texts,

On the other hand, Buckingham (2015) argued that digital literacy is more than a functional matter (e.g., how to use a computer, how to do online searches) but is about asking questions about the source and understanding how the sources are related to broader social, political and economic forces. In this regard, "digital space" is considered to be an open-ended internet space (e.g., public and private web-pages, social media, web games) where the new ways of reading, writing, and communicating are necessary and performed (Coiro, 2003; Kinzer & Leander, 2003; Lankshear & Knobel, 2003; Leu, 2000). That is, digital literacy is more than just knowing how to operate a computer or conduct an internet search; it is also about asking questions about the source and understanding how the source is connected to larger social, political, and economic issues. In this digital space, understanding how the political, economic, and social context shapes texts with various social purposes is more important than attempting to find the truth. (Fabos, 2004).

2.1.3 Previous Studies on Critical Literacy Practice in a Digital Space

In an online setting, it becomes more important to question, challenge, and read against texts because of the problems posed by online environments such as credibility and reliability of sources, fake news, and unclear authorship. Despite the fact that today's teenagers spend almost nine hours a day online[2] learning about the world through different online platforms (e.g., social media, internet), both middle and high school students, as well as college students, did not know how to analyze or reason about the information they encounter as they engage in online reading (McGrew, Ortega, Breakstone, & Wineburg, 2017). With this problem in mind, many of online reading studies have focused on readers' use of source evaluation strategies as a matter of reliability and credibility (e.g., Bruce, 2000; Bråten, Strømsø, & Britt, 2009). However, only few studies examined how readers pose questions, examine different perspectives, and challenge the content and the author in an online setting.

For example, Damico and Baildon (2007) examined whether middle school students perform critical aspects of online reading that go beyond examining credibility of sources to explore how a website positions their readers (e.g., examining what perspectives are included and omitted on the website, identifying strategies used by an author to attempt to persuade readers). As a result of their think-aloud study with two pairs of students, they concluded it was hard to find

---

[2] Hayley Tsukayama, "Teens Spend Nearly Nine Hours Every Day Consuming Media," The Switch (blog), Washington Post, November 3, 2015, www.washingtonpost.com/news/the- switch/wp/2015/11/03/teens-spend-nearly-...(http://www.washingtonpost.com/news/the-switch/wp/2015/11/03/teens-spend-nearly-nine-hours-every-day- consuming-media).

evidence that the participants engaged in those critical dimensions. They further suggested that it is necessary to expand the critical aspects of online reading that can consider what readers bring to texts (e.g., beliefs, values, biases).

Moreover, to "step back" from a text becomes important to acquire critical distance from a text and to better determine the authors' intentions (Damico & Apol, 2008). Questioning the author's aim assists students in understanding the sociocultural influences in their lives, recognizing their positions in society, and raising questions to identify who is not recognized and heard (Luke & Freebody, 1997). That is, establishing alternative reading perspectives and critiquing texts in order to reveal hidden truths about social injustices or to examine assumptions behind untested online texts is an important element of online reading. By acknowledging the needs to foster critical media literacy practices for young children, Souto-Manning and Price-Dennis (2012) investigated the possibilities of critically repositioning cartoons and other media texts to transform them into tools for more equitable teaching. As a result of their study, preservice teacher educators were able to engage in critical reading of the texts by discussing inequities in education and society and to reposition those popular culture media texts in their classrooms. In addition, Dixon and Janks (2013) provided what readers should consider while engaging with the internet such as "not all the information on the web is equally reliable and which page comes up first when you do an internet search is not an accident" (p. 136), and suggested readers to consider "who owns information and who controls information" (p.142) on the internet.

Furthermore, there has been study on the norms of knowing, practicing, and communicating that are developed within disciplines while taking bias and social justice into account. As Moje (2007) argued, "the norms in disciplines are constructed, practiced, and enforced by people, they are not a set of immutable rules that can be questioned or changed" (p. 29). Stevens

and Brown (2011) investigated how a blog may be integrated into a graduate-level course to improve critical multicultural literacy teaching and learning on the Holocaust. They explored the possibilities of drawing parallels to other social injustices, tragedies, or genocides in their Holocaust lessons by using a blog as an instructional tool, and they discovered how blogging might foster students' thoughtful reflection on difficult educational themes. That is, they found a possibility that learning and practicing discipline literacy in digital space can promote the ways to develop norms of knowing, doing, communicating in a new way that can challenge the bias and promote social justice.

Even though there have been studies that considered a perspective from critical literacy in digital literacy practices, it has been unclear that what can support readers to become critical online readers. In the following section, I conceptualize the resources that readers would need to engage in critical reading and writing in a digital space.

2.2 Conceptual Framework of Critical Literacy Practice in a Digital Space

I conceptualize the theoretical construct of critical literacy practice with readers' cognitive resources and sociocultural resources in three distinctive dimensions: (a) knowledge, (b) activity, and (c) disposition (see Figure 1). To be critical online readers in a digital space, readers need to utilize both cognitive and sociocultural resources.
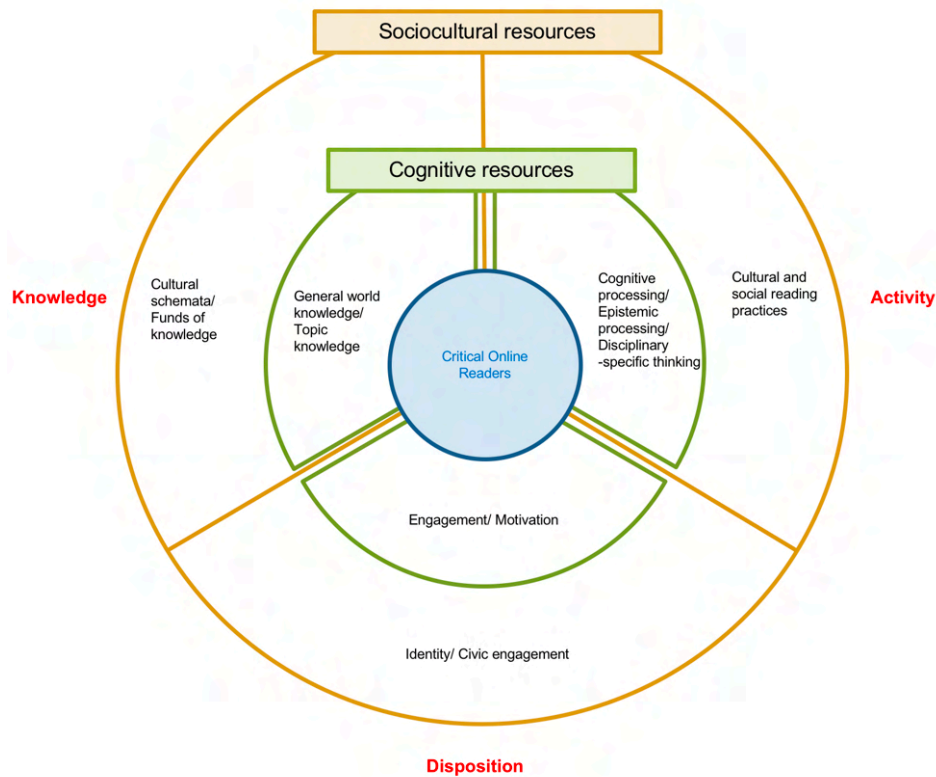
Figure 1. Resources for Critical Literacy Practice in a Digital Space

Research has documented and studied critical literacy practice from different perspectives that reflect distinctive theoretical stances that can be represented as the three dimensions above. Table 1 samples empirical studies and their focuses of critical literacy practice in a digital space. In the following sections, I articulate the dimensions and components of critical literacy practice presented in the Table 1 in detail by drawing upon well-known theories and research traditions.

Table 1. Cognitive and Sociocultural Resources within Three Dimensions for Critical Literacy Practice in a

Digital space

Dimensions	Cognitive Resources	Sociocultural resources
Knowledge	Activating prior knowledge of a subject matter of a text to achieve different goals of online reading such as identifying relevant sources (Balcytiene, 1999; Yang, 1997), making inferences (Burbules & Callister, 2000; Flotz, 1996), and making sense of text idea (Calisir & Gurel, 2003; McDonald & Stevenson, 1998; Potelle & Rouet, 2003)	Accessing one's cultural schemata and funds of knowledge (e.g., socio-cultural backgrounds, beliefs, frames of references) to read and understand texts and discourse in digital spaces (DeAndrea, Shaw, & Levine, 2010)
	Using prior knowledge of web-source navigation and different text structures (e.g., how the hypermedia environment is constructed, how the search engines work) to be successful in completing reading tasks (Bilal, 2000,2001; Lawless, 1997; Lawless & Kulikowich, 1996; Willoughby, Anderson, Wood, Mueller, & Ross, 2009)	Utilizing new form of personal and cultural resources developed through digital spaces (e.g., multimodal communication skills, online affinity, multicultural engagement) to expand understanding of culture and to communicate with people in online spaces (Kim & Omerbašić, 2017; Rowsell & Burke, 2009)
Activity	Utilizing reading strategies and skills such as inference making and source evaluation that could lead strategic thinking and reading (Cho, 2014; Kiili et al., 2018; Britt, Rouet, Blaum, & Millis, 2019)	Negotiating textual interpretations and building on one another's ideas in social reading circumstances (Castek, Coiro, Guzniczak, & Bradshaw, 2012; Kiili, Laurinen, Marttunen, & Leu, 2012)
	Sophisticated epistemic processing that supports learning from multiple texts (Barzilai & Zohar, 2012; Bråten, Britt, et al., 2011; Cho et al., 2018; Ferguson, Bråten, & Strømsø, 2012; Mason, Ariasi, & Boldrin, 2011)	Learning more than traditional reading skills such as evaluating the credibility of online sources and conducting research project work through online collaborations (Gilbert, 2013; Passig & Maidel-Kravetsky, 2016)
	Applying discipline-specific thinking and reading skills (e.g., historical thinking as sourcing, contextualizing, corroborating) to make sense of multiple sources (Cho, Han, and Kucan, 2018)	Understanding the important component of reading and making choices depending on the different contexts of online spaces such as online games (Steinkuehler, Compton-Lilly, & King, 2010) and instant messaging (Lee, 2007).
Disposition	Being aware of the goal of reading and engaged in the reading task, which allows readers to seek conceptual understanding from texts and to make choices when and how to use strategies (e.g., engagement, motivation) (Brooks, Nolan, & Gallagher, 2001; Hill & Hannafin, 1997; Richardson & Newby, 2006)	Developing a full presence of self in digital spaces which can be similar to or different from offline one to effectively communicate with others (e.g., civic engagement, ethical engagement) (King, 2001; Lee-Won, Shim, Joo, & Park, 2014; Lewis & Fabos, 2005; Thomas, 2007)
	Taking responsibility to achieve the goal of reading by using meta-cognitive strategies such as self-regulation and self-monitoring (Azevedo, Feyzi-Behnagh, Duffy, Harley, & Trevors, 2012; Brand-Gruwel, Wopereis, & Vermetten, 2005; Cho, 2014)	Disrupting a notion of identity as singular categories of differences such as race, ethnicity, or nationality to engage in various cultures in digital spaces (Chau, 2010; Hull & Stornaiuolo, 2010; Kim, 2016; Wargo, 2017; 2018)

2.2.1 Cognitive Resources for Critical Literacy Practice in a Digital space

The earlier work from these constructivist perspectives on reading aimed to explain how readers construct meaning of texts using their knowledge of the underlying structures of texts. Kintsch (1974) developed a theory of reading based on propositions, which may be defined as "ideas that can be expressed in words, not the words themselves" (McNamara, Miller, & Bransford, 1991, p. 342). Moreover, attempts have been made to define the system of mental operations that underpin the processes that occur during text comprehension (Kintsch & van Dijk, 1978). Anderson and Pearson (1984) suggested a schemata-theoretic view that explains how a readers' schemata or prior knowledge function in their reading processes. Because the theories based on propositions or schemata were unable to explain readers' unique ways of text comprehension about unfamiliar situations, there was a need to approach reading as a process of developing and sustaining knowledge of situations portrayed in a text. In this regard, several lines of study investigated how readers create a *mental model* and a *situational model* that are structurally similar to the events, circumstances, or layouts represented by texts (McNamara, Miller, & Bransford, 1991; van Dijk & Kintsch, 1983).

In the late 20th century, in addition to these investigations of reading process, individual reader's attention and specific strategies used in the process of meaning construction has become an interest to scholars in reading research field. From this point of view, a fundamental prerequisite for reading is complicated thinking and reasoning (Ruggiero, 1984), which can be represented as critical thinking that reflects the complexity of reading comprehension (Norris & Phillip, 1987). Specifically, critical thinking is a process that allows readers understand confusing texts by creating alternative interpretations, weighing them against experience and world knowledge, deferring decisions until more information is available, and adopting alternate explanations. In this

regard, in the field of cognitive reading research, critical thinking has been defined and examined as a set of skills or strategies that supports readers' text comprehension and text analysis. In particular, Pressley and Afflerbach (1995) established *constructively responsive reading*, which focuses on the cognitive and affective processes of the reader during reading. This describes how readers actively create meaning and are committed to comprehend the general meaning of text despite inconsistencies or inaccuracies.

Based on this cognitive tradition of reading research, critical reading can be viewed as readers' active use of cognitive resources in three different dimensions: a) knowledge and perspective (e.g., prior knowledge of subject matter and text structure), b) activity and process (e.g., reading skills and strategies, epistemic processing, skill-based disciplinary literacy practices), c) identity and disposition (e.g., motivation, engagement). In the following sections, I will describe how critical reading can be defined in each dimension and how it can be related to reading practices in a digital space.

2.2.1.1 Cognitive-Knowledge

The first resource that readers can bring to their critical literacy practice is *prior knowledge and perspectives* that can provide reader expertise of a subject matter of a text, which can make readers think critically to develop a perspective about the text (Smith, 1988). According to research, an individual's familiarity with the topic of a text influences the reader's achievement in reading and thinking tasks (Glaser, 1984; Norris, 1985). The importance of prior knowledge in reading has been mostly explained with *schema theory* (Anderson & Pearson, 1984), which theorized readers' active use of prior knowledge to comprehend a text. According to this theory, if readers lack prior knowledge of the subject matter of a text, they would have a hard time making sense of text information because they cannot integrate new information to their schema. That is, the reading

process of a reader who does not have enough prior knowledge would spend more time on reorganizing and modifying the existing schema, which would result in poor comprehension of a text.

The reader's prior knowledge of text or learning environment is essential for text understanding (e.g., Alexander, 1992; Afflerbach, 1990; Alvermann, Smith, and Readence, 1985). During reading, readers use different prior knowledge such as general world knowledge, topic knowledge, and knowledge of text structure to construct coherent meaning (Anderson & Pearson, 1984; McKeown & Beck, 1990), determine main ideas (Afflerbach, 1990), and make inferences (Graesser, et al., 1994; Stahl, Jacobson, Davis, & Davis, 1989).

In addition, the effect of prior knowledge has been distinguished from other components in reading. For instance, Baldwin, Peleg-Bruckner, and Mcclintock (1985) attempted to disentangle the effects of readers' interest and prior knowledge in successful text comprehension. Previous studies assumed that there will be an interest effect - that if readers read materials on topics that are highly interesting to them, then they will show better comprehension. Indeed, their study with high achieving middle school students showed that one can have more prior knowledge if they are more interested in the topic. In addition, McNamara (2001) investigated readers' use of prior knowledge in three ways: if the benefit of a low-coherence text is due to inferences formed while reading, whether such inferences must rely exclusively on prior knowledge, and whether reading two separate texts is helpful for readers. A key conclusion from this study was that exposing high-knowledge readers to high-coherence text decreased the need for knowledge-based inferences, but exposing low-coherence material enhanced readers' learning through knowledge-based inferences. Therefore, the text sequence was an important factor for readers to make inferences based on their prior knowledge. However, it also demonstrates that enhancing text

coherence can assist readers; however, the advantages of such coherence are dependent on the reader's existing domain knowledge (McNamara & Kintsch, 1996).

In this regard, online hypertext reading comprehension also have been investigated through readers use of prior knowledge and its influence on their reading. Readers use different prior knowledge to draw inference (Burbules & Callister, 2000; Foltz, 1996), identify relevant resources (Balcytiene, 1999), and make sense of text idea (Calisir & Gurel, 2003; McDonald & Stevenson, 1998; Potelle & Rouet, 2003). Scholars have suggested that readers' prior knowledge—related to text topic, a domain of knowledge, online reading experiences, and multiple sources—have a significant impact on online reading (e.g., Salmerón, Kintsch, & Canãs, 2006).

In an online setting, it is also important to consider knowledge of web-source navigation and text structure (e.g., how the hypermedia environment is constructed, how the search engines work) that might impact readers reading comprehension regardless of their general reading abilities (Barab, Bowdish, & Lawless, 1997; Bilal, 2000, 2001; Lawless & Kulikowich, 1996). To illustrate, Bilal (2000, 2001) explored how the level of prior knowledge and reading ability of seventh graders influenced their usage of a children's search engine. According to the findings of two studies, readers' knowledge of topic matter and ability to read did not have a significant impact on their success, but students' knowledge about collecting information optimally from this hypertext environment was a more important factor in their successful completion of an online reading task. Willoughby, Anderson, Wood, Mueller, and Ross's (2009) study of 100 undergraduate students found that even if existing knowledge of topic matter was limited, their participants could properly identify relevant webpages. Similarly, Coiro (2011) discovered that, although topic-specific prior knowledge influenced performance of online readers with low levels of online reading abilities, prior knowledge has evidently not influenced online readers with

middle to high levels of online reading comprehension skills. Even though these results seem to be different from those of traditional reading studies, it should be noted that most of these studies only investigated readers' online reading performance (e.g., use of search engines, information location, browsing behaviors) as an outcome of reading, not a deeper meaning of reading comprehension. Knowledge may have a more indirect and nuanced impact on online search behaviors and deserves more examination (Willoughby, Anderson, Wood, Mueller & Ross, 2009. Empirical studies that dove into readers' deeper understanding of multiple sources on the internet (e.g., Cho, Woodward, & Li., 2018; Cho, Han, Kucan, 2018) chose a topic of which participants had little prior knowledge, so that they could exclude the effect of prior knowledge. Indeed, the role of prior knowledge in online reading comprehension and process must be thoroughly investigated.

2.2.1.2 Cognitive-Activity

During reading, readers not only actively use prior knowledge but, they engage in active processes and activities using various reading strategies and skills to construct meaning from a text. In the field of reading research, it has been advocated that readers can be critical and strategic when they are highly skillful in using diverse reading strategies. Traditionally, reading research that investigated an individual reader's reading process has focused on single text comprehension. Afflerbach & Cho (2009) explained that "one result of the past century's work to describe reading is the robust accounting of reading strategies" (p. 73). To explain a written discourse process, Kintsch (1988) developed a theory that explains readers' active mental model building process during a single text reading. According to this theory, reading comprehension begins with the construction of a *text base model* that reflects a text's propositional network in which readers try to "establish coherence as soon as possible, without waiting for the rest of the clause or sentence"

(van Dijk & Kintsch 1983, p.15). At this level of reading, readers may not have a precise and cohesive mental representation of the text; thus, readers will use their prior knowledge to construct *a situation model* in order to build a coherent mental model of the text relevant to the reading goals. The situation model has become more widely termed to as *an integrated mental model* (Britt & Rouet, 2012; Britt, Rouet & Braasch, 2013). In this process of building a coherent integrated mental model, readers will not only activate their prior knowledge, but also utilize active reading strategies to achieve their reading goals.

In an attempt to categorize expert readers' self-reported reading strategies and responses, Pressley and Afflerbach (1995) examined empirical research and proposed "constructively responsive reading" as a model for successful reading, in which readers actively process the text by looking for meaning and creating interpretations based on existing knowledge. Reading strategies such as identifying and learning content of the text, evaluating, and monitoring are included in this model. This sort of strategic thinking and reading entails examining information, forming ideas, making comparisons, establishing conclusions, evaluating facts and opinions, and a set of dispositions (Brem, Russell & Weems, 2001). This strategic reading corresponds well with the definition of critical reading as a set of six skills: examining sources, identifying an author's intention, distinguishing between fact and opinion, making conclusions, judgements, and detecting misinformation. Readers who possess good critical reading skills are able to "go beyond the information given . . . by asking questions, making hypotheses, seeking evidence, and validating assumptions" (Langer, 1990, p. 815).

In multiple text comprehension, as an extended model of Kintsch (1988)'s situation model theory, Perfetti, Rouet, and Britt (1999) presented an intertext model of multiple document comprehension that describes how a reader constructs a global mental model as a meta-

representation of meanings across multiple texts. Readers create an intertext model to reflect the identified interrelationships of texts (e.g., How does one text (dis)agree with, (dis)connect to, or (dis)confirm another?). Readers compare, contrast, juxtapose, evaluate, and judge (in)consistencies about their information, content, viewpoints, assumptions, and intent while constructing and modifying this intertext model of multiple texts.

There have been multiple strands of research on multiple text comprehension, which are mostly concerned with how readers comprehend multiple documents and that present different perspectives on the same topic. According to several research, reading multiple texts about a contentious topic from various views may help readers comprehend the issue more deeply than reading a single text (Britt & Aglinskas, 2002; Bråten & Strømsø, 2006; Nokes, Dole, & Hacker, 2007).

Building upon multi-source comprehension studies, earlier research on online reading comprehension were able to determine that the skills and strategies necessary to understand printed texts in an online setting might be comparable, but more complicated (Coiro & Dobler, 2007; Zhang & Duke, 2008). Especially, Coiro and Dobler (2007) concluded that skilled readers demonstrated additional and more sophisticated aspects of reading comprehension in addition to classic reading processes such as prior knowledge usage, strategies for inferential reasoning and self-regulation of reading processes. Afflerbach & Cho (2009) also supported this argument that internet reading may necessitate a new set of reading strategies that reflect the complexities of the internet's hypertextual environment. In addition to the original model of constructively responsive reading (Pressley & Afflerbach, 1995), they proposed a new set of strategies in their meta-analytic review, such as noticing and constructing potential texts to read, identifying and learning important information, monitoring, and evaluating.

Individual readers' epistemic beliefs and processing, which involve beliefs about knowledge and knowing, have recently been one of the topics of reading research with multiple texts. According to Hofer and Pintrich (1997), epistemic beliefs may be described by the nature of knowledge, which refers to what one believes knowledge is, and the process of knowing, which refers to how one learns to know. Previous research has found that readers' epistemic beliefs and reasoning play an important role in learning from different information sources (e.g., Barzilai & Zohar, 2012; Cho, Woodward, & Li, 2018; Ferguson, Bråten, & Strømsø, 2012; Mason, Ariasi, & Boldrin, 2011).

There is another line of research that investigates individual reader's cognitive reading skills and strategies that is specific to discipline-based thinking. For example, recent perspectives on history learning underscore students' historical thinking with diverse sources (Van Drie & Van Boxtel, 2008). There have been multiple strands of research that investigated historians' use of complex thinking practices in a discipline-specific way as they examine historical texts and synthesize reliable text evidence to support their understanding of the past (e.g., Monte-Sano, 2011; Wineburg, 1991;1998). Based on this framework of historical reading and thinking, Cho, Han, and Kucan (2018) examined how middle school students use internet sources while investigating a historical event on the internet. As a result, they found that students who made text-based inferences as they make sense of the multiple internet sources resulted in better learning outcomes that can be represented as students' history-specific online reading performance with an active use of historical thinking practices.

2.2.1.3 Cognitive-Disposition

Readers' disposition and identity have been explored in the field of reading research as part of readers' engagement and motivation in reading. According to studies, students' motivation is

significantly impacted by their expectations of accomplishment on the task, as well as their opinion about the task, or how appealing and essential they perceive the task to be (Wigfield & Eccles, 2000). Students may become skilled and strategic readers, but without intrinsic drive to read, they may never strive for success as literacy learners (Gambrell, 1996).

Later, Gunthrie & Wigfield (2000) clarified that reading motivation is "the individual's personal goals, values, and beliefs with regard to the topics, processes, and outcome of reading" (p. 405) that activates behavior, which is distinctive from attitude and interest. For example, readers who report themselves as good readers might not like to read and their interests might be only related to the specific topics of a text.

Engagement, in addition to motivation, is an important component of successful reading. Engagement is a complex concept that entails involvement, participation, and dedication to a set of activities. Specifically, reading engagement is made up of three dimensions that include cognitive, affective, and behavioral engagement dimensions. In particular, Guthrie et al. (1996) highlighted the cognitive aspect of engagement in reading by concerning reading as strategic and conceptual as well as motivated and intentional process. However, large numbers of students in classrooms are disengaged, which makes it difficult for them to comprehend complex texts (Guthrie, Wigfield, & You, 2012).

As earlier scholars in reading motivation and engagement found (e.g., Almasi & McKeown, 1996; Guthrie &Alvermann, 1999; McKenna, Kear, & Ellsworth, 1995), engaged readers deliberately seek conceptual understanding from texts and make choices for when and how to use different strategies. That is, "engagement in reading refers to motivational use of strategies to gain conceptual understanding during reading" (Guthrie et al., 1998, p. 261). In sum, high levels of

motivation and engagement for understanding and learning from text is one of the important factors for successful reading comprehension for adolescent readers.

In the field of online reading, readers' motivation and engagement has also been defined as "cognitive engagement, the integration of motivations and strategies in literacy activities" (Guthrie et al., 1996, p. 306) by drawing upon the definition from traditional reading research. That is, positive dispositions (e.g., attitudes, mindsets, beliefs) towards reading on the internet have a significant influence on students' effective learning (Guthrie, 2004) because, if they are positively motivated, they will be able to self-regulate themselves by focusing on which strategies to use in their learning. Richardson and Newby (2006), for example, investigated the degree to which students participate intellectually in their online classes and concluded that successful readers become more self-directed and learn to be more responsible for their own online learning, which is consistent with previous research on self-regulation while reading web sources (e.g., Hill & Hannafin, 1997).

Likewise, there has been attention to *self-monitoring* – "knowing and adjusting one's own knowing, thinking, and performance" (Cho et al., 2017 p. 697). In an online setting, where the information overflows, readers can easily lose their goal and focus of their reading (Coiro & Dobler, 2007). Therefore, self-monitoring has been identified as a critical factor of successful online reading, assisting the reader in the selection, performance, and evaluation of reading strategies in respect to the online textual environment (Brand-Gruwel, Wopereis, & Vermetten, 2005; Cho, 2014). Strategic online readers will be conscious of their own reading processes by performing goal-oriented information location and meaning making (Stadtler & Bromme, 2007).

2.2.2 Sociocultural Resources for Critical Literacy Practice in a Digital Space

Even though individual reader's cognitive reading processes and reading comprehension have opened the field of reading research, there has been another line of interest towards reading comprehension, which has roots in sociocultural perspectives (e.g., Gee, 1996, 2000; Street, 1984). This view is built upon sociological and linguistic work (e.g., Cook-Gumperz, 1986) and sociocultural theories (Vygotsky, 1978; Wertsch, 1991) that defined reading as a part of social practices that are interactively constructed by social members such as parents, teachers, and students in schools and other settings.

This line of research also refers to "New Literacy Studies" (Gee, 2000; Street, 1997) that emphasize the nature of literacy which does not focus on acquisition of neutral and decontextualized skills, but rather on enactment of practices that are inseparable to specific contexts and society. From this point of view, language never takes place independently of the social environment and always takes place inside and is molded by a cultural context, thus, reading is embedded and embodied practices within the specific context in which it takes place (Barton & Hamilton, & Ivanič, 2000; Gee, 2000).

Specifically, Gee (2000) suggested a new approach to apply the view of situated learning (Greeno, Collins, & Resnick, 1996; Lave & Wenger, 1991) and sociocultural literacy studies (Heath, 1983; Street, 1984) to reading. Gee discussed this new approach by conceptualizing three different ideas involved in reading practices: a) the situated meaning, b) cultural model, and c) readers' identities. From this point of view, meaning is embedded in specific sociocultural practices and experiences, and it is constructed and comprehended through individual's particular situated world and text experiences (i.e., cultural model) by enacting different identities in distinctive forms. In particular, Gee (2010) compared *verbal understandings* (i.e., an ability to

explain one's ideas in words or general principles) to *situated understandings* (i.e., an ability to use the word or to grasp the concept that can be adapted to varied particular situations) that explains how a literal understanding of texts cannot fully enable readers to understand the actual meaning and apply their knowledge to the world or to solve problems.

Responding to increasing attention for this situated understanding of reading and literacy, much research has been conducted in diverse areas, including K-12 classrooms (Lankshear, et al., 2000; Purcell-Gates, Duke, Martineau, 2007), everyday life (Barton& Hamilton, 1998; Prinsloo and Breier, 1996), youth groups (Moje, 2000; Heath & McLaughlin, 1993), and gender (Millard, 1997). This view of reading as social and cultural practices also includes an emphasis on power relations which can be supported by critical theories (Freebody & Luke, 1990; Freire, 1970). From this point of view, language used in text is considered to be socially and culturally constructed that can either empower or undervalue individuals (Gee, 2000). Thus, it is important to identify the ideological nature of knowledge and texts, that is, how particular knowledge structures works to the benefit of social power configurations (Freebody et al., 1991).

This critical view towards reading is derived from the field of critical literacy that involves an understanding how literacy practices and ideology influence the textual depiction of realities (Cervetti, Pardales, and Damico, 2001). Luke (1995) propositioned that "there are no universal 'skills' of reading" (p.3). Reading, he argued, is a social practice composed of interpretative principles and events established and taught in settings such as schools and churches, as well as families and workplaces. This means that reading might be regarded as less than an extraction of the author's purpose and more deeply based in social, historical and cultural practices (Freebody & Luke, 1990).

In the following section, I aim to conceptualize additional aspects of critical reading by drawing upon different theories and empirical studies from socio-cultural and critical view towards reading comprehension. From this socio-cultural view of reading research, critical reading can be viewed as readers' active use of socio-cultural resources in three dimensions: a) knowledge and perspective (e.g., cultural schemata, funds of knowledge), b) activity and process (e.g., situate literacy, reading contexts), c) identity and disposition (e.g., funds of identity, citizenship).

2.2.2.1 Sociocultural-Knowledge

In addition to the cognitive resources such as broad world knowledge and specific topic knowledge, readers also bring specific knowledge and perspectives that come from readers' understandings and experiences of community, society, and the world surrounding them. "The actual act of reading literary texts is seen as part of a wider process of human development and growth based on understanding both one's experience and the social world. Learning to read must be seen as one aspect of the act of knowing and as a creative act. Reading the world thus precedes reading the word and writing a new text must be seen as one means of transforming the world" (Freire, 1983, p.5). In his paper, Freire argued that reading is not only the act of decoding the written word or written language, but rather the act to be anticipated by and extended into knowledge of the world.

In earlier work in reading comprehension, *cultural schema* has been studied as an attempt to consider readers' cultural background and knowledge that can strongly influence reading comprehension. Previous studies investigated different ranges of cultural schemata, from a narrow view that explains prior knowledge about the cultural norms and properties (e.g., cultural familiarity) to a broader view that encompasses individual's knowledge of the world (e.g., age, sex, race, religion, nationality, occupation). Based upon a broader concept of cultural schemata,

51

there have been studies that compared reading process and outcome of two culturally distinctive groups who have different cultural backgrounds by providing them culturally familiar or unfamiliar texts (e.g., Alptekin, 2006; Steffensen, Joag-dev, & Anderson, 1979; Pritchard, 1990). For example, Pritchard (1990) compared 30 students from the United States and 30 students from the Pacific island nation of Palau to examine their use of reading strategies. They concluded that the cultural familiarity appeared to impact readers' processing strategies and the level of comprehension.

In addition to that, Reynolds, Taylor, Steffensen, Shirey, and Anderson (1982) investigated the relationship between cultural schemata and reading comprehension under the assumption that readers construct meaning from text by analyzing texts with the personal culture of that person. As a result of their study, they found that cultural schemata can influence how the text is interpreted and how culturally biased texts can impact students' reading outcomes. One of the important take-aways from this earlier work is that the level of fluency in understanding words and sentences from texts or prior knowledge towards the topic cannot solely predict a successful reading comprehension, but other personal and cultural factors of readers should be accounted for.

Although previous studies, those suggested above, attempted to investigate a broader meaning of culture, often times they only considered specific culture (e.g., wedding culture, family tradition) of an ethnic group as their frame. One's culture should be defined and conceptualized more than by traditional characteristics or unique assets of an ethnic group. When investigating reading from a socio-cultural view of reading, the beliefs, attitudes, and social practices of literate individuals and social groups in a range of contexts and situations should be taken into account.

Scholars that advocated for a broader and more comprehensive notion of culture (Gee, 1992; Gonzalez et al., 1995) believe that there should be an understanding of the fundamental

discourses in a group and the language characteristics formed by members of that discourse group. The concept of *funds of knowledge* (Gonzalez et al., 1995; Gonzalez, Moll, & Amanti, 2005) might be useful in understanding the links between one's culture and one's reading and literacy practices in this context.

Funds of knowledge refers to "the families' historically developed and accumulated strategies (skills, abilities, ideas, practices) or bodies of knowledge that are essential to a household's functioning and well-being" (Gonzalez et al.,1995, p. 446).

Reading research has advocated the importance of funds of knowledge in critical reading of texts. Especially, Alvermann and Eakle (2003) argued that if a reader brings background knowledge and funds of knowledge, then that person has a better chance to reach a critical understanding of the text content. Moreover, different perspectives and understandings towards texts and the content represented in texts can be shaped by individual student's personal cultural resources.

Even though the significance of sociocultural experience, knowledge, frames of references, and beliefs in student learning has been well-documented (e.g., Gay, 2000; Howard, 2001), there is a lack of closer examination about how readers' cultural factors influence their meaning construction process in reading (RAND Reading Study Group, 2002). It is challenging for students to use their personal knowledge to understand the text if they are not promoted and there is a lack of research that has investigated how students access their funds of knowledge and cultural resources in regard to their reading practices (Damico, Baildon, Exter & Guo, 2009). A few empirical studies explored cultural resources that learners activate while engaging in literacy practices. Brooks (2006) found that African American readers use particular African American themes, patterns, and practices to understand literary work (Brooks, 2006) and Epstein (1998)

explored how African American students and European American students have different perspectives and understanding of the past and how their sociocultural context influences their thinking.

In online spaces, readers also access their cultural schemata and funds of knowledge to read, understand, and communicate with texts and discourses. Most studies examined particular communication platforms such as Facebook and text-messaging apps to uncover their literacy practices and the relationships between readers (or writers, communicators) and their cultural resources. Especially, Facebook has been mainly used as an exploratory space to examine how readers' offline self-portraits, youth culture, ethnicity, and social relationships are reflected and expressed in an online space (Chang, 2015; Lee, 2012; Maíz-Arévalo & García-Gómez, 2013).

DeAndrea, Shaw, and Levine (2010), for example, studied how a person's culture impacts self-definition and self-expression on Facebook with various ethnic groups of college students (Caucasian Americans, African Americans, and ethnic Asians). As a result, they found that culture had a significant influence on communicating who they are, individuating self-references rather than relying on social affiliation, and articulating self-descriptive expression. They discovered differences among ethnic groups, specifically that African Americans expressed themselves differently than Caucasian Americans and ethnic Asians who did not. African American students expressed more deeply ingrained expressions and self-descriptions, as well as more relational affiliations, than others. They acknowledged the study's limitations, namely that the attributes of the SNS's interface and/or user norms may have influenced online self-presentations, and suggested further research with different SNS interfaces to explore communications and self-expressions of individuals.

What should be noted here is that previous studies mostly focused on "writing" or "communicating" aspects of literacy practices, rather than reading practices and understanding of web sources, multimodal representations, and discourses. As mentioned in Damico, Baildon, Exter and Guo (2009), there have been limited studies on how students access and use cultural resources and knowledge, especially when reading online. They argued "students' prior knowledge was typically treated as skills or basic knowledge of particular topics rather than cultural resources students drew upon to evaluate Web information." (p. 326).

Another way to bring cultural resources to examine online reading practices is to consider that digital spaces should be considered as new social and cultural spaces where people read, write, and communicate with each other using their established funds of knowledge and develop new cultures and communities. Gee (2010) argued in his chapter, *A Situated-Sociocultural Approach to Literacy and Technology*, "literacy was a social and cultural achievement – it was about ways of participating in social and cultural groups – not just a mental achievement. Thus, literacy needed to be understood and studied in its full range of contexts – not just cognitive, but also social, cultural, historical, and institutional." (p. 166). In this regard, new sociocultural contexts and cultural norms, rules, activities that are shaped within digital spaces – online affinity space should be studied as one of the cultural aspects of reading.

With this theoretical framework of online affinity space, Kim and Omerbašić (2017) conducted two qualitative studies: a) an analysis of literacy practices on DramaCrazy.net, a Korean drama forum and b) a case study of one teenage girl. Their participants were adolescents who did not live in Korea but obtained and formed connections to the images, sounds, and narratives of Korean dramas through the use of multimodal literacy practices. As a result, they found that the participants imagined different lives and engaged in multilingual media-practices by developing

an affinity for Korean drama through multimodal literacy practices, which they practiced belonging to communities outside of their present social and cultural contexts (e.g., nationality, ethnicity). In addition, Rowsell and Burke (2009) suggested that being engaged in digital reading is a complex practice that requires readers to understand the discourse and the designs of the specific digital space (how language is represented and communicated), which also demands a personal engagement with the contents of the websites, in this case, Anime. Participants of this study developed their awareness to understand the unique discourses and designs of the websites through their accumulated everyday online experiences and their knowledge and interests in Anime. This critical awareness of the semiotics of language designed and presented on the websites was essential to readers' understanding and communication in those spaces.

As previous studies suggested, readers' knowledge and resources based on their identities, their experiences, and family and cultural backgrounds can shape their way of reading, writing, and communicating in online spaces. Nevertheless, there should be more studies on how those resources support online readers' understanding of web sources and how they became more aware of what affects the way they read those web sources that they encounter in their daily lives.

2.2.2.2 Sociocultural-Activity

From a social constructivism view (e.g., Vygotsky, 1986; 1987), reading is situated within social and cultural settings and knowledge is a construction of social product. According to Luke (1988), it has not been that long since reading has been regarded as a private and internal act that is represented as mental processes of individual readers mostly by psychologists. Rather, reading has been considered as a context-specific activity that can be varied significantly across historical eras and cultural contexts. This view that is referred as "New Literacy Studies" (Gee, 1990,1996; Street, 1997), or "situated literacies" (Barton, Hamilton, & Ivanič, 2000), is concerned with

reading that takes place in broader social goals, cultural practices, institutions, and power relations for particular purposes.

From this perspective, reading represents a variety of developing human activities with language that can be understood as engagements and views about written language in particular settings and circumstances (Landis, 2003). When people participate in reading, they use their own resources that are appropriate to the particular settings. For example, when the students participate in reading in classrooms, it is not a private activity, but it is a product of education that reflects ideology of that era, rather than private or individual psychological or literary abilities (Freebody, Luke, & Gilbert, 1991).

Similarly, Gee (2000) discussed this new perspective of reading by conceptualizing the situated meaning, cultural model, and readers' identities involved in reading practices. According to this viewpoint, meaning always lies in specific sociocultural practices and experiences, and it is constructed and comprehended through individual's particular situated world and text experiences. People also enact different identities in distinctive form or spoken or written languages conveying different situated meanings and cultural models. Also, Hamilton (2000) took account into texts, participants, settings and artefacts when considering reading that could lead a broader discussion of social practices.

Scholars have been drawing upon New Literacy Studies (Barton & Hamilton, 2000; Gee, 1996; Street, 1997) to understand reading practices that happens in different digital spaces. First of all, there have been studies that considered online contexts (e.g., internet, social media) as new contexts to explore how reading practices can be influenced and differed. For example, Schreyer (2012) viewed online spaces as transnational spaces that embrace popular culture and shape new shared discourse conventions across the countries. Online spaces allow today's adolescents who

have different nationality to share transnational experiences based on the common interests. From her point of view, online spaces are preferred spaces for adolescents from all around the world, because they can meet, interact, play, and share their thoughts, perspectives, and languages through social networks, fan fiction pages, and blogs.

Knobel and Lankshear (2008) also explained how participating in online social networking spaces requires the new discursive knowledge of various modes and text types, as well as sets of skills concerned with performing the technology like knowing how to add or delete applications. This involves becoming aware of and utilizing the affordances of online spaces such as Facebook to produce and communicate personally important meaning from the standpoint of participants who participate in Facebook as members (Gee, 2004).

Second of all, there have been studies regarding institutional contexts of reading such as collaborative reading in schools (e.g., Kiili, 2012; Passig & Maidel-Kravetsky, 2016) and private reading contexts such as video gaming and instant messaging (e.g., Lee, 2007; Steinkuehler, Compton-Lilly, & King, 2010). Kiili (2012), for example, investigated collaborative work of students while utilizing the internet by concentrating on how social reading situations add extra components to their meaning construction because the readers can discuss understandings of the texts and develop each other's views. This study showed how individual students constructs his or her own knowledge in conjunction with others in the contexts of authentic collaborative activities.

Similarly, Kiili, Laurinen, Marttunen and Leu (2012) looked at how in a collaborative online reading setting secondary school students in Finland built knowledge and meaning. The student pairs were asked to discuss the topic, gather source on the web and write a collaborative essay. By analyzing interaction between verbal protocol data and video screens, the researchers found that some students prefer to work in pairs, while others have a higher preference for working

58

alone, and collaborative activities have benefits for teachers in classrooms as a tool for evaluation and instruction. Castek, Coiro, Guzniczak, & Bradshaw (2012) also confirmed these results. The work in pairs with complicated texts has shown more and less effective collaborative interactions. In addition, while calling for such abilities in the Common Core State standards they discovered few examples of teacher skills in facilitating collaborative interactions.

As a way to support student-centered and experiential learning approach to instruction, Gilbert (2013) suggested a collaborative online reading and research project. By developing and implementing this collaborative online reading project into English Language Art classrooms, it was possible for students to learn more than the traditional reading skills including evaluating the credibility of online information, and how to conduct project work online. Additionally, this was meant for students to conduct the majority of their project work online, and it featured a blend of face-to-face activities in computer laboratories and out-of-class online communication. Even though Passig & Maidel-Kravetsky (2016) also concerned with the impact of collaborative online reading, their focus of the study was to compare the quality of learning outcome depending on the setting – online or face-to-face setting. The result indicated that the online setting supported higher quality of outcome than the face-to-face setting when students work collaboratively.

Last but not least, scholars investigated different contexts of online spaces such as online games (Steinkuehler, Compton-Lilly, & King, 2010) and instant messaging (Lee, 2007). By acknowledging the important component of online video game culture, Steinkuehler, Compton-Lilly, and King (2010) examined what kinds of texts are involved and how youth perform their reading with them. They had research questions such as "What texts are a regular part of videogame play? What is their nature, function, and quality? And what is the nature of adolescent reading performance within such contexts?" (p. 222). When subject and difficulty were controlled

for, they discovered that the participants mostly engaged in reading informative texts and reading performance on those texts was similar to their reading performance on school-related materials. They also found that when the struggling readers had the opportunity to choose the topic, they were able to successfully comprehend texts beyond the grade level at an "independent" level (94–97% accuracy).

They also found that when struggling readers were given the option of selecting the topic, they performed at a "independent" level (94-97 percent accuracy) even on texts that were above their grade level. Lee (2007) explored a computer-mediated communication in real-time, Instant Messaging (IM), what factors influence language and script choice for adolescent users. This study, which was based on the new literacy studies, regarded IM as a social practice incorporating a variety of literacy practices. The findings demonstrated that participants' perceived affordances of IM technology and the availability of linguistic resources influenced their choice of language and writing system.

In conclusion, as Lewis (2008) argued, changing literacy practices in the internet age is more crucial than changing tools for literacy, as new literacy practices generate new epistemologies. Epistemologies associated with literacies in diverse environments such as homes, libraries, churches, and the internet must be introduced properly. It should be noted that our common perception of digital games as mindless should be re-considered, and we should envision new practices and epistemologies has to go beyond the normalized ones. Also, it should be discussed how digital media can widen the gap to the extent that availability of resources across social classes that produce different self-imagination and social ambitions (Lemphane, & Prinsloo, 2014). We should be aware of this new digital context of reading can also prolong the social inequalities in school settings.

2.2.2.3 Sociocultural-Disposition

In reading practices, readers enact multiple identities developed from different social and cultural backgrounds. Identity has been defined in different ways with multiple meanings and encompasses multiple theoretical perspectives (Moje & Luke, 2009). Many of scholars developed Vygotsky (1978)'s perspective when they define identity, which explained how individuals develop through internalizing practices, knowledge of, and beliefs about the worlds and about themselves as a result of their interactions in society (e.g., Esteban-Guitart &Moll, 2014).

Especially, Esteban-Guitart and Moll (2014) expanded the concept of funds of knowledge to the concept of funds of identity that refers to the "historically accumulated, culturally developed, and socially distributed resources that are essential for a person's self-definition, self-expression, and self-understanding" (p. 31). By adopting Vygotskian perspective of identity, they subdivided funds of identity into five types: (1) Geographical Funds of Identity (e.g., Grand Canyon as a symbol of Arizona State) (2) Practical Funds of Identity (e.g., work, sports, or music), (3) Cultural Funds of Identity (e.g., age, gender, or ethnic group), (4) Social Funds of Identity (e.g., relatives, friends, or colleagues), and (5) Institutional Funds of Identity (e.g., family, marriage, or the Catholic Church).

For example, the way student readers interact with texts, students' reading identities, are mostly influenced by how they have been positioned in school as readers. Students develop their situated understanding of a good reader in school settings and often times, the way they are positioned in schools is difficult to change because it is deeply rooted in a particular culture and history (Wortham, 2006). Furthermore, Moje (2000) discovered that, while mainstream readers dismiss graffiti as a literary form and characterize graffiti writers as aggressive and deviant, it was one of distinctive literacy practices of "gangsta" adolescents, which liberated and motivated them

to express themselves. One of the participants who are labeled as "at risk" of school failure explained "Graffiti is state of mind a sign of respect" (p. 651). In her study on everyday literacy practices of adolescents, she argued that school should not be the place where the power relationship is maintained and students are stigmatized based on what they can do or cannot do for school-based literacy practices.

In this regard, there has been increasing need of responding to a diverse range of readers, especially with their identities. In the positionings of readers, not only do people's identities affect their literary and textual practices, but also their literate activities. More specifically, some literacy practices may constrain readers' identity representations in more socially acceptable ways, whereas other practices can challenge, shift, or reinforce the identities of readers so that they can perform and their identities.

In an online setting, where unlimited texts and information with multiple perspectives and beliefs are flooding, readers' identities can be easily influenced by and complicated by their reading practices. Specifically, online identity can be different from offline identity in several ways. First, online identity is not defined by one's offline self. An individual who is introvert can be extrovert and sociable in online space. Second, there are different pathways to express and select one's online identity like avatars, whereas offline identity contains factors that go beyond one's control (e.g., race, age, gender).

In relation to the first point, there have been studies that concerned with people's identity, especially *Youth Identity*, how young people use and develop their identities in various online communities for various social purposes (leadership, learning, power, romance). Previous studies have been interested in different digital media or online spaces to understand how people develop full presence of self in digital spaces, which can be similar to or different from offline identity. For

example, Lewis and Fabos (2005) explored how online reading and writing activities of students differ from those they participate in offline, and how their print practices have influenced their online reading and writing practices. The Instant Messaging (IM) was shown to partly extend school literacy practices, and participants actively shaped their social world via their usage of IM. Their hybrid nature in IM contributed to performative, multifaceted identity enactments. Through IM activities, participants gained flexible thinking and beliefs adapting them to different genres and modes and making self-realizations (or identities) in connection to shifting discourses and social spaces.

In addition, in digital spaces, one can disrupt the notion of identity as singular category. Kim (2016) examined practices in the online forum to identify the dynamic space of multicultural learning that was created by the participants. In addition to other cultures, participants participated in dialogic readings of Korean culture. In addition, their multimodal literacy practices enabled them to disturb a concept of identity as a distinctive category of difference, which they can readily identify as ethnicity or nationality. Similarly, Thomas (2007), in his book called, *Youth online: Identity and literacy in the digital age*, explored literacy practices employed by young people from different nations to create full online presence and interact effectively with their peers. He argued that "Although the body is seemingly absent in the virtual space, I argue that online communities are sites for the cultural production of a new type of body. The body is self-produced and authored through words and images within the social and discursive practices of the members of the community." (p.6).

Examining readers' informal and digitally mediated literacy practices can help us understand how people position, express, and convey who they are and how they build relationships with others. Especially for youth group, it is important to recognize dynamic and

multicultural literacy practices and their enactment of multiple identities within digital spaces as both an extension of school literacy and a distinctive literacy of their own. Scholars pointed out the risk of using technologies and digital communications as instructional and learning tools without a deeper consideration of what it means to students to be engaged in the literacy practices with those medium and tools, and how those are different from school literacy (e.g., Lewis & Fabos, 2005; Moje, 2000).

2.3 Summary

With a necessity for a discussion on what it means to 'read and think critically in an online setting' in mind, this literature review explored theories and studies that can inform a conceptualization of critical literacy practice in digital space. Critical literacy practice has been investigated as reader's active use of cognitive resources like sophisticated reading strategies and skills and their utilization of socio-cultural resources (e.g., cultural schemata, critical awareness of texts and authors, identities). That is, relevant studies have been derived from two different theoretical roots: cognitively engaged and socio-culturally shaped literacy practices.

Because these two lines of work have focused on different aspects of literacy practices in a digital space, it is necessary to build a more comprehensive conception of literacy that promotes active roles of readers in a digital space considering reading and literacy as more than a demonstration of competencies and skills (Damico, 2005). Thus, to understand online reading in more comprehensive way, there needs to be more research on relationships between cognitive and sociocultural factors in online reading.

Based on this literature review, this study aims to explore following two research questions to understand critical digital literacy practice of student readers.

Research Question 1. *What kinds of cognitive and sociocultural resources do middle school students activate and employ as they examine a current issue of interest in a digital space?*

Research Question 2. *In what ways do middle school students coordinate cognitive and sociocultural resources to examine a current issue of interest in a digital space?*

My goal was to develop a concrete understanding of middle school students' critical literacy practices while using a comprehensive conceptual framework (Figure 1) that appreciates the assets and resources that students may bring into their literacy practices in a digital space. I also aimed to develop a theoretical understanding that can contribute to the theory and research on critical digital literacy by revealing how the resources represented in my conceptual framework interact with one another.

3.0 Methods

To closely examine youths' critical digital literacy practice, I took a qualitative approach to the student-generated verbal protocols for its importance in identifying and interpreting readers' use of knowledge, processes, and responses. In traditional reading research, verbal protocols have been used as a way to investigate readers' cognitive processes and strategy use (Afflerbach, 2000). However, because reading includes more than cognitive processes, verbal protocols can provide evidence of readers' cognitive, affective, and emotional processes, responses, and thoughts (Cho, 2021). As a primary methodology of this study, verbal protocols guided a systematic study design that includes task demand, target construct, researcher inference, data analysis, and data triangulation. Ultimately, I designed two tasks for students to complete in order to generate data on their digital literacies. I collected approximately 8 hours of data from a total of 8 middle school students.

3.1 Participants and Context

Readers' race, social class, and gender intersect with their reading ability and reading experiences (e.g., Heath, 1983). That is, different contexts and cultures that adolescent readers are engaged in on a daily basis can shape their literacy. Esteban-Guitart and Moll (2014) also argued that readers' identities and experiences can vary by their *funds of identity* such as geographical (e.g., where they live), practical (e.g., what social practices they are involved in), and cultural (what age, race, gender group they affiliate with). With this in mind, I aimed to recruit students

who shared similar funds of identity – students who went to the same school, who were in the same class, and who had same racial identity.

The research site of this study was an urban charter middle school located in Pittsburgh. This school was selected as a research site for several reasons. First, it was chosen because the school has well-equipped facilities for teaching and learning, including laptops for every student and Smart Boards in each classroom, students are accustomed to internet research. Second, t was chosen because I am familiar with the culture of the school and students because I have been involved in a collaboration between the research project team and this school as a research assistant for three years.

I used purposeful sampling to select participants (Patton, 2002). I selected eight middle school students—all eighth-grade Black girls of the same school—to take part in my study. Eight participants is a suitable number for a study such as this because verbal protocols allow for rich analysis of complex reading and literacy practices as shown in Hartman's eight readers' reading study (1995) and Cho's seven students' online reading study (2014).

The students' teacher, Mr. McCutchen (pseudonym), assisted me by nominating students and then arranging meetings with the students. He recommended me two students for each day during the four days of research, and according to him all of eight students were "higher-achieving" and "highly motivated". The overall process of participant selection is shown as Figure 2.
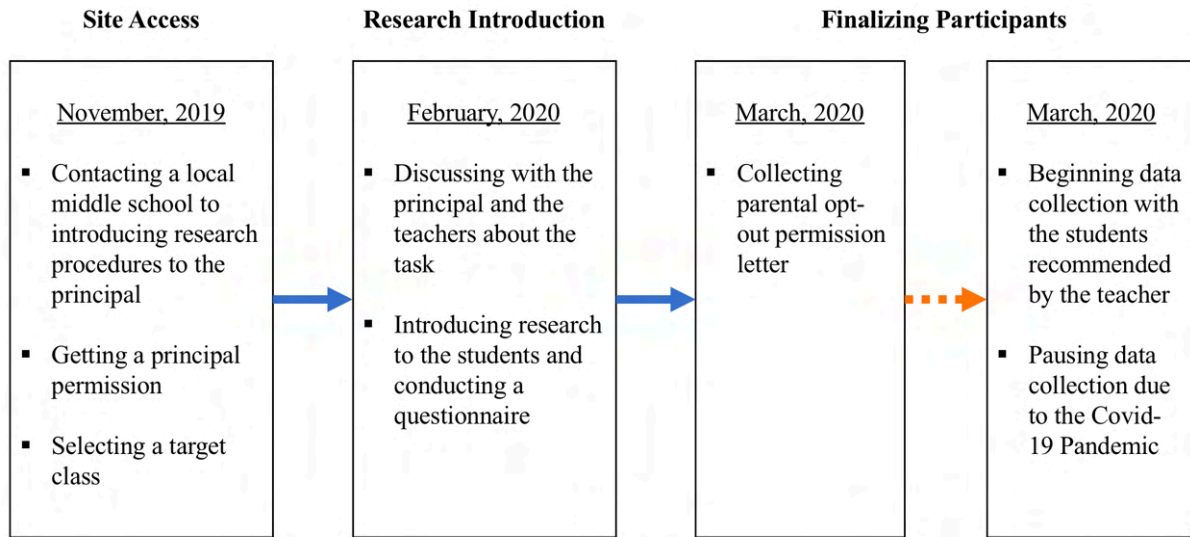
Figure 2. Participant Selection Procedures

3.2 Critical Digital Literacy Tasks

In this study, eight students engaged in two critical digital literacy tasks individually (30 minutes each) using a university-owned laptop. With the consideration of young children's shorter attention span and the fact that most studies on middle school and high school students' online reading inquiry set the online inquiry time ranging from 30 to 45 minutes (e.g., Cho, 2014; Cho, Han, Kucan, 2018), this study provided middle school students 30 minutes of reading time for each task.

Both Task 1 and Task 2 were designed to reflect on different aspects of digital space. Task 1 was a reading task. I provided students with various web sources including Social Media. After reading, students were asked to comment on a webpage during Task 1. Task 2 involved a more school-like task in an open-ended online setting. It also involved students writing a Social Media post. These writings were intended to gain evidence of their participation and communication on

these public online platforms. Upon the completion of the critical digital literacy tasks, the participants were asked to respond to the reflective post-interview questions regarding their experiences with these tasks.

3.2.1 Topic for Critical Digital Literacy Tasks

In keeping with other studies of adolescents' digital reading, I sought to select a topic that would be relevant to my participants' daily lives and experiences and that they could engage with critically (Cho, 2014). I selected gentrification as the focal topic for the critical digital literacy tasks. Gentrification is a nationwide social issue in the United States. The National Community Reinvestment Coalition (NCRC, 2019) defines gentrification as "what happens when lower-income neighborhoods receive massive levels of new investment, adding amenities, raising home values and bringing in new upper-income residents."

I chose the topic for several reasons:

- Urgency: Gentrification is becoming one of the most important social issues in the United States, which is closely related to the issue of social justice and equity.

- Authenticity: Pittsburgh is the eighth-most gentrified city in the United States. Gentrification is an ongoing social issue in Pittsburgh - many middle and high-school students in Pittsburgh have been vocal about.

- Relevance: The participating students can relate to this topic because it is currently happening across the neighborhoods where many of them, their friends, and family members have lived in.

Gentrification, critics claim, has a negative influence on the community. Low-income people and people of color have been forcibly displaced around the country. Gentrification is also thought to be a tool for racial discrimination and working-class marginalization. Nonetheless, it is difficult to conclude that gentrification is solely about displacement because it may benefit a community's economic growth and development. The gentrification process often leads to lower crime rates and business success in retail and leisure areas, such as restaurants, shops, and theatres. Because there are various perspectives that people may hold about gentrification, I suspected that it could be a productive topic to generate data on youths' critical digital literacies.

3.2.2 Task 1: Pre-selected Web-source Reading Task

During the first task, students were given five web sources to read, which were designed to give them general background knowledge about gentrification and different perspectives surrounding that topic.

3.2.2.1 Pre-selected Web Source Reading

The pre-selected five sources were given on the pre-developed website[3]. They were all selected intentionally with the consideration of specificity, perspective, and source type (see Table 2). First, I conducted online research about gentrification and gentrification in Pittsburgh on Google to find reliable sources from different websites that include varied perspectives towards gentrification. After I completed collecting a reasonable number of possible choices of sources

---

[3] https://sites.google.com/site/pghgentrification/home

from multiple cycles of search, I screened them based on the variability of issues of gentrification that each source was presenting.

For example, Text 1 presents several important issues including racial, socioeconomic, and cultural problems occurring in the process of gentrification. It also provides a representative example – what is happening in Bay Area, California. In the contrary, Text 2 includes opposite arguments against gentrification as displacement. It also presents a detailed example – how Amazon's second headquarter can bring magnificent investment that can support under-developed cities. For Text 3, I focused on choosing sources with relevant issues of Pittsburgh's gentrification that the participating students can relate to. Text 3 includes names of Pittsburgh's neighborhoods that the students might live in or know of, and illustrates a detailed process of gentrification that has happened in Pittsburgh. I also choses tweets that are written by authors who actually lived in Pittsburgh and who wrote their own assertions regarding gentrification happening in Pittsburgh.

Table 2. Characteristics of Pre-selected Web Sources

Specificity	Perspectives	Source Types
U.S. (General) ↓↓ Pittsburgh (Specific)	Text 1: (Against) Displacement	Article from .org (with a picture)
	Text 2: (Pro) Revitalization	News article (with a picture)
	Text 3: (Against) What's happening in Pittsburgh	City paper article & Comments (with a picture)
	Text 4: (Pro) Reducing crime & investment	tweet
	Text 5: (Against) Displacing Black Culture	tweet (with a video)

I was concerned about the readability levels of the original articles, which were higher than what I anticipated to be developmentally appropriate for middle school students. Therefore, I shortened the original articles and edited them to simplify vocabulary and sentence structure (see Appendix B Pre-selected Sources for Task 1).

71

While the participants read the sources, I asked questions such as What do you notice? How would you react to this? How do you feel about this? How would you talk about this? How and why is it relevant to you? I posed these sorts of questions in order to support students to express as many cognitive, affective, and emotional responses as possible without restraining their responses to text comprehension-related ones.

3.2.2.2 During-task Writing

As students read each source during Task 1, they were asked to write comments on it if they wanted to. This was to support readers to be more engaged in reading and communicating as critical online readers even in a bounded online setting. The types of comments that I anticipated students might write included informative, persuasive, and inviting comments, as well as provoking ones that can call for actions.

3.2.3 Task 2: Online Reading Inquiry Task

As a second task, students were asked to further search about the topic so that they could create their own Facebook or Twitter post to share their opinion and thoughts on the topic question (i.e., *What are the issues and controversies raised on gentrification in Pittsburgh? How would you stand up for yourself, people you know, and your neighborhood?*)

3.2.3.1 Online Reading Inquiry

Prior to the online reading inquiry task, I gave the following prompt to participants to explain the task itself and the post-task writing activity:

Now, let's move on to your own research about the topic. I want you to focus on this topic question. "What is your opinion about gentrification happening in your city? How does it affect you, people you know, and your neighborhood?" After you finish investigating further about the topic, you will write a Social Media post to share your thoughts and opinion. You will have 30 minutes to conduct your research to learn more about gentrification and gentrification in Pittsburgh. Do you have any questions about this task?

During their online inquiry processes, participants were guided to think out loud their reading processes (Pressley & Afflerbach, 1995). Think-aloud protocols have been used to investigate readers' cognitive reading strategies, as well as the complexity of cognition, the formation of social meaning, and the reactions in different contexts of reading (Afflerbach, 2000). Beyond a single focus of cognitive strategy, this method has been evolved to adopt a dual focus how the focus strategy is situated in the rich context and What else is passing through the reader's mind such as readers' motivations, stances, and mindsets (Cho, 2021). There have been studies that explored acts of reading such as experts and students reading historical texts (e.g., Wineburg, 1991; 1998), mediated learning through modeling of thinking and social interaction (Kucan & Beck, 1997), and web-based reading processes (e.g., Cho, 2014). Thus, adopting think-aloud protocols as a main method for data collection allows a detailed description of complex critical online reading that involves readers, tasks, texts, and sociocultural context.

Because participants would not be familiar with thinking out loud their thoughts during reading, I provided a brief 5-minute training on how to verbalize thoughts by demonstrating a short inquiry session with a different topic before they begin their task. Also, participants were given additional prompts during reading (e.g., What are you thinking?) to promote their think-aloud process.

3.2.3.2 Post-task Writing

Upon completion of online reading, the participants were asked to create a Social Media post to share their opinion and thoughts on the topic (i.e., What is your opinion about gentrification in Pittsburgh? – How does it affect you, people you know, and your neighborhood?) I provided a webpage for them to create a Mock Social Media post that would approximate social media sites such as Instagram, Facebook, Snapchat, and Twitter[4] (Figure 3).
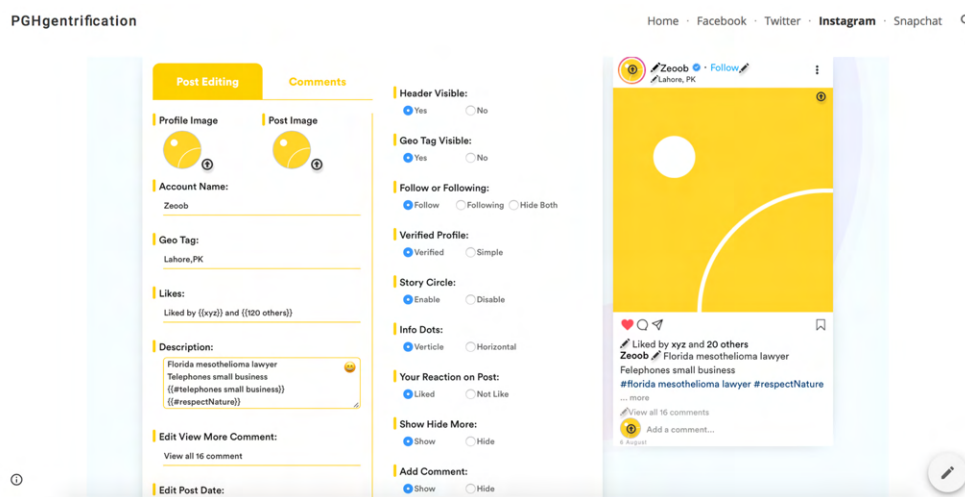
Figure 3. A Screenshot of a Mock Social Media Writing Webpage

The participating students had freedom to choose the Social Media platform of their choice, and as a result, four students chose Facebook, two students chose Instagram, one student chose Twitter, and another chose Snapchat. They were also encouraged to revisit the web-sources they read and incorporate what they read from the online reading inquiry while doing a post-task writing.

---

[4] https://sites.google.com/view/pghpostwriting/home

74

3.3 Data Collection

The primary data source for this study is students' verbal protocols from Task 1 and Task 2. The think-aloud verbal reports were supplemented by a) screen recordings that were recorded concurrently with students' verbal reports and b) during and post-task writings. Table 3 shows the tasks and relevant data sources collected.

Table 3. Data Sources and Construct Measures

Task	Data sources	Construct Measures	
		RQ1. Types of resources brought up by readers	RQ2. Readers' resource use
Task 1-1 (Pre-selected source reading) (30 mins)	·Verbal protocols ·Screen recording	· What kinds of resources (cognitive and sociocultural knowledge, activity, and disposition) readers bring to reading?	· What are the complexity and relationships between resources? · When do readers use different resources and why?
Task 1-2 (Writing a comment(s))	·Student-generated written comment(s) in response to the source		
Task 2 (Online reading inquiry) (30 mins)	·Verbal protocols ·Screen recording	· What additional resources readers use in online reading process?	· What are the complexity and relationships between resources in an online reading inquiry? · How do the use different resources shape different online reading paths?
Post-task 2 (15 mins)	·Student-generated Mock Social Media post in response to the topic or the source		

During reading, the participants were encouraged to verbalize their thinking processes, responses, feelings, and thoughts at any point of their reading. I also provided additional prompts to support their thinking out loud (e.g., What are you thinking now? How do you feel? What made you think that?). Each participant's on-screen behaviors and verbal reports were recorded using the software called *Snagit* that can capture both computer screen and voices. Students' written responses and social media writings were also captured by *Snagit*.

3.4 Data Analysis

Transcribed verbal protocols were analyzed adopting a grounded theory approach, especially a constant comparative method (Glaser & Strauss, 1967). This data analysis strategy involves reviewing and rereading data sources on a daily base until emergent patterns and categories may be identified. From this approach, the initial stage is a basic description of data, followed by conceptual organization and theorization. (Patton, 2002). In grounded theory, well-defined and elaborated coding processes are central to data analysis (Corbin & Strauss, 2008), and it is the "fundamental analytic process used by the researcher" (Corbin & Strauss, 1990, p. 12). Also, the coding process should focus on organizing information into categories related to the central questions of the research. In this regard, data analysis of this study was conducted in two phases with multiple coding cycles by focusing on the research questions. In the first phase, I identified types of cognitive and sociocultural resources that students bring to their critical digital literacy practice (research question 1). In the next phase, I analyzed similarities and differences in students' ways to coordinate those resources to examine a social issue of the time in a digital space (research question 2).

In keeping with a constructivist grounded theory approach (Charmaz, 2006), I sought to remind myself throughout my process that all studies are co-constructed by the researcher and participants (Mitchell, 2014). Therefore, I tried to treat my data as "generated" rather than neutrally "collected," and I tried to consider my analysis process as necessarily affected by me and my perspectives and lenses such as my theoretical framework and my collaborative work with the research project team. I acknowledge that my final coding scheme inevitably reflects the contributions of my research team, as I was working on both projects at once. The larger research project led by Dr. Byeong-Young Cho, Dr. Emily Rainey, Dr. Linda Kucan was conducted at the

same urban middle school as this study. The research team collaborated with the teachers to implement a four-week unit about the history of the Hill District in Pittsburgh (Kucan, Rainey, & Cho 2019). As a part of a larger project, there was a post-unit task: a think-aloud study concerning students' historical sense-making of multiple sources. With the help of my principal investigators, I led data collection and data analysis of this think-aloud study, which aimed to explore how students used their personal and cultural resources in a historical multisource reading task, which had similar methodologies and approaches to those used in this study.

In particular, there was an overlap in the coding schemes, in which the way of naming codes as a team influenced my way of coding in this study (and possibly vice versa). First, in a larger study, we coded for source of knowledge, experience, and beliefs (KEBs) that students bring into reading that were categorized into two sub-groups—personal and cultural source (historical, geographical, local community, political, economic, broader cultural group, word, youth) and hill unit (teacher, text, activity). Secondly, we coded for activity for understanding that included six sub-categories: a) processing text ideas (within-textual), b) making intertextual connections, c) evaluating and judgment, d) proposing, e) attributing, and f) comprehension monitoring. Lastly, we also coded for socioemotional/affective response that showed connecting and emoting. Although the ways the codes were categorized might be different, this coding scheme clearly influenced my way of coding for this present study.

3.4.1 Data Transcription

I transcribed all recorded verbal protocols by referring to the transcription convention of verbal protocol developed by Cho (2011). Although many studies on online reading have been transcribed for readers' navigation behaviors using transcription convention for reader-computer

interaction protocols, I chose not to transcribe navigational behaviors because my main focus was not on the navigational behaviors captured on the screen.

Table 4. Transcription Convention of Verbal Protocols

Meaning and Symbols	Examples
Elapsed time: [minute:second-minute:second]	[04:19-09:17]
Speaker: · Participant: Pseudonym · Researcher: R	Jasmine: It's interesting and I like how it was like illustrated it. R: Why do you think that?
VP excerpts: Regular font Quotes from text (or read-alouds of text, search terms): " " Pause: … Researcher noted · Comments ( ) · References: [ ] Text/reference information: *Italicize font*	Michelle: Oh, it says "Pittsburgh"! "Pittsburgh is one of the most gentrify cities in the U.S" That's crazy. Eleasha: hmm.. I'm guessing... cause this says, Eleasha: The president is just like the government's puppet. (why do you think so?) Celeste: This [article] is like what other article said. Serena: [After reading Text 3 Sentence 5 – *Google made a big impact on this neighborhood, too. Once America's steel town, the city is now a hub for Google, Amazon, and Uber*.]

As a first step, each student's transcribed verbal protocol was segmented based on the meaningful topic being identified. The segments included as many related verbal utterances as needed in order to fully capture student thinking related to a specific topic. A segment could be one utterance (e.g., "*I'm not sure*") or several utterances (e.g., "*I think the author is biased, but this person is also giving us a statistical evidence. So, I think it is credible enough to believe what he or she is saying here*"). I recorded each segment in an Excel spreadsheet and then imported them to Nvivo 12 software.

3.4.2 Data Analysis Software: NVivo

I used a qualitative data analysis program called NVivo 12 Software (QSR International Pty Ltd.), which is one computerized tool that can support researchers' effective data management of qualitative data (Bazeley & Jackson, 2013; Richards, 1999; 2015). Richards (1999) argued that NVivo "is designed for the researchers who wish to display and develop rich data in dynamic documents", and it is a tool that is designed to serve a grounded theory approach. This tool can help organize and manage data files and the representation of coding, but It will be a researcher who makes every decision regarding data organization, coding, and analysis.

I specifically chose to use NVivo because it is an effective tool to analyze screen-recorded verbal protocol data. First, It assists researchers in assigning multiple codes to a single segment of text, image, audio, or video. For example, one segment of a student's utterances might be related to several texts from her/his previous reading, prior knowledge, experience, and a certain image or word within the current text. By using this software program, it becomes possible to create or assign multiple codes to pieces of utterances in more transparent and reliable ways. In addition, it can support a construction relational networks across the large numbers of codes and sub-codes. Because each utterance of students was assigned to multiple codes and sub-codes, it was necessary to have an organized system to identify relational networks and visualize them. Last but not least, themes and patterns of the complex data can be identified through the use of memos/links and visualization. I considered visualization as a process, not a product. That is, I used different visualizations produced by NVivo 12 Software as an additional data to identify the themes and patterns of critical digital literacy tasks done by the participating students, not as findings.
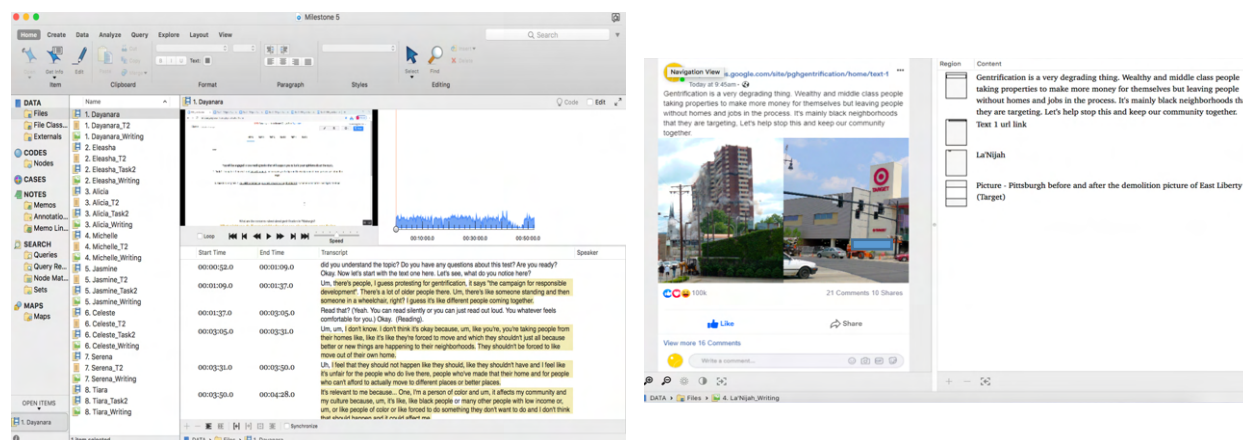
Figure 4. A Screenshot of an Imported Transcription of Verbal Reports and Image of a Social Media Post

3.4.3 Phase 1: Types of Resources Used by Readers

First data analysis focused on identifying and describing different cognitive and sociocultural resources (knowledge, activity, and disposition) that readers brought to critical digital literacy tasks. After the transcription is segmented and recorded in an Excel spreadsheet, I imported screen-recorded video data and the transcription to the NVivo 12 Software. I also imported the screenshots of students' writings as this software enables the same coding process with images. With the imported transcription and images, open coding was conducted to identify emerging concepts from the data. Because my first central question of research is about what kinds of resources they use, during open coding, I focused on identifying how readers read each source, and in what ways they engage in critical digital literacy tasks by making inferences to their thinking and reading processes.

More specifically, as a first step, I created "parent nodes" for cognitive and sociocultural resources and generated a series of subservient levels of nodes that are related to each dimension

by referring back to the theoretical framework. I also created "cases" for each text from Task 1 to identify which text, sentence, and/or words that the students are referencing to (see Figure 5).
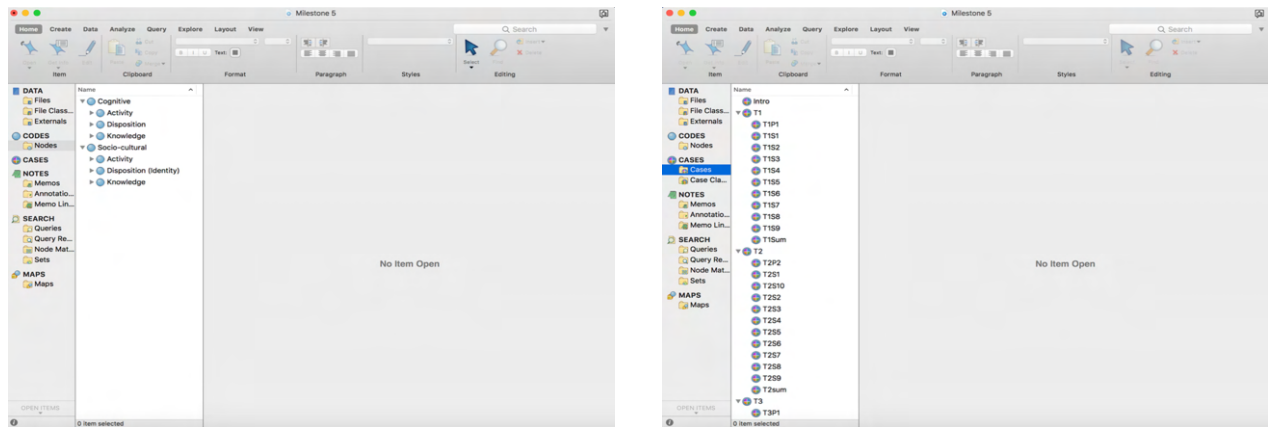
Figure 5. Nodes and Cases in NVivo Software

Next, I conducted axial coding to identify sub-concepts, properties, and dimensions to fully explain different concepts (Strauss & Corbin, 1990). Even though I began my coding with some nodes directly built upon the theoretical framework, I constantly revised and updated the nodes and sub-nodes based on the insights from my ongoing data analysis (see Figure 6).
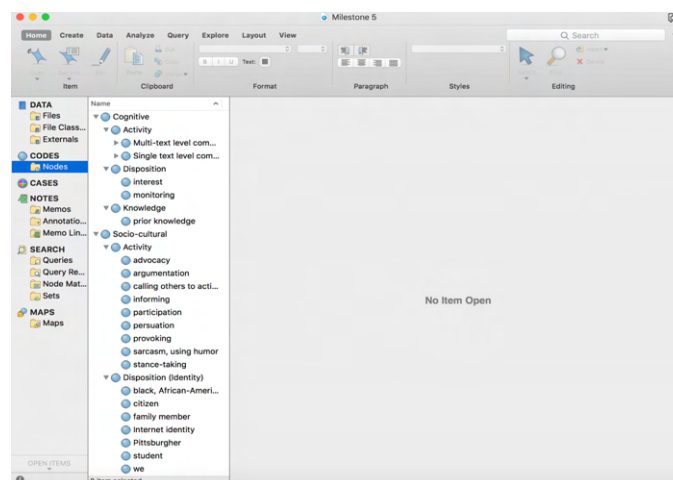
Figure 6. A Set of Sub-nodes in NVivo

81

3.4.4 Phase 2: Analysis of Readers' Resource Use

Upon completion of the analysis of types of resources, I analyzed how readers coordinated different resources when they examine a social issue in a digital space. I approached the analysis with two directions: a) characteristics of individual student's critical digital literacy practice (Task 1 and Task 2) and b) characteristics of critical digital literacy practice across the students.

For the first analysis of individual students' critical digital literacy practices, I analyzed each student's coded transcripts to find patterns and characteristics. In addition to those close examinations of coded transcripts, I also used a chart that shows number of coding references of each student to verify the tendency in their digital literacy practice (see Figure 7).
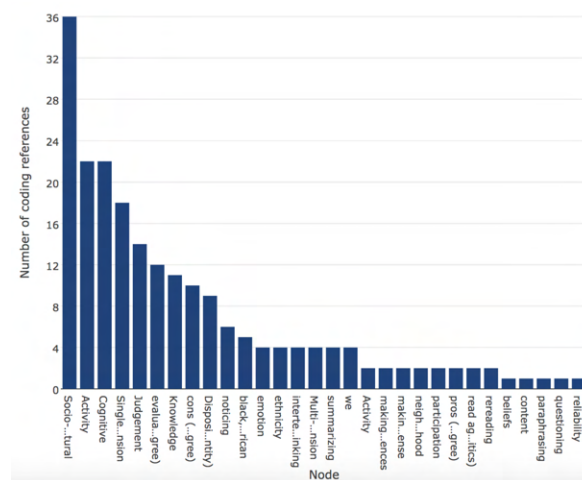
Figure 7. An Example of a Chart for Number of Coding References

As a second step to find out the patterns and characteristics across the students, I created different visualizations using a function called "Explore Diagram," which shows how different data files and codes are related. Figure 8 and Figure 9 show the examples of the diagram that displays the connections between the specific code and the data files, the codes, and the cases.

82
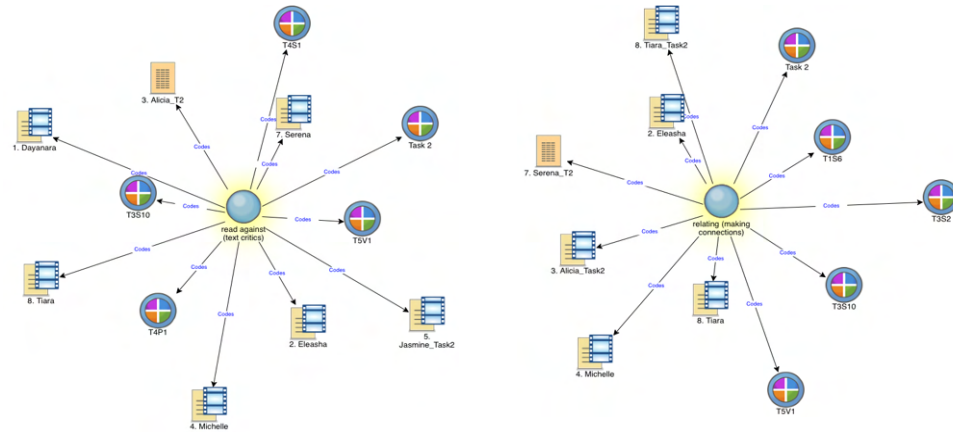
Figure 8. Diagrams for Each Code (Reading Against Texts, Relating)

As shown above, the code "reading against" which is a sub-code of the parent code "socio-cultural dimension" – "activity", has been coded in different cases (i.e., texts). The texts that were connected to this code were about the gentrification in Pittsburgh. Another example was "relating", which was coded for the same cases (i.e., texts) as the code "reading against". Therefore, I could make inferences about the role of proximity toward the topic in readers' engagement in sociocultural activities such as reading against texts and relating.
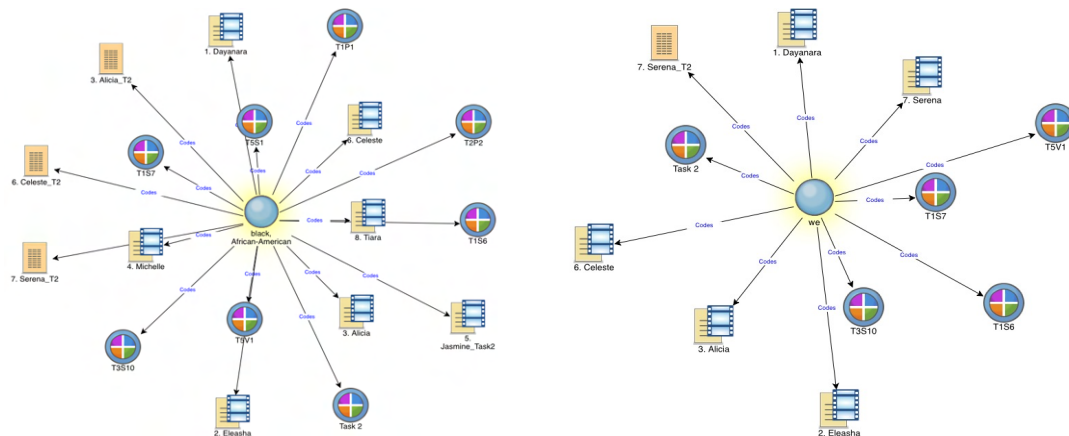
Figure 9. Diagrams for Each Code (Black, We)

Also, I found that the source type and the triggering words mattered when students enacted their identities as Black youth or identify themselves with minority people (i.e., people of color) described in the texts. On the other hand, they enacted identities as middle school students when they read the articles that were similar to the traditional printed texts used in schools.

In addition to exploring the diagrams generated in NVivo 12 software program, I also compared and contrasted a set of coded references for each node as a way to identify the similarities and differences across the students (see Figure 10).
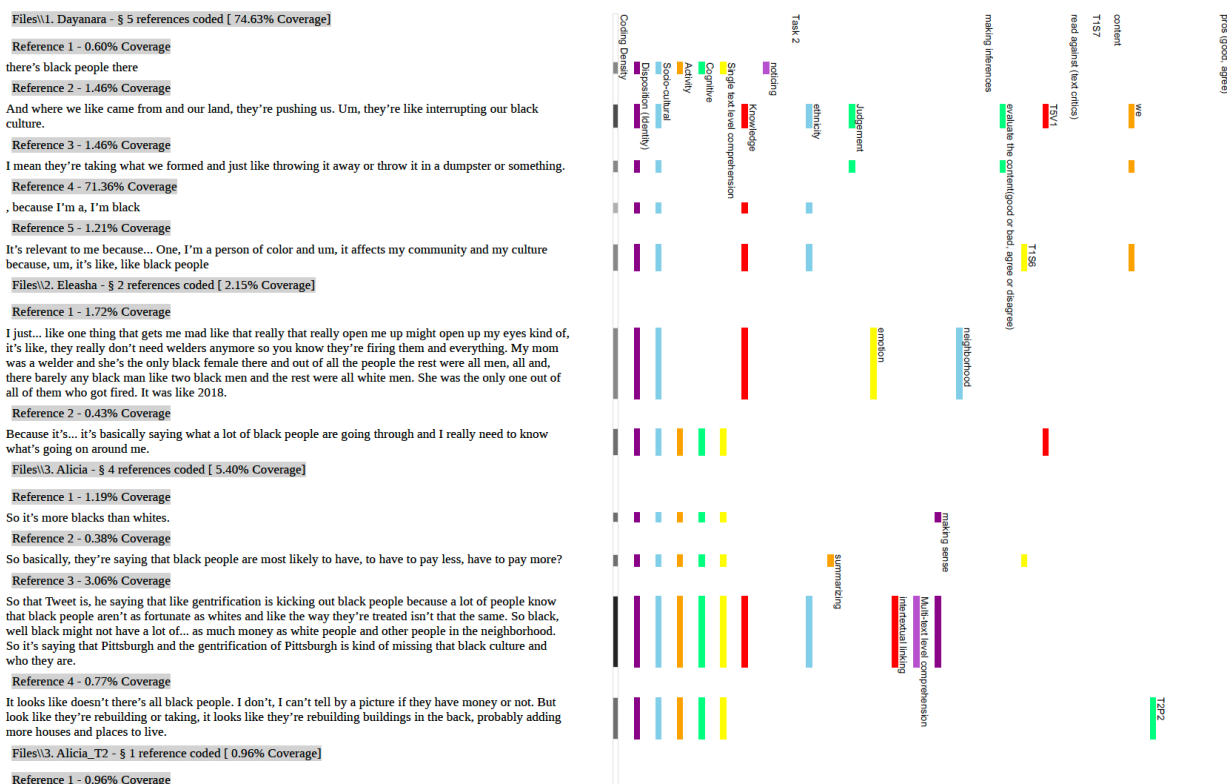
Figure 10. An Example of Coded References for Each Node

Moreover, because I had two different sets of literacy practice data from Task 1 and Task 2, I also analyzed distinctive characteristics of pre-selected source reading and online inquiry process, if there is any.

To analyze students' critical digital literacy practice during Task 1 and Task 2, I made inferences regarding what types of resources had been activated, and how they were involved in their reading and thinking using first and second cycle codes and coding (Miles, Huberman, & Saldaña, 2014). As Miles, Huberman, & Saldaña (2014) suggested, a researcher can create different types of codes to examine information across data. While I conduct first and second cycle coding, I referred to the a) results from the analysis of resource use and b) theoretical framework that I had developed to identify similarities and differences of reading patterns that readers show while they read multiple web-sources during two tasks and how those are related to their use of resources. For example, students who activate mostly cognitive resources might show different readings compared to students who use both cognitive and sociocultural resources. It can be also possible that students who employ similar resources can show different literacy practices in a digital space. In particular, I attempted to identify how the students' use of resources is related to their online search processes. Specifically, the relationships between the resource use and the choices that students make during their online reading (e.g., creating search terms, choosing specific types and topics of web-sources to read, participating in writing and communicating) were analyzed and identified in the coding process.

3.5 Researcher Positionality

I am an Asian American living in the United States, a middle-class woman, and a graduate student. I am from Korea, and before I came to the United States, I was a part of the Korean mainstream and from a middle-class family. When I was growing up, I hardly had a chance to learn and think about social justice and equity issues, even though there has always been inequity

and unjust issues in Korea. However, after I came to the United States as an adult, I have witnessed and experienced challenges and issues as a part of minority group that I have never even thought about before. I also learned that I could refer to different identities I have such as an Asian woman, minority, international researcher, and immigrant, and I understand these as overlapping.

Especially, in Pittsburgh, as I worked with teachers and students in an urban middle school for more than three years, I firsthand saw the importance of raising voices for socially just education, importance of supporting public school teachers, and the securing well-being of children. As a research assistant, I also had opportunities to incorporate the values of diversity and justice into the curriculum and instructional practices in an urban middle school. These experiences have opened me to learning about issues related to social justice and diversity in education and has driven my work to listen to students in marginalized groups' voices and echo their voices by writing about them.

Even though I am a person of color who can understand the marginalized groups of people, I also acknowledge that I could be perceived as a privileged minority who was born and raised in a big city as a middle-class woman and who received higher education in one of the prestigious universities. My unique perspective as a marginalized but privileged minority can provide opportunities for me to observe marginalized groups with distinctive perspectives. In particular, as am both insider and outsider of racial tensions and social issues happening in the United States, I can observe and report both sides by relating and distancing myself to them.

As I collected data with middle-school-aged Black girls in Pittsburgh, I was aware of points of similarity and difference between us. I tried to bring an ethic of careful listening to my work with students as a way of avoiding making assumptions about them as individuals or a group.

I know that there are references and meanings that I may have missed because my experiences and knowledge bases are not the same as my participants.

In working with Black youth, I was also aware of the ways in which the research community has tended to universalize or bring deficit frames to the study of students of color. I sought to design my study to take resource(asset)-based approaches to honor, explore, and extend students' experiences, opinions, and voices. I also have kept myself to be careful and cautious not to make assumptions about students' intentions or generalize them, but to report what their intentions were or what their language suggests to me.

4.0 Findings

My research questions were: 1) *What kinds of cognitive and sociocultural resources do middle school students activate and employ as they examine a social issue of the time in a digital space?* 2) *In what ways do middle school students coordinate cognitive and sociocultural resources to examine a social issue of the time in a digital space?*

Based on my analysis of data collected with eight eighth grade students, I assert that students' literacy practices in digital spaces—such as websites and social media—are impacted not only by their cognitive processing skills, but also by their cultural backgrounds, experiences, belief systems, and identities. Table 5 provides an introduction to each student about their literacy practices and experiences in a digital space, as well as their prior knowledge about the topic (See Appendix A. Student Questionnaire).

Table 5. Student Responses from the Initial Questionnaire

Name	Daily use of the internet	Social Media use	Experience in posting/commenting on Social Media	Social issues of interest	Source of information	Experience in posting/commenting about it	Prior knowledge about gentrification
Jasmine	More than 5 hours	• Instagram • Snapchat • TikTok • Instant Messaging apps	I usually comment "you look pretty".	The issue with Donald Trump and Michael Bloomberg.	• Family members • Television shows and news channels • The internet	No	I never heard of it
Michelle	More than 5 hours	• Instagram • Snapchat • Facebook • TikTok	I usually comment under cute Tiktok boys post with emojis.	Forest Fires in Australia	• Television shows and news channels • The internet	I reposted a picture of the animals that were hurt in the fire to bring more awareness to the situation.	Nothing
Alicia	More than 5 hours	• Instagram • Snapchat	On Snapchat, I´ll swipe up on my friends' stuff saying they look cute or heart eyes.	Police brutality.	• Family members • Television shows and news channels • The internet	No	Nothing, but from research, it means when you get rid of/ push off poor people and middle-class people.
Dayanara	Between 3 and 5 hours	• Instagram • Snapchat • Facebook • TikTok • Instant Messaging apps	I comment on pictures, and "like" videos.	The corona virus	• Family members • Television shows and news channels • Print media • The internet	No	Nothing I don't know what it is
Serena	More than 5 hours	• Instagram • Snapchat • Facebook • TikTok • Instant Messaging apps	Videos of me dancing	The social issues that are happening right now in the United States. a lot of killing is happening today.	• Family members • Television shows and news channels • The internet	I comment on Facebook and snap chat that "the world is crazy today, all this killing."	When they push poor people or middle class out.

Celeste	More than 5 hours	• Instagram • Snapchat • Facebook • TikTok	Relatable post	Social issues are haters. I'm interested in life hacks and beauty.	• Family members • Friends • Television shows and news channels • The internet	No	Rights. maybe?
Eleasha	More than 5 hours	• Instagram • Facebook • TikTok	"I do that too!"	THE CORONAVIRUS	• Friends • Television shows and news channels • The internet	No	not much
Tiara	More than 5 hours	• Instagram • Snapchat • TikTok • Instant Messaging apps	I post on my Instagram, but I don't like commenting on people's stuff	Kobe Bryant died.	• Friends • Television shows and news channels • The internet	No	Idk
Note. All names are pseudonyms.							

As their responses to the questionnaire showed, all of the participating students actively use the internet on a daily basis and use a variety of Social Media including Instagram, Snapchat, TikTok, and so forth. It was also noteworthy that they mostly engage in Social Media to participate in youth or peer online communities through watching TikTok videos or Snapchat posts. In addition to that, the students were interested in a range of social issues from the Coronavirus to Police brutality, and to the issue with Donald Trump and Michael Bloomberg. It should be noted that all students except for seven students from this class answered a variety range of topics that they are currently interested in. Answers from the students are as followings:

"*Anything involving presidents because the one we have now has sooo many issues*."

"*Global warming*"

"*Environmental issues in the United States include climate change, energy…*"

"*Upcoming Election*"

"*Pro-life vs. Pro-choice and Politics*"

"*Drug abuse*"

"*Racist*"

These answers themselves show how today's young students are deeply involved in and aware of different social issues. However, when it comes to writing posts or comments online, in students' initial questionnaire, they answered that they rarely engage in any of those activities to participate in the conversations about social issues. There were two participating students who answered that they have experiences in posting or commenting on the online platforms about the issue of their interests. Michelle answered that she is interested in "*Forest Fires in Australia*", and she wrote "*I reposted a picture of the animals that were hurt in the fire to bring more awareness to the situation.*" In addition, Serena wrote "*The social issues that are happening right now in the*

91

United States. a lot of killing is happening today," and she added "*I comment on Facebook and Snapchat that "the world is crazy today, all this killing.".*" These two examples show that those middle school students know how to raise awareness and their voices to the social issues that are holding their attention

In the following sections, I describe the types of cognitive and sociocultural resources activated and utilized by the participating students, and I present three distinctive dimensions of digital literacy practice—cognitive–constructivist, sociocultural–critical, and multimodal–digital—as well as interplays of cognitive and sociocultural resources within and across these dimensions. Then, I present case analyses of three students to closely examine the intersection of these three dimensions, which identify how students act as critical consumers and producers of information in a digital space.

4.1 Types of Resources Used During Digital Literacy Tasks

In this section, I report the results related to the first question: What kinds of cognitive and sociocultural resources do middle school students activate and employ as they examine a contemporary social issue in a digital space? I present an overview of cognitive and sociocultural resources that the participants activated during digital literacy tasks (see Table 6). I then offer detailed accounts of each resource identified in the data analysis, with representative examples

Table 6. Types of Resources Used During Critical Digital Literacy Tasks

Categories				Description	Examples
Cognitive	Knowledge	Prior knowledge about the topic (i.e., gentrification)		Readers may activate knowledge about the task topic (gentrification).	*I mean, I knew downtown had, like, some redevelopments and something like that, but not like this.*
		Prior knowledge about the subject matter		Readers may use a variety of knowledge about the topic of a text they are currently reading.	*That kind of sounds like the Hill District which they built that big stadium, but it failed.*
	Activity	Single-text comprehension	Elaborating	Readers may attempt to clarify the information or further discuss the piece of information suggested within a text.	*Like, I think those 50,000 high-paying jobs, anyone could get those, not just the rich people already. I think more of the people who are struggling financially should get those jobs because if they're struggling financially high-paying jobs would get them back on their feet and get them living in a better house.*
			Making inferences	Readers may make inferences about the meanings, assumptions, motives, perspectives, intents or biases hidden in text.	*I'm guessing . . . 'cause this says "what's the difference..." so I think they'll get their chance if it were different from back then and now? Like, something needs to change.*
			Making sense of text idea	Readers may try different ways to understand or express confusion about the text idea.	*I don't know, um, he's saying that East Liberty neighborhood has avoided gentrification while reducing crime? I don't know.*
			Noticing	Readers may identify and pay attention to the important ideas and concepts, time and places, and events and participants that are represented in text.	*It looks like there's older people instead of younger people. Some have disabilities. Some people are protesting. Some people are talking. That's all I noticed.*
			Questioning	Readers may ask questions to elaborate text ideas or to increase understanding.	*What was the point of dividing Blacks and whites?*
			Relating (making connections)	Readers may use various sources of self-related knowledge and express connection to social entities such as family, peer cultures, lifestyles, and attitudes.	*That's where I've seen of this. It was, like, near downtown, it was on the Hills District. They have a lot of houses like this, and then Bloomfield, and I see them all the time.*
			Rereading	Readers may read the same sentence, paragraph, or passage again to increase their understanding.	*I was reading this one over again.*
			Summarizing	Readers may provide a summary and/or paraphrasing of what has been read at the local units of text, such as paragraphs and units of information rather than whole-text units.	*They say basically, people, they're pushing people out of their neighborhoods for people who have like, who are richer, whoever wealthier.*
		Multiple-text comprehension	Intertextual linking	Readers may construct an overarching statement by integrating text ideas across different paragraphs and information units.	*So, like, when the other, like, site, it said that gentrification was bad, but on this site, it's saying it doesn't have to be bad.*

			Making inferences by using knowledge from prior texts	Readers may make inferences using prior knowledge developed from reading prior texts.	*This one mentions racism. Well, I don't understand this one, 'cause, like, it's not towards, like, it's not racism or like that, but it's, like, low, like misfortunate, like low-income people.*
	Disposition	Motivation/interest		Readers may express their engagement and interests in reading or monitor themselves to achieve a reading goal.	*It made me, like, think about it more. Like, it adds more to it.*
		Self-regulation		Readers may check in their mental states, thinking processes, progress of meaning-making and understanding, and resource uses. Readers may identify processing difficulties, uncertainties of meaning, and any challenges in the sense-making of multiple sources.	*I think I'm gonna just skim through this. Can I look back at the [topic] question? "What might you do if your neighborhood or one close to yours was facing gentrification?"*
Socio-cultural	Knowledge	Funds of knowledge	Personal Experience	Readers may activate various personal experiences such as daily events, classroom activities, family events and so forth.	*Cause it's like . . . I went there one time, it's almost like a diverse—so, like, I wouldn't expect nothing like that [gentrification] coming from Washington.*
			Economics-related knowledge	Readers may use economics-related knowledge that ranges from students' families' financial situations to the housing and employment systems.	*I was going to say that Amazon can give a lot of people a lot of jobs, and it deserves to be in a city where there aren't a lot of jobs for people, so that would definitely help them with their incomes in their houses.*
			Geographical knowledge	Readers may use their geographical knowledge about neighborhoods in Pittsburgh.	*Yeah. Actually, like within these neighborhoods, there are like North side, like part of North side. Cause I live close to Lawrenceville. It's like 10 minutes away.*
			Community-related knowledge	Readers may use various sources of community-related knowledge in relation to people, relationships, neighbors, and neighborhoods.	*Yeah. Actually, like, these neighborhoods, there are all, like, North side, like, part of North side. 'Cause I live close to Lawrenceville. It's like ten minutes away.*
			Broader cultural knowledge	Readers may use various sources of cultural knowledge concerning race, gender, age, and so forth.	*So that tweet is, he's saying that gentrification is kicking out Black people because a lot of people know that Black people aren't as fortunate as whites, and, like, the way they're treated isn't that the same. So, Black—well, Blacks might not have a lot of . . . as much money as white people and other people in the neighborhood.*
		Beliefs and worldviews		Readers may activate their personal sets of worldviews, beliefs, or perspectives, which include beliefs about human beings, beliefs and opinions about societies, value judgments about what is worthwhile or important, and beliefs about how the world is organized and how it works.	*They should be for all people. And I, I agree with that because, um, it's important for everybody to receive the same education, high-level education, people to receive the same, um, the same equalness. Things shouldn't be unfair like that.*

			Description	Example
		Emotion	Readers may express a range of emotional states in response to certain problems and issues, and readers may express their understandings of others' feelings, situations, problems and issues.	*I don't know . . . like, right now I just have a whole bunch of mixed emotions. I don't know whether to believe it or to be angry because he said that. I'm very confused.*
	Activity	Participation	Readers may actively participate in communicating and expressing their opinions, emotions, and beliefs (e.g., advocating, augmenting, calling others to action, informing, participating, persuading, provoking, using humor (sarcasm), and stance-taking).	*Can I say [write a comment] "Anthony, I agree because . . . today people are trying to…"?*
		Judgment	Evaluating the content	Readers may express their opinions about the idea represented in texts (good or bad, agree or disagree, balanced).	*I think this idea is good. Like having gentrification, not push people out, but still bring money in.*
			Postponing judgments	Readers may postpone their judgment and hesitate to express their opinions.	*So, like, I can't really talk about a place that I've never been. I can't really pick a side saying 'Oh boy, this is the most [gentrified city], because . . .' and 'that is the least [gentrified],' 'cause you have to do a whole bunch of research probably.*
			Reading against texts	Readers may interrogate, question, and challenge an idea with judgments of its validity, plausibility, and value.	*I don't think that's true because like it's not just East Liberty that has crime, it's the whole city, it's just—it's all Pittsburgh that has crime. And, like, a lot of shootings, the police brutality and all that. So I don't think they changed or they're trying to reduce crime, yeah.*
			Suggesting different ideas	Readers may make a (counter) claim for suggesting and proposing new ideas from different and/or new approaches to the problems.	*I think that it should be available some more than a specific group. 'Cause I don't think it's fair that people are being able to push off that they can't afford it, so I think it should be affordable to many people and not just a specific group.*
	Identity	Offline identities		Readers may enact their various offline identities, such as student, Black (we), Pittsburgher, family member, and so forth.	*And where we came from, and our land, they're pushing us. Um, they're, like, interrupting our Black culture.*
		Online identities		Readers may enact online identities which may be the same as or different from their offline identities.	*Using online ID (babytayaboo12) to post on social media.*

4.1.1 Cognitive Resources

4.1.1.1 Knowledge

Before they read, participating students activated prior knowledge about the task topic (i.e., gentrification) and about the text being read. Students also used prior knowledge during their reading. Even though some students utilized prior knowledge related to the topic and the subject matter of texts, most participating students used other resources because this topic (i.e., gentrification) was a novel, unfamiliar topic for all of them. In the following section, I will define two categories of prior knowledge and provide examples to illustrate how students drew upon them while reading different texts.

Some students activated prior knowledge about the gentrification, which is the topic of this study's tasks. For instance, one student, Michelle, brought prior knowledge about the redevelopment of Downtown Pittsburgh.

> Michelle: [After finishing reading Text 3 – Pittsburgh is one of the most gentrified cities in the U.S.] It's good for me to know about cause it's Pittsburgh cause then I didn't know that before, I mean I knew downtown had like some redevelopments and something like that, but, not like this.

Michelle's previous knowledge enabled her to better understand the text explaining how different neighborhoods in Pittsburgh are becoming gentrified and the problems this creates; furthermore, it also promoted her engagement.

> Eleasha: [After reading Text 3 Sentence 3 – *East Liberty went into 30 years of downfall in the late 1950s after city planners launched an urban renewal project that ultimately failed.*] That kind of sounds like the Hill District which they built that big stadium, but it failed.

Similarly, Eleasha connected her knowledge about Pittsburgh's Hill District, as well as the failure to develop a formal Civic Arena site, when she read about an urban renewal project.

However, this activation of prior knowledge did not appear to result in a deeper understanding of the text or the topic; rather, it yielded only a simple connection between appearances of the word "gentrification" in a text and the item of prior knowledge Eleasha possessed. The example of another student, Serena, also showed how students who bring prior knowledge do not necessarily achieve a better understanding of the text idea.

> Serena: [After reading Text 3 Sentence 5 – *Google made a big impact on this neighborhood, too. Once America's steel town, the city is now a hub for Google, Amazon, and Uber.*] Because back in the day, they never had like technology like that.

Other students also utilized their prior knowledge developed in school activities or discussions. For example, Tiara talked about how she and her classmates discussed gentrification happening in more Black communities in the Manchester area of Pittsburgh, which resulted in her friend moving out of that community.

> Tiara: I mean, um, so we were talking, it was in class before, and it was sort of just like this. And one of my friends said that one of their other friends from a different school had to move out of like down Manchester because there's a lot of gentrification happening and like basically they're turning it into a mostly white community and force them to move out to more, I guess, um, more Black community.

An additional example of prior knowledge use was students' utilization of prior knowledge related to the subject matter of texts to make sense of the novel information that they encountered during the online reading inquiry.
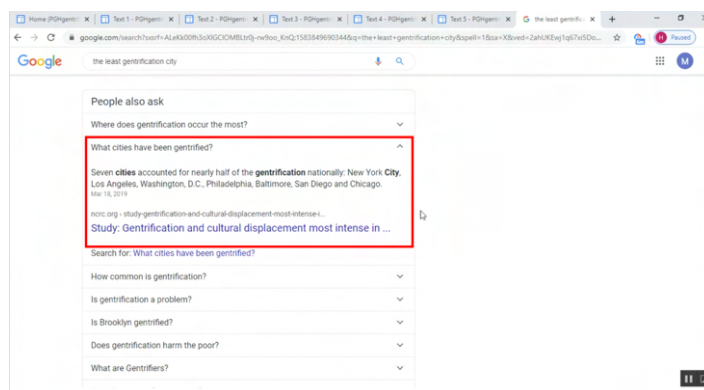
Alicia: [Task 2] To me, I think <u>Chicago would definitely be gentrified because like all the crime rates and all that stuff</u>. People would probably try to get all like this, bad neighborhoods that are poor and try to get more wealthy ones because there's a lot of shootings on those really nice streets, and wealthy people… because they don't really like that. But usually on the poorer streets, there's a lot of gangs and guns and violence so people probably try to move out, or the people might try to come in and stop all that and make it a better neighborhood. But there's people who still don't want that to happen probably will live somewhere else, and it'll continue to happen.

As Alicia searched for "*the least gentrification city*", she found that "*[s]even cities accounted for nearly half of the gentrification nationally. New York City, Los Angeles, Washington D.C., Philadelphia, Baltimore, San Diego, and Chicago*." She reacted to this piece of information by saying, "*To me, I think Chicago would definitely be gentrified because, like, all the crime rates and all that stuff.*" Furthermore, she elaborated on her knowledge about crimes, shootings, guns and violence, as well as how those phenomena may be related to the process of gentrification.

In summary, I found that some students used their prior knowledge about gentrification and the text's subject matter both before and during reading. Nevertheless, the specific cases in which students used their prior knowledge were not frequent enough compared to other resource uses due to their lack of familiarity with the topic.

4.1.1.2 Activity

The participating students engaged in a variety of cognitive activities, which could be divided into two broader categories: single- and multiple-text comprehension.

4.1.1.2.1 Single-text comprehension

Summarizing

During both single- and multiple-text comprehension activities, one of the most prevalent reading activities was summarizing, in which students provided a summary and/or paraphrasing of what they had read at the local units of text, such as paragraphs and whole-text units. Students tended to put what they just read into their own words, and because the length of each text was relatively short in Task 1, the students mostly provided summaries of each text after reading the whole text. The following are examples of students' Text 1 summaries.

> Dayanara: They say basically, people, they're pushing people out of their neighborhoods for people who have like, who are richer, whoever wealthier.

> Alicia: So… it's basically saying that gentrification is when… like we said before, like when they're bringing in new people to the neighborhood so they can get more money probably for their businesses and to be able to expand their neighborhood because the more wealthy people we have more money you make, and people, of course, try to make money.

In the above examples, Dayanara and Alicia summarized the text idea by simply paraphrasing sentences from the text without any personal impression of the text. However, other students focused on important ideas (e.g., displacement of people of color and low-income people) to summarize their reading, as shown below.

> Michelle: Like, they just want more money and they're not thinking about other people because it says there's also people with disabilities who lose their homes and it's like they're not regular people, so they need help with things, but they're losing their house because people want more money.

> Jasmine: It like more explains it and like how people of color are being like moved away because of the, um, situations and like they're low income.

> Serena: Basically, it's saying that gentrification is like about people of color and like people living in poor neighborhoods.

Celeste: This is about African Americans and them being pushed away from their communities for the richer people.

Dayanara and Alicia's text summaries represented their focus or viewpoints in reading. Even though Text 1 consisted of several different paragraphs, students tended to focus on the specific paragraphs that presented the stories of people with disabilities, people of color, and people with low income. This tendency shows that even the simple summary of a text can be a representation of students' perspectives and ways of thinking.

Noticing

While reading, students also paid attention to, and noticed, the important ideas and concepts, times, places, events and participants that are represented in the text and/or critical for their understanding. Noticing occurred most frequently when the students read images. Indeed, students provided brief descriptions of what they saw in an image, including objects (such as buildings), people, people's characteristics (e.g., ethnicity, age) and situations.

For example, as Alicia looked at the image of Text 1, she pointed out things that she noticed: "*It looks like there's older people instead of younger people. Some have disabilities. Some people are protesting. Some people are talking. That's all I noticed.*" For her part, Dayanara noticed the situational factors in the image that was presented in Text 2: "*Here's people, I guess protesting for gentrification. It says 'the campaign for responsible development.' There's a lot of older people there. Um, there's, like, someone standing and then someone in a wheelchair, right?*"

In addition, some students also observed how "Black people" were represented in the image. Tiara observed that "*[t]here's no Black people in the picture [image from Text 1]*," while Celeste ("*It's a picture with mostly African Americans or all African Americans*") and Serena ("*It was like . . . a building. I mean, I see, like, buildings and I see, like, people of my skin color, like,*

doing what they have to do and working hard. And, like—she's, like, the boss.") identified Black people in the image from Text 2.

Furthermore, students noticed and focused on things that were related to their prior knowledge, experiences, and point of views. First, students (like Michelle) with prior knowledge about the author (Bill Peduto) were more likely to notice the author information: "*Bill Ped . . . Ain't that the mayor? Mayor Peduto? . . . I've seen him, I met him before, 'cause I'm the president of the school.*" In addition to Michelle, several other students mentioned their acquaintance with the mayor as well as the day when he visited their school.

Some students also noticed important sentences or ideas from text as they close-read them. For example, some students noticed one word that drew their attention and reacted to it as Michelle and Eleasha did.

> Michelle: Oh, it says "Pittsburgh! (Yeah), "Pittsburgh is one of the most gentrify cities in the U.S" That's crazy.

> Eleasha: I think that like Amazon, it really is very good and popular like, there are a lot of people rely on, so it can a lot of money working there. For a short period of time, my mom and my grandma worked at Amazon.

Moreover, Alicia actively recognized the important ideas in the texts she read during Task 2. When she searched for "*what is gentrification like in Washington dc,*" she found a paragraph explaining gentrification in Washington D.C, which is cited below. She then noticed a sentence that mentioned a study suggesting that gentrification has not pushed low-income residents out of their homes.
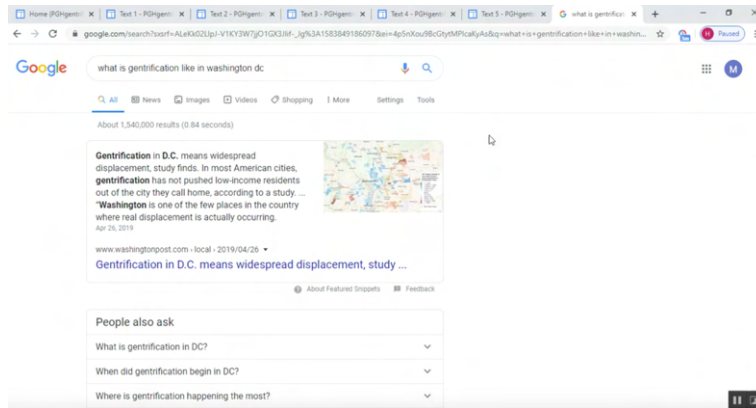
Alicia: Oh, it's saying, "*it's the most gentrified...*" but then it said, "*According to the study… that they have not pushed low-income residents*" and... so it's like 'he say, she say' cause one person is saying it is the... 40%, and another person is saying…the study shows that they are not pushing anybody out of their homes.

These examples of noticing indirectly reflect the particular attention that the students are maintaining with their goal of reading and searching. Most students noticed something relevant or important to their focus of reading. That is, they were actively seeking the information they needed to achieve their reading goals.

Elaborating

Some participating students elaborated the text information to clarify or further discuss the piece of information suggested within a text, which they used to support their arguments, validate their reasoning, and explain something different from—or similar to—a particular detail described in the text. Often, the students elaborated text information in the form of hypothetical scenarios or recollections of past experiences.

Most often, students elaborated the information in order to support their arguments. For example, Eleasha elaborated the argument of a text that described how horrible it is to displace Black culture and the history of a neighborhood by bringing her parents' experiences and introducing a hypothetical example of what might have happened in relation to those experiences.

Eleasha: [After reading Text 1 Sentence 9 – *Cultural displacement is also common. The closing of long-time neighborhood landmarks like historically Black churches or local restaurants can erase the history of a neighborhood.*] That's... it's nothing because I already knew all about this that it's horrible just thinking about it. Like some people, my parents, they work really hard they even do overtime to keep this house intact. Some people can't take days off and now they have to worry about the house and then rent and everything. How about the mortgage? you would never know.

Researcher: How is it relevant to you?

Eleasha: Because let's say someone has five houses like one area or two houses in different places like Hawaii or something, I don't know like... they have different places to go to, they can travel take days off and don't have to worry about anything leaving the rest of us who could take up their shifts. I've seen the people don't need to take off but like some of us work too hard (yeah) but some people they don't work for anything. They could just sit there all day and they still get paid off.

Students also elaborated the information to explain something different from—or similar to—a particular detail described in the text. Notably, some students portrayed their past experiences, in detail, to clarify what they were trying to tell the researcher. They sought to describe vivid accounts of their experiences in order to make their argument more reliable and valid. For example, Michelle took her firsthand account about neighborhoods around her to accept and agree with the main argument that the rapper was making in his video in Text 5.

Michelle: I think what he's saying is true, like since they don't have enough money to actually live, like in their suburban neighborhoods like Bellevue or …., they're pushed to the hood like probably like the Hill or like, McKee's rocks, because it's affordable for now.

Similarly, Tiara went beyond bringing the past event of her classroom talking about her friends' moving and elaborated the change of the neighborhood from the Black community to more white-dominant community in the Manchester area of Pittsburgh.

Tiara: I mean, um, so we were talking, it was in class before, and it was sort of just like this. And one of my friends said that one of their other friends from a different school had to move out of like down Manchester because there's a lot of gentrification happening and

like basically they're turning it into a mostly white community and force them to move out to more, I guess, um, more Black community.

Then, she addressed her opinion about this change of the community, saying "*They can both live there*," which reflects her beliefs about how to care about the people living in the same neighborhood: "*no one, like, feeling displaced or out of the ordinary.*"

> Tiara: They can both live there and that's what I was saying at the beginning, I like when people aren't displaced because no one likes feeling displaced or out of the ordinary and this gives them a place to live.

Throughout her reading, in order to make her statement explicit and clear, Tiara often elaborated the text information using hypothetical situations that began with "If…"

> Tiara: Like I think those 50,000 high-paying jobs anyone could get those, not just the rich people already. I think more of the people who are struggling financially should get those jobs because if they're struggling financially high paying jobs would get them back on their feet and get them living in a better house.

> Tiara: I don't like how people were put out of there... if they were living there before and then it was renovated and they raised the rent, I don't think that's okay because they were already paying a specific rent. You can't just change the rent without letting somebody know like that you're going to, at one point in time, they can't you bring it on like now the rent is this much and I get what this person is saying because it's like if they were paying, say the, it was like maybe two-bed room, maybe $1,000 or $1,500 maybe a month? not they're going up to $3000 and that's really, um kind of expensive to think of it for just a two-bed room.

Michelle also created a hypothetical scenario by imagining the situation of a family who may have been displaced from their home to make her argument: "*it's not fair.*"

> Michelle: But then it's not fair because it's like let's say if there was a family like a on the South Side, and it was just like a whole bunch of them and they all got along, but then they're getting pushed out in different directions because of gentrification. Yeah.

In summary, students used elaboration in different ways while reading, and it should be highlighted that elaboration is closely related to the activation of prior knowledge. It was necessary for students to activate their prior knowledge or past experiences to provide concrete details.

Making Inferences

During reading, the students made inferences about the meanings, assumptions, motives, perspectives, intents or biases hidden in the text, and they made inferences for different purposes and goals. Most notably, some students made inferences about the meanings of a word, sentence, or passage. They often began their inference-makings by saying, "*I guess. . .,*" directly indicating their efforts to read between lines.

For example, Dayanara consistently strove to employ a close reading of each paragraph to identify the main idea of each one. In particular, when she read online sources during Task 2, Dayanara made inferences about why the population of Black people in suburban neighborhoods is increasing; these guided her toward informed conjectures regarding the intentions or motivations of white people who are leaving the suburban areas. Ultimately, she arrived at a rather well-defined hypothesis: "*I guess white people don't feel comfortable.*"

> Dayanara: I guess white people don't feel comfortable and so many are leaving and more like more population of Black people in suburban neighborhoods are increasing while, uh, population in white neighborhoods are decreasing, I believe that they're probably moving somewhere else, like probably further away from the city since, uh, yes.

Eleasha also tried to infer the hidden meaning of the text by focusing on a specific phrase: "*what's the difference?*" She interpreted this as referencing the change between the past and the present, as well as the need for change in a current situation.

Eleasha: hmm…I'm guessing... cause this says, "what's the difference?" so I think they'll get their chance… it was the difference from back then and now? like something needs to change?

In addition to inferring the meaning of a certain word, sentence or passage, the students also made inferences as to why a particular situation in the text occurred or why people in the text acted or spoke in a certain way. For instance, when Celeste read the comments from Text 3, she inferred the reasons why Lily and Anthony mentioned certain things in their comments. From the beginning of her reading, she made informed assumptions about the authors' perspectives and feelings.

Celeste: I feel like Lily, she has her opinion on which... that more places will be gentrified, and Anthony, I feel like he is like hurt because he can relate back to where the area is.

She then she replied to Anthony's comment, saying, "*To Anthony's point of view, it is frustrating because I can look back to places such as Target and Home Depot.*" This shows that she agrees with what Anthony was saying and assumes that they feel the same way about gentrification in Pittsburgh—that is, hurt and frustrated.

After reading a tweet and watching a video (Text 5), Celeste also made an inference about why the rapper wrote his rap to emphasize the racial issues in gentrification.

Celeste: So, I think that he's saying that because African-Americans does the way we look... that landlords and people who want to destroy our homes, they're doing it because the color of our skin. So, it's just like they're breaking everything apart because of the way we look.

Celeste's understanding of the rap was based on her reasoning about racial problems suggested in the rap and other texts, noting that "*he's saying that because African-American does the way we look,*" and "*they're doing it because the color of our skin.*" When asked why she thought that way, Celeste responded that she had based her inference on her reading of the previous texts.

Researcher: You think it's the matter of skin color? Why do you think that?

Celeste: Um… just because from the past articles that kept saying something about racial and the way that we look. And the second was about African-Americans being less… have less income.

Lastly, the students made assumptions about the meanings hidden behind the pictures. Students made various inferences while reading the pictures from Text 1 and Text 2.
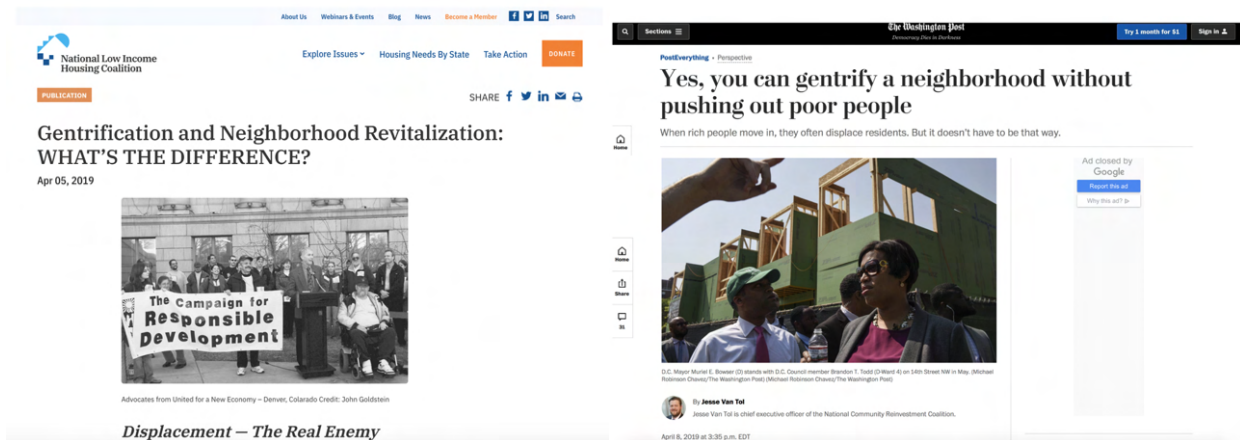
After looking at the picture in Text 1, Alicia assumed that the people in the picture might have a problem: "*It looks like they have like a problem with it so they might not have enough money for what they're trying to install in the neighborhood.*" Similarly, Jasmine read the picture in the Text 2 and focused on the Black woman's feeling; she then made assumptions about how the woman would have felt.

Jasmine: This one, it's kind of where she grew up or something. (Yeah.) or Kind of… I don't know. I'd be like heartbroken cause like if that's somewhere I grew up and you then just have to see it to be demolished for like an expensive apartment or a store.

In contrast to Alicia and Jasmine's focus on the people depicted in the images, Tiara focused on the building construction sites behind the people in the pictures. She reasoned assumptions about the relationship between the construction site and the people in the pictures,

inferring that homes being built in the background were intended to house the people who would otherwise be displaced from their neighborhood.

> Tiara: Almost like they're building houses in the picture, so maybe they're building houses so that the...um... so that, instead of displacing the people, other people can move into those houses? and they can pay more for those homes instead of the ones that other people are living in…yeah.

During Task 2—in which the students engaged in online reading inquiry—there were few inferences made about images. However, one student—Jasmine—made many inferences about the image during her online research; I will describe her reading practice in detail in a later chapter.

Making sense of text idea

As the students read the texts, they tried different approaches to understand the text idea and often expressed confusion about it. Students often said, "So basically. . ." or "Probably. . .," reflecting their efforts to figure out the meaning while talking about it simultaneously. In many instances, the students paused and repeated what they were saying as they explained their understanding of a text idea.

For instance, when Tiara finished reading the last paragraph of Text 1, she tried to make sense of the main idea of that paragraph, which explained the displacement of low-income people and the cultural displacement of the Black community: "*That's basically . . . what they're saying here is that . . . since Black people make less money, they want people who can pay their rent and for maybe more so they can get more money rather than getting less money. . .*"

In addition, I could also observe that reading some text passages out loud and then explaining their meaning by beginning with "*It probably means. . .*" was the most common approach that students took to comprehend a text. During Task 2, Alicia read the sentence out loud again to make sense of its main idea: "*So it says. . .[t]hat 'The gentrification process is typically*

108

the result of increasing attraction to an area by people with higher incomes spilling over from neighboring cities, towns, or neighborhood'. . .so it probably means, like, coming into the neighborhood to make more money." In addition to this example, Alicia often re-read other sentences and paragraphs out loud to better understand their meaning.

> Alicia: Oh, see negative. "*More tax means more investment in community infrastructure, including roads, parks and schools. Increased property taxes in poor urban neighborhoods. Overcrowded making people uncomfortable or impatient to get where they need to be.*"
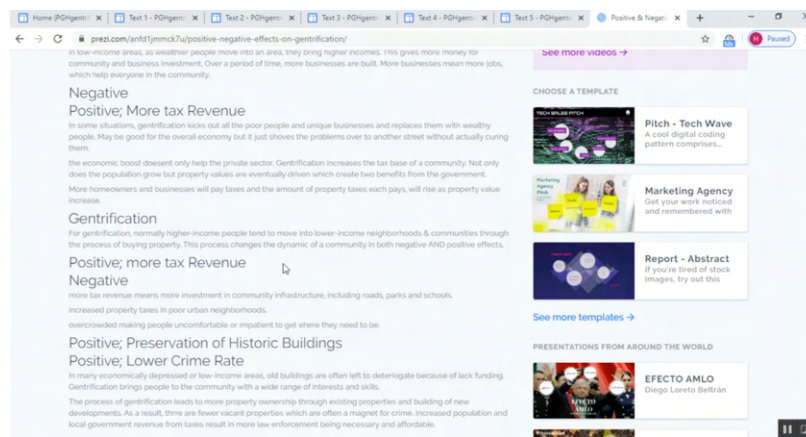
> Alicia: Because if you're moving, you might not feel comfortable in another neighborhood if you lived in a certain place for a while. So you might not feel comfortable as now or might not be able to move into another neighborhood because that could be a lot, cause then now you're paying...cause you still probably move to get all the furniture out and stuff, and that's a lot. Like moving costs are high like that. That's it.

As Alicia encountered information about the positive and negative aspects of gentrification, she read out loud the sentences that explained the negatives, after which she tried to think out loud about the way she understood those sentences. In addition to re-reading and reading out loud, some students paraphrased the sentences using their own words to make sense of their meanings. For example, Michelle and Celeste each read one sentence—the title and the definition, respectively—and both attempted to explain their understanding of the sentence.

> Michelle: [After reading the title of Text 2 – *Yes, you can gentrify a neighborhood without pushing out poor people]* Like there could be like both like sides could benefit from it to

109

where the one side, this side with less money didn't have to be pushed out and even if they are, it won't be as bad, so they can both share.

Celeste: [After reading the definition of gentrification from Google – *the process whereby the character of a poor urban area is changed by wealthier people moving in, improving housing, and attracting new businesses, typically displacing current inhabitants in the process*] It's like the lower, lower class... if the middle class isn't like what they're doing, they'll take where they're living or their business and build off of that. They make it more of what they like it.

Similarly, Serena watched the video of Jordan Montgomery's rapping (Text 5 Video) and sought to explain her interpretation of the rap as an argument criticizing unequal treatment of Black people.

Serena: [After watching the video from Text 5] He said that like.... Black... I mean like Blacks aren't getting treated fairly and that...he was probably talking about like how Blacks, how Blacks aren't treated fairly than everybody else...that's what I understand.

Some students persisted in their efforts to understand the meaning of a text, some of whom realized that, unfortunately, they could not understand the meaning well. In reaction, they expressed their confusion and frustration. For example, Serena expressed her struggles in understanding the text idea and described what she found helpful for a better understanding after reading Text 1: "*They could have added more details to this so that I can understand this little bit more.*"

Furthermore, it became clear that students had difficulty understanding longer and more complex texts, which they encountered during Task 2. For example, Dayanara explicitly communicated her difficulties to the researcher while reading longer articles during her online reading inquiry ("*This is basically the same. I don't know if I feel like reading this*"). At first, Dayanara did not know what to say when she was reading the article titled "New white flight and suburban displacement: Study looks beyond gentrification in the Pittsburgh region"

(). This article contained 1,311 words, of which 222 were complex words. The result of the Flesch–Kincaid readability of this article also showed that it has an average grade level of about 12. These results further indicate that it may have been difficult for Dayanara to read and understand the entire article. However, she did not give up and continued reading the article.

After one minute of reading the text out loud, the researcher noticed that Dayanara was reading without understanding, whereupon the researcher asked, "*What are you thinking?*" She responded immediately by saying "*I don't know…*" She then pointed out and read one sentence out loud that she could relate to and understand.
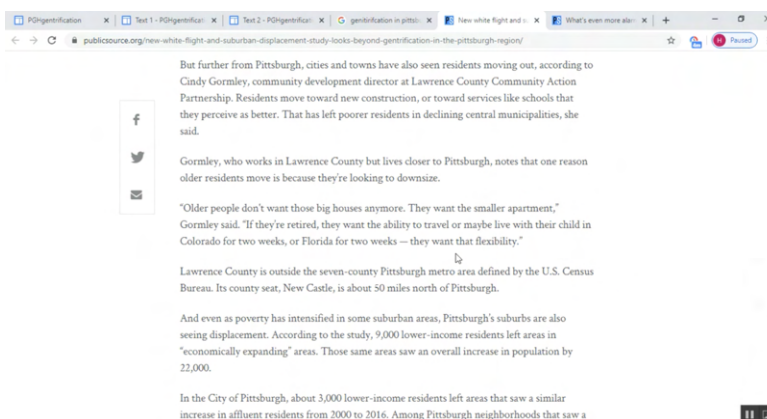
Dayanara: [During Task 2] Um, yeah, I don't know… Yeah. It says, "*even as poverty has intensified in some suburban areas, Pittsburgh's suburbs are also seeing displacement*," so… there's some, uh, there's also gentrification in Pittsburgh suburbs because of new people coming, newcomer with wealthier money richer are coming in to buy those houses in suburbs.

I also noticed that, as Dayanara did, the students made sense of the text during Task 2 not by understanding it as a whole—which might have been labeled as summarizing activities—but was rather more of a sentence-by-sentence understanding.

Questioning

In addition to comprehending and noticing text ideas, students also asked questions to increase their understanding and to elaborate text ideas. There were also few cases in which the students asked questions due to confusion. First, students asked themselves a comprehension checking question to pause and check the text idea again. Some questions that students asked themselves during reading were as follows: "*So cause they're not used to paying those higher rents?*" "*So they're trying to develop it to be more wealthier so that they are able to buy more things?*" "*So rich people will go to poor neighborhoods and try to make money there? And they want them to leave?*"

Even though some students only asked comprehension questions and moved on without trying to find answers to them, there were also students who brought questions that led their reading to a deeper understanding of a topic. They often added reasoning that included more information to elaborate their understanding. For example, Michelle asked a broader question related to the gentrification in Pittsburgh when she read the tweet about East Liberty's success in avoiding gentrification: "*why can't they [every neighborhood in Pittsburgh] all do that?*"

> Michelle: [After reading Text 4] Like East Liberty was able to like avoid gentrification, and like still reducing their crime rate…but other places in Pittsburgh are going through gentrification, so it's like, why can't they all do that?

After she read that Pittsburgh is one of the most gentrified cities and that different neighborhoods are going through gentrification, she raised a question asking why only East Liberty has been a success when other neighborhoods are still struggling because of gentrification. Then she also raised a concern by saying, "*I think I have to, like, think about it because I don't really know a lot about East Liberty's crime and, like, their investments.*" These questions and concerns

seemed to help students understand the meaning of the main idea, as they allowed them to take time to think back about their reading and understanding.

Moreover, Serena asked a fundamental question about the issue of gentrification that is related to the racial tension. "*What's the point of moving . . . what was the point of dividing Blacks and whites?*" She asked this question after reading several web sources about racial issues in gentrification with a search term: "*what happens with racial and gentrification*" She also raised a question about the low-income issues: "*So it's basically saying that us, poor people, are not wanted and that um . . . but 'neighbor bring in the middle class people' . . . that . . . they[middle class people] will be more wanted?*"
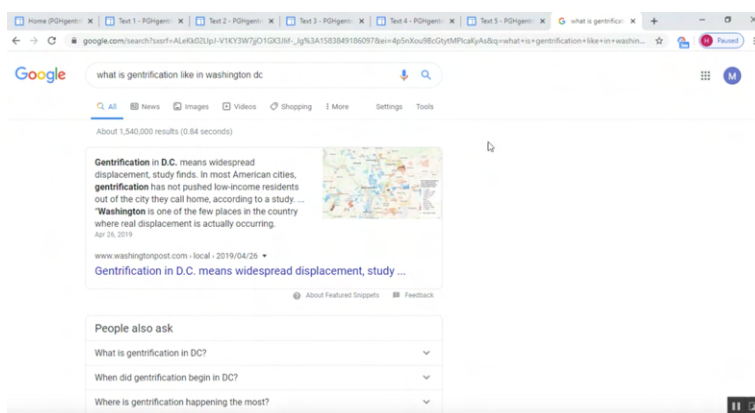
Furthermore, students raised questions due to their confusion. These questions did not actually help resolve students' confusion; rather, they only showed students' efforts to find a way to clarify their understanding. When students read texts that had a perspective opposite to that of the previous text, they often expressed their confusion, as Serena did. Serena raised a question after reading the title and the first paragraph of Text 2: "*So it's not a bad thing? Gentrification is not a bad thing?*" This is because she had just read Text 1, which had an opposite point of view towards gentrification compared to Text 2, and explained gentrification as "*much needed*

investment." Finally, students asked a series of questions to express absurd and nonsensical feelings when they encountered a text that made an argument that did not make sense to them.

Celeste: [After reading Text 4] I'm a little confused. So basically, he's saying that East Liberty has been avoided? when it was already like, destroyed and rebuilt...to reduce crime and improving investment...He's basically saying that by destroying innocent things that is building up other things... and things like crime and money?

In summary, I found that the students raised questions with different reasons that may have enriched their understanding, but they did not actually make efforts to find answers to their own questions. I also found the potential of online searching to provide at-the-moment opportunities for students to look for answers to their questions by searching and reading multiple sources.

Relating (making connections)

As the students read different texts, they made connections or related themselves to texts using various sources of self-related knowledge, such as family, peer cultures, lifestyles, generational trends and attitudes. In addition, they expressed connection to social entities, such as a racial, cultural, and generational group of people and the communities.

First, students associated themselves with the situations described in the text by bringing different examples, such as their families' and classmates' experiences, as well as their own experiences. For example, Eleasha often brought her family's experiences to make connections to the text she was reading. After she read Text 1, she said "*Now that new companies and everything are coming in, it's taking over a whole bunch of homes and all the people who are getting hired are mostly white people, which leaves all the rest of us. So getting little incomes and not having*

114

better houses." And then she added her parents' story to make connections to this sad truth of low-income people who have to leave

> Eleasha: [After reading Text 1] It's[gentrification] nothing because I already knew all about this that it's horrible just thinking about it. <u>Like some people, my parents, they work really hard they even do overtime to keep this house intact</u>. Some people can't take days off and now they have to worry about the house and then rent and everything. How about the mortgage? you would never know.

Eleasha also associated the issue of gentrification with her family's situation, which she thought could be considered a part of gentrification because even if they are not poor, they still have some struggles.

> Eleasha: [After reading the title of Text 2] Like you could still, you could still like give them low incomes and everything and still make them struggle even if they're still poor. Like my family, we're not considered to be poor, we have like a good house but like, in my opinion, we are we do have gentrification in certain things. Like my parents should get way more than what they get now, cause they work so hard.

Eleasha also associated the issue of gentrification with her family's situation, which she thought could be considered a part of gentrification because even if they are not poor, they still have some struggles. Eleasha also associated herself with the issue of gentrification in Pittsburgh in relation to Black people by saying, "*This is my city. For all I know, they can tear down on our home and make it more expensive, but still have it look the same*" and "*It's . . . it's basically saying what a lot of Black people are going through and I really need to know what's going on around me*."

In addition to bringing relatable examples, students also associated themselves with the people or the groups appeared in text. Serena first said "we" when she wanted to point out "Black people" (she later corrected herself) as she criticizes the situation that some people take this problem as a joke.

Serena: gentrification is a couple of things and like some people take it as a joke. And like gentrification is a good topic and that when we had to move out, when the Black people had to move out, they move the white people in, and that um... oh, that... "nearly 20% of neighbors with lower incomes and there was 9% percent during the 1990s."

There were also incidents of making connections to the low-income people when they read about unjust issues happening to them or hardships of their economic situations. Serena related herself and some of her classmates to the displacement of low-income people, and she stated that it is relevant to her and her friends because they do not have a lot of money and some of their parents have too many kids.

Serena: It's relevant to me because, I mean not to me, but like to everybody because right I'd be saying like about some of my classmates like they're not like have a lot of money and stuff like that so they are going to be closer ones because of like how their parent is and like just like some of their parents don't get money and some of their parents have too many kids and all that.

Taken together, I found that students often related themselves to the text more when the topic happens to be related to their family, experiences, social entities, and so forth. In particular, the way they related themselves to texts was to bring similar experiences as suggested in text and create allies with the groups and people in the text.

4.1.1.2.2 Multiple-text comprehension

The participating students engaged not only in reading a single text, but also in multiple-text comprehension. The students compared and contrasted text ideas or constructed an overarching statement by integrating text ideas across different paragraphs and information units. The most frequent multiple-text comprehension activities were when the students compared or contrasted the facts or information among texts.

Celeste: This [article] is like what other article said.

Celeste: It says the same here cause Northview changed to most of Black, African American neighborhood.

Dayanara: Well, it's kinda… I feel like it's like kind of like the same, well, the first, like the last one.

The following are examples of when students compared similar information presented in different texts.

Michelle: So, like when the other like site, it said that gentrification was bad, but on this site, it's saying it doesn't have to be bad.

Michelle: So, like when the other like site, it said that gentrification was bad, but on this site, it's saying it doesn't have to be bad.

Dayanara: Um, well the first one's saying that, um, like our people of the community should come together and research about rents that are free. So that may be like, it can help people who can't afford, can't afford the housing. Um, this one's basically saying that, um, you have to like force like, uh, or demand affordable housing, what she means. So, Hey, if I'm leaving you guys gotta help me or I gotta, you gotta find something for me that's cheaper or something I can actually afford for me and my family

Furthermore, there were instances when student contrasted the facts or pieces of information presented in texts, and they also engaged in value-added intertextual linking by comparing and contrasting two texts to make a judgment as to which they preferred. Jasmine said, "*I feel like I like this article [Text 2] better than the first one [Text 1]*." Other students said they

liked Text 2 better than Text 1, as Jasmine did, because they preferred the idea of considering gentrification as development without pushing out people over considering it as displacement. For example, Serena explicitly said, "*I like this one [Text 2] better than the last one [Text 1], sort of?*" as she read Text 2, adding, "*because it shows that gentrification can be, like . . . it can be good because you don't have to move the other people out.*" Likewise, Alicia exhibited her inter-text comparison by saying, "*from what I read on the other thing*" when she found contrasting facts between the mayor's tweet and other texts that she read. She said, "*So . . . that's good because from what I read on the other thing, basically, like, it was real bad and they are just kicking people out because they couldn't afford it and stuff.*"

It was much rarer for students to make connections between an in-text image and the text. Only one student, Jasmine, mentioned the relationship between the in-text image and the text when she read the sentences about displacing ordinary working people, the elderly, and people with disabilities from their homes in the first text of Task 1.

When she read the picture first, she mentioned different people in it and inferred them to be anti-displacement activists.

Jasmine: [After reading the picture from Text 1] I like the picture. Cause like... Like there's different people in it. Maybe anti-displacement activists.

118

Then, when she read the phrase, " . . . *displaced ordinary working people, the elderly, and people with disabilities from their homes*," she immediately found a relationship between the people in the picture and people described in the text.

> Jasmine: "*The Bay Area has grown radically rich but in doing so has displaced ordinary working people, the elderly, and people with disabilities from their homes. Ethnicity is also related to this process of gentrification. Most of the wealthy and well-paid people are white while those being displaced are people of color, who typically have less income.*" So this [sentence], like, relates to the picture more.

Jasmine did not elaborate further about the picture and the text, but the connection she made shows that she paid attention to the picture and the text and considered how they were relevant to each other while reading them. Aside from Jasmine, no other students made connections between images and text during Tasks 1 and 2, only reading an image or a text separately. In conclusion, it is noteworthy that students engaged mostly in multiple-text comprehension between and/or across written texts, which consisted of rather basic and simple comparisons or contradictions of facts or pieces of information.

4.1.1.3 Disposition

Students' motivation and interest in critical digital literacy tasks drove their reading, and they expressed their engagement and interests in reading or monitoring themselves to achieve a reading goal. Some students monitored their mental states, thinking processes, progress on meaning-making and understanding, and resource uses. This metacognitive process indicates readers' tentativeness in decision-making.

> Dayanara: I think I'm goanna just skim through this.

> Dayanara: Can I look back at the question? Yeah. "What might you do if your neighborhood or one close to yours was facing gentrification?"

Eleasha: "yes, you can gentrify your neighborhood without pushing out poor people." (laughing) I'm sorry I'm trying to grasp onto that.

Eleasha: So basically... Oh wait! I understand now.

Jasmine: It made me like think about it more. Like it adds more to it.

Celeste: I was reading this one over again. About East Liberty and things that they demolished and that they have bigger things.

Students also identified their processing difficulties, uncertainties of meaning, and any challenges in the sense-making of text. Serena and Dayanara both expressed their frustration at difficulties encountered in understanding texts.

Serena: They could have added more details to this so that I can understand this little bit more.

Dayanara: This is basically the same. I don't know if I feel like reading this. Oh, this is the same thing.

Students also explicitly expressed their emotional status and engagement level. For example, Celeste said, "*That interests me,*" when she read about Pittsburgh in Text 3. She then added, "*The first line, those places that have been demolished, too.*"

It could not be directly examined or expressed through students' utterances whether they were highly motivated to engage in tasks and monitor themselves, but it could be assumed that they engaged well on the tasks by monitoring their reading goals, because none of students became distracted during the tasks and none misunderstood or failed to achieve the tasks' goals.

4.1.2 Sociocultural Resources

4.1.2.1 Knowledge

As the students engaged in the tasks, they drew upon various personal experiences, such as daily events, classroom activities, and family events. In particular, there were several pieces of evidence and examples of students' use of their funds of knowledge that showed their personal background knowledge, accumulated life experiences, skills and knowledge used to navigate various social contexts, as well as world views structured and influenced by broader historical and political contexts.

Funds of knowledge

Personal experiences. To begin, students brought their personal experiences accumulated through their daily lives during reading. Those experiences were somewhat broad, as exemplified by Michelle's illustration of her neighborhood: "*Well, for me, I used to live in like a neighborhood where I would go outside and there'd be, like, a lot of people that were just, like, my friends. Like, after school I'd go outside and play and then, like, we started to move away, so now it's like no one's really there.*"

Eleasha also described how one group of people traveled around without working hard while all the other people, whom she called "us," cannot take days off and work too hard, which was based on her knowledge that may have been accumulated through her experience with her family.

> Eleasha: [After reading Text 1 Sentence 9: *Cultural displacement is also common. The closing of long-time neighborhood landmarks like historically Black churches or local restaurants can erase the history of a neighborhood.*] Because let's say someone has five houses like one area or two houses in different places like Hawaii or something, I don't

know like... they have different places to go to, they can travel take days off and don't have to worry about anything leaving the rest of us who could take up their shifts. I've seen the people don't need to take day off but like some of us work too hard (yeah) but some people they don't work for anything. They could just sit there all day and they still get paid off.

In addition, I found that different categories of funds of knowledge, such as economics, geography, community-related and broader cultural group, have been activated and used.

Economics-related knowledge. Above all, economics-related funds of knowledge were frequently used; these ranged from students' families' financial situations to the housing and employment systems. One student, Serena, mentioned the general financial situations of her classmates' families—namely, that they have low incomes and too many children—by saying, "*It's relevant to me because—I mean, not to me, but, like, to everybody—because, right, I'd be saying, like, about some of my classmates, like, they're not, like, have a lot of money and stuff like that, so they are going to be closer ones because of, like, how their parent is and, like, just, like, some of their parents don't get money and some of their parents have too many kids and all that.*"

Some students also detailed the information about their parents' employment history and status to understand the process and the outcomes of gentrification. For example, Eleasha brought her mother's past experience working as a welder—an experience that could have been seen as workplace discrimination towards Black people, especially Black women, after she finished reading Text 1.

Eleasha: I just... like one thing that gets me mad like that really that really open me up might open up my eyes, kind of, it's like, they really don't need welders anymore, so you know they're firing them and everything. My mom was a welder and she's the only Black female there and out of all the people the rest were all men, all and, there barely any Black man like two Black men and the rest were all white men. She was the only one out of all of them who got fired. It was like 2018.

When Eleasha read about the process of gentrification happening in Pittsburgh in Text 3, "*Change happened again in the early 2000s when major commercial developments brought life*

back into a neighborhood now home to retailers like Whole Foods, Target, and Home Depot. In 2010, Google made a big impact on this neighborhood, too. Once America's steel town, the city is now a hub for Google, Amazon, and Uber," she shared her mother, aunt, and grandmother's experiences working for Amazon.

> Eleasha: I think that like Amazon, it really is very good and popular like, there are a lot of people rely on, so a lot of people can get their money working there. For a short period of time, my mom and my grandma worked at Amazon. Just for short periods of time. And my aunt, too. They had like short, they only worked for like four hours, so they didn't get much. They hired and let go of a lot of people. Mm-hmm so that job didn't last long.

Even though her family did not have a pleasant experience with Amazon and other companies that fostered discriminating work environments and unfair remuneration practices, she also acknowledged the importance of big companies like Amazon in an underdeveloped city, as they can provide a lot of job opportunities to more people there. Tiara made a similar point, stating that more high-paying jobs should be available to people who are struggling financially, and that those jobs should not be given to the rich.

> Eleasha: I was going to say that Amazon can give a lot of people a lot of jobs, and it deserves to be in a city where there aren't a lot of jobs for people, so that would definitely help them with their incomes in their houses.

> Tiara: Like I think those 50,000 high-paying jobs anyone could get those, not just the rich people already. I think more of the people who are struggling financially should get those jobs because if they're struggling financially high paying jobs would get them back on their feet and get them living in a better house.

As Tiara showed, students had clear personally and culturally accumulated knowledge and points of view regarding economic disparity and inequality in society. When Alicia was asked what she wanted to know more about as she began her online search, she said, "*I wanna know . . . why rich people can't just stand in the areas because they're already living . . . cause . . .*" after which she elaborated as follows.

123

Alicia: Well…if I were rich, I won't want to live in a poor area I want to live in an area where everything is rich cuz I don't want my house being only the biggest house then you go outside you saw rats and bugs I want to live in a whole area that is... I want to live in an area that is wealthy. Not like... or sometimes… it could be mixed, but it's kind of weird. They have like a part where it's all rich in and you look else, then what you're gonna see is like a whole bunch of poor houses, I don't know how our neighborhoods are, but like you probably want to live on the street or like a block where people around you are making as much money if not more or as the same amount, so yeah so all can live on the nice block, cuz you don't want this one, one nice house and the rest are dirty and stuff… But I think some people can still share neighborhoods, too, because the thing works even if it's.. poor people not on that block, but live on the next block, or a couple blocks over so it can be like mixed and not just specifically to one group.

Alicia expressed her doubt about why rich people would want to move into the poorer neighborhoods, and she brought her knowledge about what poor neighborhoods would look like by thinking about her neighborhoods, streets, and houses. This shows that her understanding of gentrification was mainly focused on the wealthier people moving to the poorer neighborhood, and she activated her personal background knowledge of what it is like to live in the poorer neighborhood. She also brought more personal background knowledge about how the neighborhood around her house has been developed by having a new Family Dollar store, and how rent prices in those areas may have changed.

Alicia: I live in the South Side. And there's like... I'm not gonna say it's not poor, but it's also not like the richest area ever, so like I heard that usually in poor neighborhoods, they'll put like Family Dollars and stuff so the rent could get higher, which I didn't know that. They had just one opened up the street, but I don't pay off the rent, of course, my mom does. I don't really know if it went up or not, but it's a good neighborhood. and usually like all the house, I don't know what they look like inside but a house on the outside is like a good size. It's not cheap or...

Alicia also brought her family's recent experience about buying properties and paying rent when talking about different neighborhoods in Pittsburgh undergoing gentrification.

Alicia: Because they're poor… We're trying to invest in that whole thing and get new buildings like on the Hill and stuff. We had seen like… My mom was trying to invest in

properties, and we saw like these buildings on a Hill. My mom said that she wants to get them remodeled because there are people still living there and like paying their rent and all that stuff, because there's no point of having a house there just sitting there, and there's dogs, animals and stuff… So…if you could actually do something about it, then you should be able to…

She talked about the Hill as an example and what she saw around the Hill District area. She suggested the idea of having a house remodeled in a poorer neighborhood to actually make differences in that neighborhood because people and their pets are still living there.

Geographical knowledge. Students also had geographical knowledge. In this study, students used their geographical knowledge about neighborhoods in Pittsburgh. Celeste found Text 3 relevant to her, saying "*It's relevant to me because I shop at the places that they said, which is Target and Home Depot,*" and she wrote a comment to reply to one of the comments: "*To Anthony's point of view, it is frustrating because I can look back to places such as Target and Home Depot.*" Likewise, students often described the places and the Pittsburgh neighborhoods that they have visited or lived in.

Michelle: Yeah. Actually, like within these neighborhoods, there are like North side, like part of North side. Cause I live close to Lawrenceville. It's like 10 minutes away.

Michelle: I think what he's saying is true, like since they don't have enough money to actually live, like in their suburban neighborhoods like Bellevue, they're pushed to the hood like probably like the Hill or like, McKee's rocks, because it's affordable for now, but then it's not fair because it's like say if there was a family like a on the South Side and it was just like a whole bunch of them and they all got along, but then they're getting pushed out in different directions because of gentrification. Yeah.

Eleasha: That's where I've seen of this. It was like near Downtown, it was on the Hill District. They have a lot of houses like this and then Bloomfield, and I see them all the time. East Liberty.

Eleasha: McKee's Rocks. There are some places, some houses like that, that looks like apartments and what's it called, on Broadway, it's like, it's like the main street around here that a lot of people would go on, it seems deserted now that Corona is here.

Tiara: It says, "*Those areas include Lawrenceville Bloomfield Garfield Polish Hill, Downtown, and sections of Northside, and Mt.Washington*". I know all of them and I see most of them are, or were, mostly Black community. I know about Mt. Washington, I think it's a mixed community but I know for sure all the others are mostly Black communities.

Community-related knowledge. Reading about text relevant to Pittsburgh has impacted not only students' activation of personal background knowledge about the neighborhoods in Pittsburgh; other episodes also demonstrated students' activation of community-related knowledge in relation to people, relationships, neighbors, and neighborhoods of theirs.

For example, some students activated their personal background knowledge about the neighborhoods in Pittsburgh; the following examples show the varied experiences and knowledge of different students. For one, after reading Text 3, which explained gentrification in Pittsburgh with the specific illustrations of East Liberty area, students activated what they have heard from people around them and what they have witnessed about East Liberty. Eleasha briefly described the big companies she has seen around: *"'hub for Uber' . . . it really is. I saw a big Uber—I see Uber companies near me, I saw, uh, there's a big Amazon near me, and if I go on the highway going towards the South Side, you can see Google, there's Google company*." This shows how these changes in Pittsburgh with the arrival of big tech companies have also been closely related to students' daily lives. In addition, Jasmine described what she has seen around this neighborhood in detail. She said that she has been there (East Liberty) and has seen the changes.

Jasmine: Okay. So, I understand this one cause I've been to East Liberty and I've seen the changes that go through. (You saw that?) Yes. Not the, like not the ones like 30 years ago, but like and like, um, a lot of like businesses are going out and they're building more apartments at the expense of the ones that look like new. I understand. I understand as well. (Yeah.) Cause I've been there and seen.

126

Jasmine also showed a balanced perspective—or rather, mixed feelings—towards this change in East Liberty, stating that although demolition was not a good idea, redevelopment was also much needed in that area.

Researcher: Yeah. So how do you feel about this change?

Jasmine: Um, I feel like it was a good and bad change cause like… again, like, like stuff getting demolished wasn't so good, but it's also getting like rebuilt into something that's needed.

Furthermore, Tiara talked about what she has heard from people about the cultural community in East Liberty: "*I've heard that East Liberty was a mostly Black community at one point in time, and now if you go down the streets you see a lot of . . . it's different cultures around there.*"

Tiara: I don't really know much about East Liberty, but I've heard people talking how it was getting gentrified like soon, how they think it is, but I've heard that East Liberty was a mostly Black community at one point in time, and now if you go down the streets you see a lot of... it's different cultures around there.

Even though Text 3 did not explicitly mention the racial or cultural issues in the East Liberty area, Tiara brought her personal knowledge, namely that East Liberty had changed from mostly Black community to a more mixed community. Other students also brought their experiences of seeing East Liberty: "*Because they're still, like, they're still making new buildings and companies are coming in still pushing other people out. So I don't know if that's really true because it's still happening.*"

In addition, Serena illustrated the shooting of Antwon Rose Jr., which happened in East Pittsburgh, and a similar tragedy that happened to another Black teenager, which made her research the relationships between race and gentrification.

Researcher: What do you want to know more?

Serena: Wait…don't that mean still like race and all that? I mean like… What...But you know Antwon Rose? So like I guess he was doing something bad or whatever, and the cop, I think he don't know how to work with kids, and so the boy, he was fleeing or whatever, and he ran out of the car because he was scared! And the cop shot him on the back, and then he's dead right there. Then like the boy, what was his name? Trayvon Martin. Um he was going to the store, came out to the store, he had skittles and all that, and he had a Black hood on him, and that, what did you call him? People... Neighborhood watchers? and he thought he was somebody else so he shot him and he died.

Serena: [Search "what happens with the race and gentrification"]

Her initial question, "*Wait . . . don't that mean still, like, race and all that?*" suggests that she is much interested in racial problems in society, and her ways of describing two cases of Black teenagers demonstrates her understanding and points of view towards those tragedies: she emphasized, "*He was scared!*" This suggests that there are many social and racial problems happening around the students that they can relate to and that impact their approaches towards other social issues.

Broad cultural knowledge. Moreover, the students used various sources of cultural knowledge concerning race, gender, religious knowledge, age, and so forth. In particular, students possessed accumulated knowledge or assets within their families and communities as people of color, minatory, and Black. Students' responses to texts during two tasks showed their perceptions about themselves and Black people in this society: "*Especially the Blacks, we have a lot of racism pointed towards us and now there's still racism pointed towards us, but they are showed in different ways. Like, they're trying to cover it, but it's still showed and they're taking away our houses*"; "*So Black, well Black might not have a lot of . . . as much money as white people and other people in the neighborhood. So it's saying that Pittsburgh and the gentrification of Pittsburgh is kind of missing that Black culture and who they are*"; "*So I think that he's saying that because African-Americans does the way we look . . . that landlords and people who want to*

128

destroy our homes, they're doing it because the color of our skin. So it's just, like, they're breaking

everything apart because of the way we look."

I found that they consider themselves—Black youths—to be mistreated in society because

of the way they look and because of the color of their skin. They also mentioned that they consider

Blacks to be an ethnic group that is typically underprivileged and impoverished. Additionally,

Serena brought her personal background knowledge about social issues such as protests, shootings,

and President Donald Trump after reading the mayor's tweet (Text 4). She wrote a comment to

the tweet: "*I disagree with you, because violence is never gonna stop, no matter what anyone does*."

When she was asked why she thinks it will never stop, she gave the following answer.

> Serena: Because... like... well... we tried to protest, I mean I'm not gonna say that 'we', but like people tried to protest and stuff like that and like when you wake up the next day you hear that somebody got a shot so that protest never worked it. It's like Donald Trump, he is not trying to help us, so we have to figure out on our own. And then the mayor, somewhat he's trying to help us, but he can't like do nothing like that because like he's not the head? Donald Trump is?

She responded specifically to the phrase "*reducing crime,*" which she thinks will never

stop. She activated her knowledge about violence and protest issues and brought her perspective

of President Donald Trump. She claimed, "*He is not trying to help us, so we have to figure out on*

our own," and also activated her knowledge about the government, stating that the mayor cannot

do anything when the head of the country—the president—does not take action.

Beliefs and worldviews

In addition to culturally and socially shaped knowledge, the students activated their

personal sets of worldviews or beliefs—ways of seeing things—which include beliefs about

human beings, beliefs and opinions about societies, value judgments about what is worthwhile or important, and beliefs about how the world is organized and how it works.

First, I found that students' reading and writing often derived from their fundamental worldview, which includes attitudes, values, stories and expectations about the world around them. For example, Celeste read Text 3 about Pittsburgh's neighborhoods that are undergoing gentrification and argued "*Sometimes better things aren't better.*" In particular, regarding the demolition that happened in East Liberty, she pointed out that even when something does not work out well, we should not break it apart.

> Celeste: So basically, East Liberty, which was the main place that was destroyed so that they could make better things, but sometimes better things aren't better. Because sometimes people don't like the things that they built, and then they destroy something that is perfectly fine cause something that doesn't work out is there. I feel... if something's not a bad thing that you shouldn't break it apart.
>
> Michelle: Well, I think it's good to be more diverse cause it's like good to see different types of people and like where they come from, but sometimes it's not always that good, cause they're like, you don't really know them, so it's kind of like hard to open up or like talk to them. And some people might look at you differently cause like let's say you've moved out when you're in this new neighborhood and it's like you're acting a way that you thought was normal before but then these people were coming in just like looking at you, like a weird person.

Additionally, students presented their beliefs about human beings and societies with the argument that "*Education should be available for all people. It's important for everybody to receive the same education*" when they read the last paragraph of Text 2: "*Cultural and physical displacement only occurs when the people who live in booming neighborhoods are pushed aside for wealthier newcomers. The benefits of urban living, new jobs, cultural events, and great schools shouldn't just be available to the rich. It can be possible to have sustainable investment and economic growth for both.*"

Dayanara: Um, so they say basically people, they're pushing people out of their neighborhoods for people who have like, who are richer, whoever wealthier. And they, they said that, um, it shouldn't like better schools and better neighborhoods shouldn't just be for rich people. They should be for all people. And I, I agree with that because, um, it's important for everybody to receive the same education, high level education, people to receive the same, um, the same equalness, Things shouldn't be unfair like that.

Alicia: It said that schools should just be available to the rich say they should be able to be affordable for everybody and not just a certain group of people. I think that it should be available some more than a specific group. Cause I don't think it's fair that people are being able to push off that they can't afford it so I think it should be affordable to many people and not just a specific group. So like even some people are richer, they could live in like maybe further down a neighborhood where our poor could live in like those, not as nice houses but they can still live in that neighborhood because everything's affordable.

The last paragraph of Text 2 describes several benefits of gentrification, including economic growth, cultural development, urban living, and high-quality education. However, students mostly focused on the phrase "*great schools shouldn't just be available to the rich,*" because this is the most relatable benefit that students have a connection with. In particular, Dayanara argued the importance of "better schools, same education, high-level education" by emphasizing the "equalness."

Another of the students' shared beliefs was that "people should be treated equally regardless of their income" and "we should know some people aren't as fortunate as others."

Eleasha: I feel like it's true like you don't have to kick someone out their home, just to be in the low-income system makes them struggle.

Alicia: So... that's good because from what I read on other thing basically like it was real bad and they are just kicking people out because they couldn't afford and stuff. I think that it should be equal and like the same so if you can't afford something then they have buildings that are cheaper than others, so even if they are not as nice or like the best building or apartment in a neighborhood, I think that there should still be houses so more people could afford it and they don't have to move out cause moving can be a lot, moving all of the furniture and stuff. So I think that it'll be easier if they could lower down a price and keep it even amount and affordable for some people who can't afford it. And then if people want big houses and they will have other big houses down in that neighborhood, too.

131

Michelle: I think that's [not push people out, but still bring money in] easier than like just pushing the poor people out and then bringing more money into wealthier people because at the end of the day everyone still needs to make money cause you know you never know they have families or not.

Michelle: I don't think it's right. Like it's just…unfair to those people.

Moreover, Dayanara talked about her beliefs, stating "*One should not judge a book by its cover*" as she read the online source, "New white flight and suburban displacement: Study looks beyond gentrification in the Pittsburgh region" (https://www.publicsource.org/new-white-flight-and-suburban-displacement-study-looks-beyond-gentrification-in-the-pittsburgh-region/). She argued that we should not judge people based on how much money they make or where they live.

Dayanara: Um, I feel that, um, just because they can't afford to live in a better community and better for themselves, it shouldn't like judge them. It shouldn't like just because of how much they make or how much money they get from working. I mean, people actually could, like you don't see what people, you don't go work, you don't go through what people, what you see in real life. So, people could be like working their butt off and doing things just to live in a house. Like people don't, a lot of people don't have a home to live in. So I think of like one shouldn't judge a book by its cover and although that, um, they're not making like a whole lot of money, I mean at least they have a home.

While many students criticized about unfairness of society and providing hope for the just society, Dayanara was the only student who argued for action: "*Keep your guard up, you should demand… instead of just sitting there and not doing anything at all.*"

Dayanara: I feel like, yeah, I mean it's like… Keep your guard up like you should, you should like demand. If you can't afford something and do something about it. I mean like there's, there's not like, you would, you should rather like try to get help instead of just sitting there and not doing anything at all.

Dayanara's unique way of dealing with societal problems was different from other teenagers, and she strongly believed that people should take responsibilities and "*do something about it*" or "*try to get help*" when they encounter the problems.

Another belief that impacted students' thinking and reading was their belief about how the government works in the United States. When asked to write a comment on the website, Eleasha claimed about her beliefs that the government does not care about what people have to say to them.

> Eleasha: So, the government doesn't care about comments. They don't care about people's opinions until it comes... They don't even care when it comes to people. The president is just like the government's puppet. (why do you think so?) It's like, it's the government's orders, but they're having the president say it all and do it all for them.

> Eleasha: Their opinions matter. Their opinions do matter, to me. But to the government, probably not. Most likely not. All that out of the billion people on this earth, they can't find another one to care about. All they care about right now, they don't have to care about Trumps' opinion.

Also, she said she believes that the president is a government's puppet, and she was very skeptical about the government and the president, "*All that out of the billion people on this earth, they can't find another one to care about.*" Eleasha's strong statements about the government and how people's opinions are ignored by politicians reflect her lowered expectations for them as a US citizen under the Trump presidency. Despite the fact that Eleasha considered that the government and politicians do not listen to people's opinions, she said the opinions of all people do matter to her. Likewise, Alicia articulated her beliefs about when to and how to make an argument or express one's opinion.

> Alicia: So like I can't really talk about place that I've never been. I can't really notice so I can't really pick a side saying 'oh boy this is the most because and that is the least' cuz you have to do a whole bunch of research probably, actually go to a poor neighborhood and see what's actually going on like get to experience it.

She argued that people should actually experience something if they want to argue or believe in the argument, as that they should also research it. These results show that even middle school students have well-established beliefs of their own that can be used in critical thinking and reading of texts as well as in developing their opinions and perspectives towards texts.

133

Emotion

In addition to arguments or opinions, students also expressed a range of emotional states in response to certain problems and issues, people and communities, and conditions and contexts. They also expressed their understandings of others' feelings, situations, circumstances, problems and issues.

The predominant example of emoting was when the students expressed feelings about the situation described in the text, such as amusement, confusion, hatred, sadness, and sympathy. In particular, all students expressed some degree of sadness towards the issue of gentrification, such as "*I think it's unfair*," "*That's kind of crazy*," and "*I'm shocked*." Additionally, Michelle contrasted her past experiences of having a lot of people around her and having no one in her neighborhood as an expression of her feelings of sadness.

> Michelle: Well for me, I used to live in like a neighborhood where I would go outside and there'd be like a lot of people that were just like my friends. Like after school I'd go outside and play and then like we started to move away, so now it's like no one's really there. That's really sad.

Another student shared her mixed emotions, which included confusion, frustration, and anger, especially when the mayor argued something that made her doubt its reliability and truthfulness in Text 4.

> Eleasha: [After reading Text 3] I don't know... like right now I just have a whole bunch of mixed emotions. (mm-hmm what kind of emotions?) I don't know whether to believe it... or to be angry, because he said that. I'm very confused.

Jasmine also voiced her various feelings throughout reading. When Jasmine read Text 1, she showed her frustration and sadness by saying, "*I feel like it's kinda messed up*." This was her honest reaction to the main issues about displacement, which targeted poor neighborhoods and the

Black community. Moreover, she conveyed different emotions that arose in her mind while conducting online search.
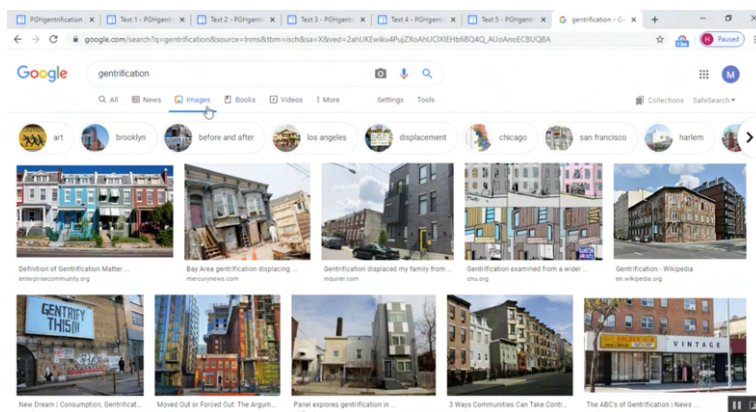
Jasmine: Like it's like, it's kinda creepy. Kind of? Like how they're like displacing everyone and building like a house that's expensive.

Jasmine: It's like, it's like interesting cause they have all of her family in the back maybe, and they highlighted "nice", like "Nice". He had to move.

Jasmine: It's interesting and I like how it was like illustrated it.

These reactions show that images can provoke a variety of feelings in students as they read those images. In addition to expressing feelings about the situations presented in the text, the students also empathized with the people who appeared in the text. For example, Dayanara empathized with Black people and the Black community in Pittsburgh, who were depicted as victims of gentrification in the video in Text 5.

Dayanara: [After watching the video in Text 5] I mean, um, and if I were to live there or if my family were, they lived there, and we didn't have enough money. If we didn't have enough money to actually afford to live in one of the homes there, rent, I mean like what would happen? Like, I mean, then that's like no home. If we can't find any other home, like what would we do? And it's not even our fault that we have to do that. And I have like so, there's like projects behind my house as well. So, um, like, um, they're rebuilding like the, uh, buildings and the projects. Um, and so there, what they did was gentrification. They're pushing people out for like a couple years or so until they can actually afford to live in the new and rent the new buildings. And that's not fair.

She did not explicitly state how she felt, but, based on her tone throughout and the argument at the end ("*That's not fair*"), it can be assumed that she was feeling mistreated and neglected, just as the people in the text might have felt. It was also found that she empathized by indicating herself and the people in the text as "we," as opposed to just representing them as "they." Her tone of voice while talking about displacement ("*If we can't find any other home, like, what would we do? And it's not even our fault that we have to do that.*") was filled with frustration and unhappiness.

Furthermore, Eleasha talked about the helplessness and vulnerability that she feels because of her age.

> Eleasha: It's basically saying what a lot of Black people are going through and I really need to know what's going on around me. I mean... I really can't really do much because of my age right now, but I really think that... I need to help something... I don't know how? I can't...

She said that she needs to know what is happening in Black neighborhoods around her, and that she wants to help, but she does not know how to, which made her feel sad and helpless.

In summary, the participating students expressed a ranged of emotional states that showed their honest reactions to the circumstances or events depicted in the texts. This suggests that reading can provide opportunities for students to indirectly experience and understand social events and issues as well as empathize with others around them in society.

4.1.2.2 Activity

The participating students engaged in sociocultural activities, which were situated in different social contexts, both online and offline. They actively formed a judgment as they read texts with different perspectives and participated in discussions and communications within online spaces.

Making judgments

First, students made judgments to evaluate content in texts and presented their opinions about the idea represented in texts (e.g., good or bad, agree or disagree, balanced). In general, they were rather straightforward when evaluating the content of text: "I (don't) like…," "I (dis)agree with…," and "I think that's (not) right." For instance, many students agreed with the idea of Text 2, which presented the idea that "gentrification can be much needed investment."

> Michelle: I think this idea is good. Like having gentrification, not push people out, but still bring money in.

> Serena: They're good opinion because like they actually help you on like, because they help you doing life or stuff like that.

> Tiara: And I kind of like that better, because if you're not pushing them out then everyone has a home and there's less homeless people. I like this one better than the last one, sort of? because it shows that gentrification can be like... it can be good because you don't have to move the other people out.

In addition to indicating their agreement with text ideas, students also expressed their disagreement with (and disputed) text ideas. In particular, they strongly claimed that it is not acceptable to force people from their houses and create a new community in a neighborhood. In most cases, students added their reasoning or justification for why they disagreed with text ideas. In particular, many students evaluated the issue of gentrification as an unfair and discriminatory process.

> Michelle: I feel like it's kinda unfair because it's like, it's the more, it's like they're just greedy. Like they just want more money and they're not thinking about other people because it says there's also people with disabilities who lose their homes and it's like they're not regular people so they need help with things, but they're losing their house because people want more money.

> Michelle: I think it's kinda unfair cause it's like um, East Liberty, the people in East Liberty who were once living there are getting pushed out and then like they're building new apartments and trying to bring them back in. But they raised the rent and the rent's too high

for the people who was once lived there. So now they have to move somewhere else. Probably like the projects cause it's affordable.

Michelle: I don't think it's right. Like it's just, unfair to those people.

Serena: That's not fair how like we have to live in poor neighborhoods and nobody else don't.

The following show Dayanara's judgment-making process throughout her reading, which began with a simple judgment statement, "*I don't know. I don't think it's okay*," and developed into an argument, "*And where we, like, came from and our land, they're pushing us. Um, they're, like, interrupting our Black culture. I mean, they're taking what we formed and just, like, throwing it away or throw it in a dumpster or something.*"

Dayanara: I don't know. I don't think it's okay because, um, like you're, you're taking people from their homes like, like it's like they're forced to move and which they shouldn't have at all because better or new things are happening to their neighborhoods.

Dayanara: I feel that they should not happen like they should, like they shouldn't have and I feel like it's unfair for the people who do live there, people who've made that their home and for people who can't afford to actually move to different places or better places.

Dayanara: Many other people with low income or, um, or like people of color or like forced to do something they don't want to do and I don't think that should happen and it could affect me.

Dayanara: So people shouldn't have to be like forced and, uh, like, I don't know, like out of the community just because they can't afford it. It's not fair. And it says just like in Pittsburgh, like it really affects, uh, the city, the community.

Dayanara: It shouldn't be people versus companies should be like equalness. and it shouldn't be versus, like people should, uh, just enjoy each other and be able to like, be like afford things the same as, uh, other people who don't have this much money. They should just receive the same kind of equalness.

Even though students stood for one side as they made judgments, some students took a balanced approach and tried to understand both sides of a story. One student, Celeste, provided a

simple, but balanced claim about the process of gentrification: "*I think it's kind of good because they make the place look newer. But sometimes it's bad when it takes people's homes.*" Michelle also made a similar claim, "*Um, I feel like it was a good and bad change cause, like, stuff again, like, like stuff getting demolished wasn't so good, but it's also getting, like, rebuilt into something that's needed.*"

Moreover, when Michelle read an article "This is What Happens After a Neighborhood Gets Gentrified" (https://www.theatlantic.com/politics/archive/2015/09/this-is-what-happens-after-a-neighborhood-gets-gentrified/432813/), she presented her balanced view about a neighborhood becoming more diverse.
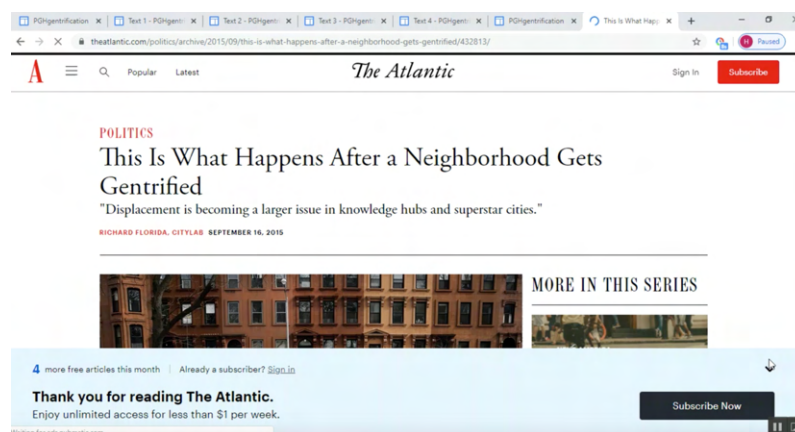
> Michelle: Well I think it's good to be more diverse cause it's like good to see different types of people and like where they come from, but sometimes it's not always that good, cause they're like, you don't really know them, so it's kind of like hard to open up or like talk to them. And some people might look at you differently cause like… let's say you've moved out when you're in this new neighborhood and it's like you're acting a way that you thought was normal before but then these people were coming in just like looking at you, like a weird person.

Michelle acknowledged the advantages of a neighborhood with a more diverse population, but she also pointed out the disadvantages of a diverse community with newcomers. This shows how students can consider conflicting perspectives through an objective and unbiased lens. In

addition to taking a balanced view toward the issue, students sometimes postponed their judgments and hesitated to express their opinions. In particular, when students read the mayor's tweet (Text 4), they seemed to be hesitant to make judgment: "*Well, I don't know if it's true because I ain't living in East Liberty, but I guess he's basically saying that's getting better*"; "*I think I have to, like, think about it because I don't really know a lot about East Liberty's crime and, like, their investments.*" It seemed that when the main idea or main argument of text was closer or relevant to the students but they did not clearly know about them, they were more tentative in evaluating the content or forming their argument.

Beyond making judgments about whether they agreed or disagreed with main idea, the students also read against texts, which means that they interrogated, questioned, and challenged an idea with judgments of its validity, plausibility, and value.

Dayanara: I don't know if that's really true because it's still happening

Serena: I don't think that's true because like it's not just East Liberty that has crime, it's the whole city, it's just it's all Pittsburgh that has crime. And like a lot of shooting the police brutality and all that. So I don't think they changed or they're trying to reduce crime yeah

Tiara: I'd say...I'd say they have been avoiding it but it still happening…Again I think like honestly it's happening now but I don't believe that it's been happening for over a decade because like just a couple of years ago you go down there and you see just a whole bunch of one culture and then this year you go down there you see multiple cultures so it's really not just yeah I don't think it's been happening for over a decade I think it's just started like last year.

There were some students who went beyond simply reading against texts, also suggesting different ideas. They made a (counter) claim for suggesting and proposing new ideas from different and/or new approaches (ideas, perspectives, solutions) to the problems. For example, Tiara suggested a new idea about the arrival of big technology companies that considers underprivileged people first: "*Like I think those 50,000 high-paying jobs, anyone could get those, not just the rich*

people already. I think more of the people who are struggling financially should get those jobs because if they're struggling financially high paying jobs would get them back on their feet and get them living in a better house."

Taken together, students actively made judgments and arguments about text ideas if they agreed or disagreed with them. More importantly, I found that the students could challenge and question text ideas when they found them to be unreliable or untrustworthy. Although it was rare to find instances of students reading against texts, I found several instances of those activities, which showed the potential for the students to act as text critics.

Participation

Because the participating students engaged in the tasks in a digital space with various opportunities to participate and write, I found varied ways the students communicated and expressed their opinions, thoughts, emotions, and beliefs in an online context. In particular, they participated in writing comments on webpages or social media posts, which allowed them to make a statement that clearly allied themselves with things done by, for, or to others in a digital space.

One way for the students to participate in online community was to click the "like" button or write a comment on the webpage. Dayanara, for instance, wanted to "like" a comment as a way to support the author's argument. She asked, *"Can I 'like' a comment? Because I agree with it.*" Jasmine also said, "*I just 'like' the stuff*" and "*I would 'like' this one 'cause I understand, like, what he's trying to say.*" These examples show that students would use the "like" button as one way of expressing their opinion in a digital space.

In addition, some students wanted to write a comment in response to a text or to other people's comments. Critically, most students said that they would not write a comment on the

social media post of anyone who is not their friend. Nevertheless, Celeste and Serena interacted

and communicated with the author in an online space by writing comments for each text in Task

1 (see Figure 11).

Figure 11. Comments Written by Students

Furthermore, it seemed more natural for them to reply to other people's comments or to

add a comment on a social media post instead of writing a comment on a webpage with a news

article. Serena said, "*If I was on Twitter, I'll add a comment that says that . . . 'I don't agree with*

you because . . .' (typing)."

Writing a comment was not the only way students participated in the online community.

They also wrote their own social media posts, which created a space for them to join and hold

conversations in a digital space. Students could participate and share their opinions in several ways

such as by advocating, augmenting, calling others to action, informing, persuading, provoking,

using humor (sarcasm), and stance-taking.

Students wrote to provide information about gentrification or what is happening in communities as a result of gentrification. One way to inform people about gentrification was to write about its most important facts. Dayanara wrote, "*Gentrification in today's society should be fixed and changed. It's forcing people, with low income, or people of color out of their homes. And after they fix up buildings, cafes, restaurants, and entertainment places, those people who were originally there may not even be able to afford to live in $3,000 renting apartments.*" It can be seen that here Dayanara tried to summarize what she had been reading from different sources, using her own words. After providing information about what gentrification is and what problems surround it, Dayanara wrote a clear argumentative sentence: "*Just because of income, and wealth, people should not have to migrate from their homes in order to take care of themselves and their family. Many people could care less about the reality of Pittsburgh, and communities going through gentrification, but it still should not be ignored!*" Even though the post is short, it is nevertheless a very strong argument—especially considering that the participating students are eighth-grade middle school students.

Similarly, Alicia wrote a tweet that said "*Gentrification is not fair in certain cities. They kick poor people out neighborhoods their used to staying in or comfortable in, just to make more money and build more buildings and houses. Even though it could be good for a community it could also hurt it at the same time, so people in these communities should be careful on what their trying to bring in and take out of a neighborhood. You can't just come to a place and want everything and everyone to pay your prices, because sometimes people can't do that.*" She also presented a definition, which was more value-added than Dayanara's definition, and then stated her claim. In her writing, Alicia cautioned people who may wish to come and develop neighborhoods, informing them that doing so may hurt long-term residents of those neighborhoods.

These writings all feature the students' stance-taking, which explicitly shows their points of view on the issue of gentrification. Tiara, for instance, viewed gentrification as "*not a good thing*" and understood it as "*segregation,*" writing *"Gentrification is forcing people to move out, it basically is the cause of SOME homeless people. Most Black neighborhoods are being taken over and soon it will be all of them, where are they supposed to go? It's been going on for a while now and not many people noticed until their community was taken over. Gentrification is not a good thing, why can't everyone just live in a mixed neighborhood, I thought we passed segregation.*" Based on her Facebook post, it is clear that she strongly opposes gentrification and its displacement of the Black community. She adopted the stance that everyone should live in a mixed neighborhood, and that people should not still be segregated according to their ethnicity.

Beyond merely arguing about their opinions, students also wrote social media posts to call others to action. For instance, Michelle wrote—in the form of a Facebook post—a call to action to keep the Black community together and to stop the process of gentrification in East Liberty: "*Gentrification is a very degrading thing. Wealthy and middle-class people taking properties to make more money for themselves but leaving people without homes and jobs in the process. It's mainly Black neighborhoods that they are targeting. Let's help stop this and keep our community together.*" The last sentence, "*Let's help stop this and keep our community together,*" clearly invites and encourages people to support their community.

In their writing, students used techniques that could evoke specific reactions or emotions in readers. Some students used a picture (e.g., a photograph of Pittsburgh before and after the demolition of East Liberty), while other students used strong words (e.g., "*Gentrification is a very degrading thing*"). These pictures or words can evoke readers' emotional reactions or incite action because students use them to illustrate straightforward, painful truths.

144

Moreover, one student—Celeste—knew how to use tone to influence the effect of a critical social media post. Celeste used a sarcastic tone in her writing, combining the most beautiful picture of downtown Pittsburgh on her Instagram post with the caption, "*The part, they tell you about...lol #gentrification #Wedeservebetter*". In this writing, she intended to criticize the fact that people focus only on the attractive aspects of development, ignoring the displacement of communities and culture.

As reflected by a variety of student writings, the students' participation in a digital space was active and critical for writing, both style-wise and content-wise. Furthermore, students' voices were clearer and stronger when they participated in writing than when they engaged in reading texts alone.

4.1.2.3 Identity

While reading texts, I could find a trace of the participating students' varied offline identities, such as adolescent student, Black youth ("we"), Pittsburgher, and family member, which are closely related to their daily lives.

Adolescent student

Because this study was conducted in an empty conference room in a school building during students' regular Social Studies class time, I was able to trace students' reader identities as adolescent students. That is, these students evinced attitudes and mindsets as middle school students and teenagers. For example, Eleasha and Tiara explicitly mentioned their age and described perceiving themselves as kids who are different from adults.

> Eleasha: I mean... I really can't really do much because of my age right now, but I really think that... I need to help something... I don't know how? I can't...but I'm just try being... I

really wanted to become an actress, well I do still I wanna become an actress when I get older, so I'm gonna just try to be one of the best like actresses I can.

Tiara: I think it's relevant because this is something that kids have to look out for when they're growing up because you never really know what your parents are going through and this could be something you know, they could be hiding it from you because they don't want you to know about it honestly cause they don't want it to affect your education. This is something kids can look out for when they grow up because this could possibly happen to them.

Furthermore, I was able to observe students' optimistic and hopeful attitudes regarding the issue of gentrification, which can be seen as a trait of adolescent learners. For instance, Tiara's view towards gentrification reflect a positive and encouraging view, which adolescents often take towards social issues: "*They can both live there and that's what I was saying at the beginning, I like when people aren't displaced because no one likes feeling displaced or out of the ordinary and this gives them a place to live.*" This and other examples of middle school students' distinctive style of reading and thinking suggest that developmental level may be considered among the factors that influence readers' investigation into current social issues. This raises an interesting question: How do the distinctive characteristics of adolescent readers affect their examination of social issues?

Black youth

Throughout the students' reading and writing tasks, I was able to detect a trace of Black youth identity. For example, Dayanara said, "*I'm a person of color and, um, it affects my community and my culture . . .* "; "*And where we, like, came from and our land, they're pushing us. Um, they're, like, interrupting our Black culture*"; "*Because I'm a, I'm Black.*" In these and other examples, I recognized explicit references to the students' identities as Black youths.

In addition to such explicit references, there were also implicit indications of students' Black youth identities that could be distinguished by analyzing their ways of thinking, reading, and understanding texts. For example, students consistently used the pronoun "*we*" when they allied themselves with people of color, especially Black people. This use of "we" was particularly notable in Alicia and Eleasha's arguments, namely that they think there is racism directed towards them ("Black people," "we") and that other people ("they") want to kick them all out because of money.

> Alicia: I think he was saying that gentrification has been around a lot of cities and stuff. And when that we found and that we umm... they're like kicking us all out because they want more money and want to be able to buy probably bigger houses and more items for their stores so they can keep bringing in a lot of money.

> Eleasha: That is... like how they said, how the first one, Lily Gordon, she was right. I really felt her on that...They're just giving up these homes and she was right when they said, especially the Blacks, we have a lot of racism pointed towards us and now there's still racism pointed towards us, but they're showed in different ways. Like, they're trying to cover it, but it's still showed and they're taking away our houses.

> Eleasha: It's like they...they're trying to drive us out of America.

In particular, Eleasha was critical about racism that is still happening in America, which occurs in different ways while "they" (possibly the government or the big companies who caused displacement of people of color) try to conceal it. This also shows that Eleasha has a strong, well-defined self-awareness as a Black youth living in the US.

Family member

Because the participating students are members of families, they also enacted their identities as family members, such as sister, daughter, and granddaughter. They often made connections between the text idea and their families' stories, such as employment conditions or

147

housing and displacement, and they raised their voices as family members who feel that their families deserve better.

Pittsburgher

The identity that emerged more frequently than any other was that of Pittsburghers. I noticed traces of students' identities as Pittsburghers as they expressed their feelings of care or love towards the city. For example, after reading Text 3 about Pittsburgh's gentrification, Eleasha expressed her worries and care about Pittsburgh, saying "*Because this is my city. For all I know, they can't tear down on our home and make it more expensive, but still have it look the same.*" Additionally, I found that the students' reactions to the mayor's tweet were driven by their reading of his tweet as Pittsburghers. They became angry or confused about the mayor's argument: "*I don't know . . . like, right now I just have a whole bunch of mixed emotions . . . I don't know whether to believe it . . . or to be angry because he said that. I'm very confused.*" If they were not a resident of this city, they would not have felt these mixed emotions; rather, they might have distanced themselves from the problem.

Students' identities as Pittsburghers were also clear when they wrote social media posts. For instance, students wrote persuading sentences such as "*Many people could care less about the reality of Pittsburgh, and communities going through gentrification, but it still should not be ignored!*" and "*Let's help stop this and keep our community together.*" These writings can be seen as derived from their feelings of belonging and membership to their community—in this case, Pittsburgh.

4.2 Three Dimensions of Literacy Practice in a Digital Space

The participating students engaged in two critical digital literacy tasks in different ways, using the various resources described in the previous section. For example, some students were fluently engaged in close reading of each text or image using their personal experiences, whereas other students had difficulty comprehending texts and brought their broader worldviews and beliefs to help them understand. There were also students who read texts and images to critically examine or evaluate them using various cognitive and sociocultural resources. Nevertheless, even though there were differences in each student's performance, there were also similarities in their use of resources. As I analyzed coded transcripts, I found patterns between resources used and literacy practices that students engaged in. For example, students' literacy practices when utilizing only cognitive resources were different from when they actively used sociocultural resources. In addition, I found different patterns in which, depending on the context of students' reading, both cognitive and sociocultural resources would be activated. By analyzing shared characteristics and patterns of resource use among the participating students, I found the distinctive dynamics of an interplay of resources that led to different literacy practices, such as cognitively engaged reading comprehension, socially and culturally shaped reading and participation, and multiple modes of communication that reflect on digital textual environments.

As a result, I found that they engaged in three distinctive dimensions of literacy practice in a digital space: a) cognitive–constructivist, b) sociocultural–critical, and c) digital–multimodal (see Figure 12).
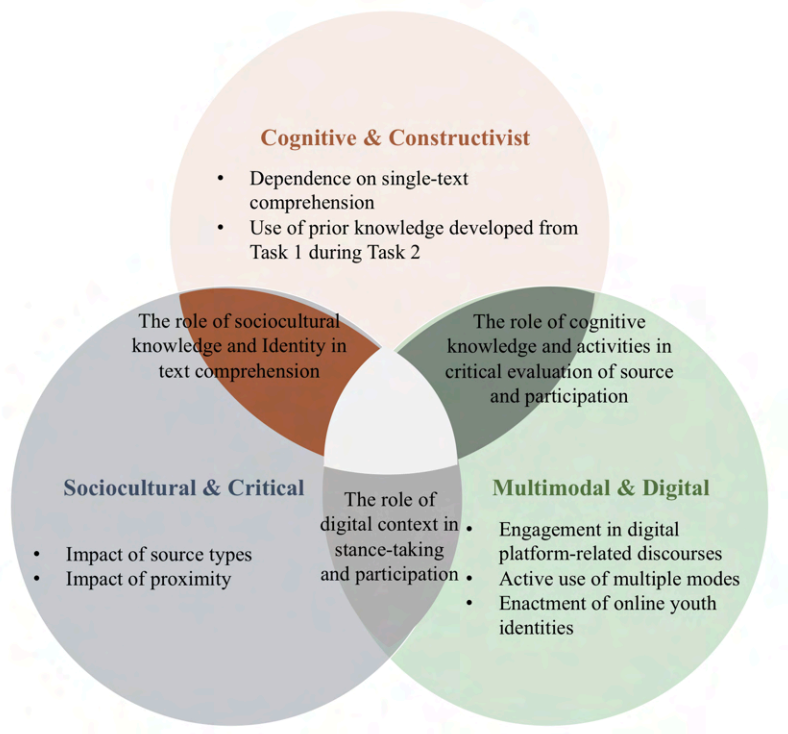
Figure 12. Three Dimensions of Literacy Practice in a Digital Space and Interplays of Cognitive and Sociocultural Resources

Furthermore, I found dynamic interplays of cognitive and sociocultural resources—within, in between and across the three dimensions—that supported students' understanding of texts, examinations of multiple perspectives, participation, and so forth. In the following sections, I will explain the characteristics of each dimension as well as resource interplay, with representative examples.

4.2.1 Cognitive–Constructivist Dimension

During digital literacy tasks, the participating students often engaged with the cognitive–constructivist dimension of literacy practice to a) understand the meaning of a text they were

currently reading, b) build knowledge about the topic, and c) notice multiple perspectives, issues, and situations. While engaging with the cognitive–constructivist dimension, the students utilized various cognitive resources, such as reading strategies and prior knowledge about the topic of the text. They also used prior knowledge developed from their readings of previous texts to help them make sense of new texts. In addition, the students activated sociocultural knowledge to enhance their text comprehension, both when they comprehended the text as well as when they misunderstood it. Within the cognitive–constructivist dimension, participating students evinced three noteworthy aspects of resource use during Tasks 1 and 2, which are enumerated below.

4.2.1.1 Dependence on Single-text Comprehension

First, the participating students relied primarily on single-text comprehension processes for both Task 1 and Task 2. Particularly during Task 2, when students read texts from the websites they accessed, they tended to engage in basic reading strategies, such as summarizing, paraphrasing and noticing, rather than engaging in more sophisticated reading processes. This was because Task 2 required students to read unexpected, difficult, and lengthy online texts that tended to exceed their reading level.

For example, Dayanara made repeated attempts to understand and summarize the main idea of sentences or paragraphs that she read throughout her online reading task. As her initial search term, Dayanara searched for "*gentrification in Pittsburgh*" using the Google search panel. After skimming the search results, she visited the first website and read it sentence by sentence to understand the meaning of the article titled "New white flight and suburban displacement: Study looks beyond gentrification in the Pittsburgh region."

> Dayanara: Um, so there were basically saying the population of the many areas in Pittsburgh are increasing Black people. Um, small like, small people, not small people,

people with low income or like, well people with high income are moving into better communities where people with low income are in like bad areas of Pittsburgh.

Dayanara: But yeah, I don't feel like reading. (Um, yeah, you can search more different things to read if you want.)

Dayanara: I think I'm goanna just skim through this.

After reading this article, sentence by sentence, nearly five minutes, Dayanara expressed her tiredness and boredom with reading and wanted to give up. However, she did not quit reading it; instead, she decided to skim it, and continued to paraphrase or summarize the sentences as follows.

Dayanara: (What are you thinking?) So they're saying more like the chances for people to move in or for like wealthy education, wealthy schools, wealthy, um, like, well better, better not wealthy, that's what I'm talking about. Like better community people are more likely to move into those type of communities with better schools, better neighborhoods, better people, better neighbors. So I think that's what it's saying.

Dayanara: So they're saying more like the chances for people to move in or for like wealthy education, wealthy schools, wealthy, um, like, well better, better not wealthy, that's what I'm talking about. Like better community people are more likely to move into those type of communities with better schools, better neighborhoods, better people, better neighbors. So I think that's what it's saying.

Furthermore, because texts presented online were typically long and difficult for the participating students to read, students often focused on certain parts of the text. They generally did not try to understand the comprehensive and overall meaning of the entire text. The students often spent their time making sense of—or inferences about—a particular term, sentence, or part of the text. For example, when Tiara read the following sentence on a website, "*One East Liberty tract did lose more than 600 Black people between 2000-2010, but that was not large enough to qualify for displacement, by NCRC metrics*," she focused on the phrase "*lose more than 600 Black people*" and reacted to it alone.

Tiara: It says, um, East Liberty did lose more than 600 Black people? It's like, that's a lot..!!

Tiara: Um, most likely, nearly all of those Black people are probably homeless right now, I'd say. That's why a lot of people are homeless now, (home trained?) they're homeless right now because of like a displacement (yes).

She then made sense of that phrase as "*nearly all of those Black people are probably homeless right now*," which reflects her misunderstanding and misinterpretation of text information. As seen in the examples above, during Task 2, when students encountered un-manipulated texts, which often included longer sentences with difficult vocabulary and terms, they tended to rely on single-text comprehension by focusing on a certain part of the text.

4.2.1.2 Use of Prior Knowledge Developed from Task 1 During Task 2

Along with my finding that the participating students engaged in single-text comprehension processes, I also observed that they rarely engaged in multiple-text comprehension during either task. I assumed that this was because, during Task 1, the students were new to this novel topic, learning about it as they read each text—whereas during Task 2, they encountered web sources that were difficult for them to understand.

Nevertheless, it is noteworthy that they used knowledge developed from the texts in Task 1 as their reference point to read images, social media posts, and other online sources. In particular, the students frequently referred back to the information gained from Task 1 when they searched and read online during Task 2. The students used this intertextual linking between emerging knowledge and text in different ways that were either explicit or implicit in nature.

For example, Dayanara said "*Like we said before*," which can be inferred to mean that she is referencing texts or ideas that she had read or thought during Tasks 1 or 2. I was able to assume that the idea she was describing ("*like when they're bringing in new people to the neighborhood*

so they can get more money, probably for their businesses") was derived from Text 1 or Text 3, which explained how big companies bring wealthier newcomers to the poorer neighborhoods and thereby develop that community.

> Dayanara: [During Task 2] So it's basically saying that gentrification is when… like we said before, like when they're bringing in new people to the neighborhood so they can get more money probably for their businesses and to be able to expand their neighborhood because the more wealthy people we have more money you make, and people, of course, try to make money. But then some neighborhoods probably all try to make money and not really worry about the other people that I used to be in the community and how it might be hard for them to be moving out and trying to be somewhere where they can actually afford. So that could be a lot for them. And people who are just trying to make money and businesses and just trying to have big houses probably don't really understand that because they're just into for... well they're not just into for money

Some students also brought exact words and phrases that they read in previous texts. Alicia brought "Google" and "Uber," which she read in Text 3, to her reading of a web source that she encountered during her online reading research.

> Alicia: because they… like "Google and Uber*"… they want to come into the neighborhood* where the rent is low and then they want to make it as like theirs, and try to expand the neighborhood?

This shows that she connected her reading from Task 1 to Task 2. Students also brought prior knowledge developed from previous texts, in either Task 1 or Task 2, to make intertextual links between them. For instance, Dayanara contrasted the idea that was presented in Task 1's texts (i.e., gentrification forcibly displaces people from their homes) with the idea represented in the web source during her online reading (i.e., gentrification can be related to shops, cafes, restaurants, or anything that makes a community look better).

> Dayanara: [During Task 2] I don't know... Mmm. I guess like gentrification could also not just be homes but like could be buildings. It could be shops, cafes, restaurants, anything that makes a community look better*,* I guess? they are naming things that can help people who are going through gentrification. And the number one says, "know your neighbors... (keep reading)"

154

From her inclusion of the questioning "*I guess?*" at the end of her statement, I could assume that Dayanara had found that the new information was similar, yet also different from what she had read, and that she was trying to make sense of that different piece of information.

In summary, students were observed to build their knowledge about the novel topic as they read texts, and they also used those emerging pieces of knowledge as they read different texts. Based on these results, I conclude that it is important to provide texts that can support students' prior knowledge before they venture into further investigation of an unfamiliar topic in a digital space.

4.2.1.3 The Role of Sociocultural Knowledge and Disposition in Text Comprehension

When reading texts that concerned an unfamiliar topic, students often activated their sociocultural knowledge and disposition to enhance their understanding of the text idea, author's argument, and surrounding issues. Students used sociocultural knowledge in two ways while engaging in reading comprehension: a) using sociocultural knowledge and experience as prior knowledge that is relevant to the text, and b) using sociocultural knowledge and experience as a way to elaborate a piece of information presented in the text when struggling to understand the text's meaning.

4.2.1.3.1   Use of funds of knowledge and experiences to enhance understanding of text idea

As I closely examined the interplays of various resources in a cognitive–constructivist dimension, I found that students' text comprehension and meaning-making processes were often enriched and encouraged by their sociocultural knowledge, especially their funds of knowledge and personal experiences. In particular, when the students read about Pittsburgh neighborhoods (Text 3), their sociocultural knowledge related to their neighborhoods and Pittsburgh (e.g., geographical knowledge, community-related knowledge, personal experiences) helped them understand the text's main idea and argument.

For example, Eleasha used various Pittsburgh-related knowledge and experience as she read Text 3, which led to her deeper understanding of situation presented in the text – what is happening in Pittsburgh and what people in Pittsburgh are going through. When she first saw the title and the picture in Text 3, she said that she sees a lot of places that are similar to the neighborhood in the picture, and she elaborated what she knows about the neighborhoods that are "*considered as projects*" in Pittsburgh.

> Eleasha: [After reading the Title and the image] It's kind of...I see a lot of places like that in Pittsburgh. They're considered as projects but they're just homes for people who can't really keep... well, the people who can't really afford better houses.
>
> Researcher: So, you saw these kinds of neighborhoods in Pittsburgh?
>
> Eleasha: Yeah everywhere, there are a lot of them. It's like a house split into two to make two houses.

In this context, what Eleasha meant by "projects" was the "ACTION-Housing project," which offers affordable housing to underserved populations in Pittsburgh. She seemed to be aware of the properties that this project offers to low-income Pittsburghers. Then, she continued to

closely read the main text, out loud and sentence by sentence, to make sense of the text idea and elaborated the text information using her knowledge about neighborhoods in Pittsburgh.

> Eleasha: [Reading] That's where I've seen of this. It was like near downtown; it was on the Hills District. They have a lot of houses like this and then Bloomfield. and I see them all the time. East Liberty.

> Eleasha: Some places like... no not that many places in my neighborhood. They're just houses. 'McKee's Rocks'. There are some places, some houses like that, that looks like apartments and what's it called? on Broadway, it's like, it's like the main street around here that a lot of people would go on, it seems deserted now that Corona is here.

As she read about the names of different neighborhoods in Pittsburgh, Eleasha made connections to the neighborhood captured in the picture and some places that she has seen. She then elaborated further by bringing more geographical and community-related knowledge that was not present in the text.

Similarly, when she read in Text 3 about the recent change in Pittsburgh, with big tech companies coming to the city, she brought her past personal experiences of seeing those companies near her home.

> Eleasha: [Reading "*Change happened again in the early 2000s when major commercial developments brought life back into a neighborhood now home to retailers like Whole Foods, Target, and Home Depot. In 2010, Google made a big impact on this neighborhood, too. Once America's steel town, the city is now a hub for Google, Amazon, and Uber.*"] It really is. I saw a big Uber, I see Uber companies near me, I saw um, there's a big Amazon near me, and if I go on the highway going towards South Side, you can see Google, there's Google company. And they hire really talented people at Google, so you have to be really talented when it comes to their stuff.

After reading all of Text 3, as well as the comments of two people, Eleasha understood what the author (Lily Gordon) was arguing about the problem of "*racism pointed towards us (Black people),*" and she agreed with that argument. Building upon the author's argument, Eleasha

claimed that there is still racism being pointed towards Black people in different ways and that one of them has revealed itself in this problem of displacement: "*They're taking away our houses.*"

> Eleasha: [Reading two comments] Like how they said, how the first one, Lily Gordon, she was right. I really felt her on that...They're just giving up these homes and she was right when she said, especially the Blacks, we have a lot of racism pointed towards us and now there's still racism pointed towards us, but they showed in different ways. Like, they're trying to cover it, but it's still showed and they're taking away our houses.

Eleasha's close reading of this text was supported by her funds of knowledge and experience, and it supported her understanding of the issues suggested in the text, such as changes happening in Pittsburgh's neighborhoods, displacement of people because of high rent, and gentrification's negative impact on the Black community.

In contrast, the following example shows the opposite—that is, a student not activating her knowledge or experience about Pittsburgh while reading the same text that Eleasha read.

> Celeste: That interests me. The first line, that places that have been demolished, too. I was reading this one over again. About East Liberty, and things that they demolished, and that they have bigger things.

> Celeste: So basically, East Liberty, which was the main place, that was destroyed so that they could make better things, but sometimes better things aren't better. Because sometimes people don't like the things that they built, and then they destroy something that is perfectly fine cause something that doesn't work out is there.

Celeste read the entire text about Pittsburgh's gentrification, and then summarized it as "*Sometimes better things aren't better.*" She talked about how people may often destroy things if they do not work out somewhere, and how that is not a good idea. Even though main idea of Text 3 was not about demolishing buildings to make them better or bigger, Celeste nevertheless seemed to focus on the word "demolition" and persisted in equating gentrification with the demolition of buildings. She then added her reaction and feelings about this text and people's comments.

158

Celeste: I feel... if something's not a bad thing that you shouldn't break it apart. If something's not a bag thing, they shouldn't be broken apart.

Celeste: I feel like Lily, she has her opinion on which... that more places will be gentrified, and Anthony, I feel like he is like hurt because he can relate back to where the area is.

Celeste focused on and understood only fractured pieces of information suggested in text and comments, such as "*Penn Plaza apartments were demolished*"; "*Where ever they come, they deplete the neighborhood*"; and "*I'm kinda familiar with the area*" in a superficial way. She did not understand the argument or issues as a whole, but rather noticed only some pieces of information from the text. Taken together, these two students' examples show how sociocultural knowledge and experience can be helpful when students read and understand text ideas, especially when they concern social issues and situations that may be too complex to fully understand from reading a single text.

4.2.1.3.2 Use of sociocultural knowledge and experiences to compensate for misunderstanding

Although there were cases in which sociocultural resources supported sophisticated text comprehension, this occurred only when students succeeded in comprehending a text to an adequate degree. When students did not fully understand the meaning of an entire text, they often focused on a specific part of the text and made connections to their sociocultural knowledge or personal experiences.

Notably, while reading Text 2, students tended to focus on a specific sentence with a broad idea (e.g., Education should not be just for the rich people) that they themselves could relate to and analyzed it within the context of their beliefs or worldviews (e.g., Education should be provided equally). For example, Dayanara did not fully understand the meaning of Text 2, which presented a new perspective on gentrification (i.e., that it is an improvement for the community). She said, "*It's, like, kind of, like, the same, well, the first, like, the last one*," and continued, "*basically, people, they're pushing people out of their neighborhoods for people who have like, who are richer, whoever wealthier*," which is a misinterpretation of this text.

> Dayanara: Um, there's like, like working, I guess people well, buildings that are like not done, I guess those are buildings. Um, there's black people there. Yeah. Okay.

> Dayanara: [After reading Text 2] Um, well it's kinda, I feel like it's like kind of like the same, well, the first, like the last one. Um, so they say basically people, they're pushing people out of their neighborhoods for people who have like, who are richer, whoever wealthier.

Celeste then took the one important claim made in the final paragraph (i.e., "The benefits of urban living, new jobs, cultural events, and great schools shouldn't just be available to the rich") and claimed that "*better schools and better neighborhoods shouldn't just be for rich people.*" Here, she seemed to focus on the one sentence that aligned with her beliefs and worldview about what

is fair and what counts as equity; she then further elaborated her argument and beliefs as described below.

> Dayanara: And they, they said that, um, it shouldn't like…better schools and better neighborhoods shouldn't just be for rich people. They should be for all people. And I, I agree with that because, um, it's important for everybody to receive the same education, high level education, people to receive the same, um, the same equalness, Things shouldn't be unfair like that.

When considering she misunderstood the main idea of this text, it seemed to be clear that she chose the sentence that she was able to comprehend and that resonated with her own beliefs. Likewise, students who could not understand the main argument or important statements made in texts often focused on specific information that was easy to understand and aligned well with their own beliefs and worldview. As a result, students often made judgmental comments towards pieces of information suggested in text by saying, "It should (not). . ." without understanding the overarching argument that text was making.

4.2.2 Sociocultural–Critical Dimension

In addition to cognitive–constructivist dimension, the participating students also engaged in the sociocultural–critical dimension of literacy practice to a) develop their standpoint and perspective, b) make judgments to evaluate content in texts, and c) participate in discussions or conversations in a digital space. In this dimension of literacy practice, students activated sociocultural knowledge and enacted various identities that led to their critical evaluation of text and participation. In particular, I found that the source types and proximity to topic were important factors for students to situate in a critical space using a variety of sociocultural resources. I also found that cognitive activities—as well as their use of sociocultural resources—are important for

students' examination of text.

4.2.2.1 Impact of Source Types

Types of online source (e.g., news articles, social media posts) played an important role in students' activation of sociocultural knowledge and enactment of multiple identities for examination of text. Most notably, the students actively made judgments and questioned about text ideas while bringing sociocultural knowledge from their standpoints as Pittsburghers and Black youth when they read Texts 4 and 5 during Task 1. Texts 4 and 5 were both tweets written about Pittsburgh's gentrification. Right away, some students who paid attention to the author information noticed that the tweet (Text 4) was written by the mayor of Pittsburgh.

Eleasha: Wow! The mayor. Out of all people...the mayor said that.

Michelle: Bill ped...Ain't that the mayor? Mayor Peduto?

Serena: He's the mayor?

Once the students recognized the author of the tweet, I could detect a trace of their identities as Pittsburghers or Black youths to make judgments about, or read against, what the mayor was arguing in his tweet. For example, Eleasha challenged what the mayor argued in his tweet and elaborated what she knows and experiences as a Pittsburgher ("we").

Eleasha: He thinks that we avoided gentrification?

Eleasha: There is so much crime going around. Not that much anymore, but there was. And "improving investments" – Sure. Not like anyone can keep on building houses now, we all have to stay inside, so not really much is improving and investing. No one can invest in anything right now.

Additionally, Celeste expressed confusion because what the mayor was arguing did not align with what she knew about the neighborhood (East Liberty).

Celeste: I'm little confused. So basically he's saying that East Liberty has been avoided gentrification? when it was already like, destroyed… and rebuilt...*"to reduce crime and improving investment"*...I've seen him, I met him before, cause I'm the president of the school.

In addition, some students were thinking about the reliability and the validity of the argument presented in the mayor's tweet: "East Liberty neighborhood has avoided gentrification." Many students raised questions and doubted whether to believe it.

Alicia: Well, I don't know if it's true because I ain't' living in East Liberty but I guess he's basically saying that's getting better.

Serena: I don't think that's true because like it's not just East Liberty that has crime, it's the whole city, it's just it's all Pittsburgh that has crime. And like a lot of shooting the police brutality and all that. So I don't think they changed or they're trying to reduce crime yeah.

Serena: I feel like... I mean like, somewhat like I agree with him but then at the same time I don't because like nobody is not trying to like stop the violence so I don't get his point.

Dayanara: Um.... I don't know, um, he's saying that East Liberty neighborhood has avoided gentrification while reducing crime? I don't know. Is that true? Because they're still like, they're still making new buildings and companies are coming in still pushing other people out. So I don't know if that's really true because it's still happening. And is it reducing crime? I don't know. And improve investment. I think it's like he's saying like is better for companies that gentrification is happening, but for the people it's not for people who originally lived there. It's not going no good for them.

In addition to the mayor's tweet, most of the students situated themselves when they read the tweet and viewed the video from Text 5.
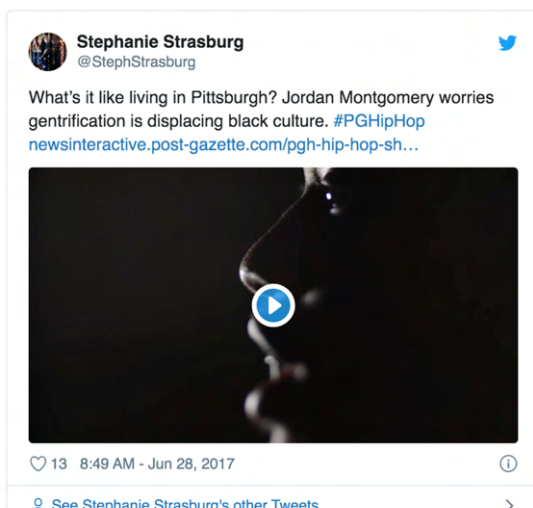
For example, students generally agreed with what the rapper in the video was arguing and criticizing (i.e., that gentrification in Pittsburgh is destroying and displacing Black people, their culture, and their communities). In contrast to the students' reactions to the mayor's tweet—whose truthfulness they doubted—students said they believed that what the rapper was saying is true, and understood what he was saying about the Black community, because they are also Black people living in Black communities.

> Dayanara: I think he spoke a lot like facts and like the reality he spoke about the reality of Pittsburgh and that gentrification is actually hurting the Black community as they're pushing us out our original homes. And where we like came from and our land, they're pushing us. Um, they're like interrupting our Black culture.

> Eleasha: I agree with him, because it's... it's basically saying what a lot of Black people are going through and I really need to know what's going on around me. I really think that he was speaking the honest truth.

> Tiara: Basically, they're just tryna kick Black people out to the curve and get more money and letting people live. I agree him.

In addition to those tweets, the students related themselves to what the authors were saying when they read the comments from real-world people in Text 3. Text 3 contained two comments;

one is by a Black woman who expresses her bitterness about gentrification, arguing that gentrification depletes the neighborhood of its original people—especially Blacks.
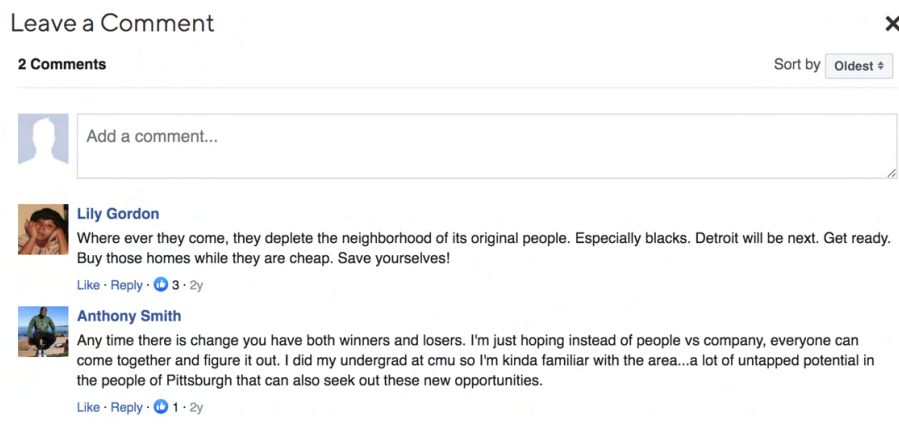
Some students responded to this argument. For example, Eleasha and Tiara said they agreed with what this woman was arguing, and that they think that Black people are facing racism in different ways.

> Eleasha: That is... like how they said, how the first one, Lily Gordon, she was right. I really felt her on that...They're just giving up these homes and she was right when they said, especially the Blacks, we have a lot of racism pointed towards us and now there's still racism pointed towards us, but they showed in different ways. Like, they're trying to cover it but it's still showed and they're taking away our houses.

> Tiara: And she's saying especially Blacks. That's true because as I said like Liverpool like Manchester, it's getting gentrified and like mostly Black people are getting like moved out.

Thus, reading real-life people's writings or watching their videos seemed to provide students with contexts to express their own standpoints and evaluate elements of the texts' information in ways that are different from when they read traditional written texts, such as news articles.

4.2.2.2 Impact of Proximity

Furthermore, there were noteworthy occasions when the students situated themselves in a critical space, which seemed to be encouraged by a particular word or a sentence from the text that was closely related to them. While reading Text 1, Sentence 6, "*Ethnicity is also related to this process of gentrification. Most of the wealthy and well-paid people are white while those being displaced are people of color, who typically have less income,*" many students brought their personal knowledge as Black youths by relating the issues to themselves.

In particular, students focused on the phrase "*people of color.*" When they encountered that phrase, they directly reacted to that by saying "*I'm colored,*" "*I'm a person of color,*" or "*I'm Black.*"

> Dayanara: It's relevant to me because... One, I'm a person of color and um, it affects my community and my culture…because, um, it's like, like Black people. Many other people with low income or, um, or like people of color or like forced to do something they don't want to do and I don't think that should happen and it could affect me.

> Jasmine: I'm colored. I have color.

In addition, Text 1, Sentence 7, "*One of the negative effects of gentrification is the high cost of rent. As a result, low-income people are forced to move to lower-cost neighborhoods,*" also impacted students' use of sociocultural resources and prompted them to engage in stance-taking. I assumed that they or their friends are from low-income families or communities, based on what the students were saying; this would be a reason why the students took critical stances while reading this sentence.

> Dayanara: You're taking people from their homes like, like it's like they're forced to move. I feel that they should not happen like they should, like they shouldn't have and I feel like it's unfair for the people who do live there, people who've made that their home and for people who can't afford to actually move to different places or better places.

Dayanara emphatically stated "*it is unfair*" when she read this sentence. Tiara also said "*I*

166

don't think it's okay" as she argued the importance of giving equal opportunities to all people, regardless of their income.

> Tiara: I don't think it's okay. Because I think you should give everyone a chance not just because of the money.

In conclusion, I found that the participating students' engagement in the sociocultural–critical dimension of literacy practice was also influenced by the sentences that contained specific words and phrases about people of color and underprivileged people. That is, reading about a group of people who are closely related to them made the students associate themselves with those people's situations and to stand behind their viewpoints as they read texts.

4.2.2.3 The Role of Cognitive Knowledge and Activities in Critical Evaluation of Source and Participation

Although the impacts of source types and proximity were critical when students situated themselves in a critical space, I found that cognitive activities were a prerequisite for students to participate and make critical judgments. For instance, students needed to recognize the author's intention and argument, understand the background and circumstances of a situation, and evaluate source information before they stepped into a critical space to interrogate and question texts.

Serena's two different readings and participation show how sociocultural knowledge and cognitive activities should complement each other when one engages in critical thinking and reading. When Serena read Text 3 about Pittsburgh's gentrification, she exhibited a "bland" reading by noticing, paraphrasing, or being confused without comprehending the text idea.

> Serena: [After reading a picture from Text 3] I see a poor, a poor city? Poor street, because like the house is like, they look dull. They look beaten down.

When she saw the picture of a street in Pittsburgh, Serena simply shared what she had noticed in the picture—namely, that it is a poor city and a poor street—without noticing that it was a picture taken in Pittsburgh. Moreover, she summarized what she read from the text by saying, "*it became from poor to not poor,*" which cannot be interpreted to mean that she understood the main idea of Text 3.

> Serena: [After reading Text 3] So now they're talking about the East Liberty because Google changed them around. And like it became from poor to not poor, then kind of talking about how we got like Google, Amazon and Target and all that, like the Uber and Home Depot. Because... because that back in the day they never had like technology like that.

Similarly, as Serena read the last paragraph, she simply paraphrased the sentence about a two-bedroom apartment that costs $3,000 a month to rent. She then added that she did not know what Penn Plaza is or who Alethea Sims is, which reflected her lack of effort to understand this text using her knowledge about Pittsburgh or reading it as a Pittsburgh resident.

> Serena: It feels... here, the paragraph, the fourth one, they're talking about how like the resident pays $3,000 a month for a two-bed room apartment. Because I guess they couldn't have more than two people there. And like... I don't know what the Penn Plaza is, so yeah I don't know what that is. I don't know who Alethea Sims [A person's name who wrote a comment in Text 3] is.

In this episode of her reading Text 3, Serena appeared not to focus on reading, nor did she appear to use various resources—cognitive or sociocultural—without situating herself in a critical space. On the contrary, when she encountered the mayor's tweet right after she read Text 3, she immediately paid attention to the source information and what the author was arguing, which again reflects the impact of source type.

Serena: He's the mayor? (Do you know him?) Yeah, he came to our school. It was like last year, him to be here because somebody in my grade, he's somebody, he's like the owner of our school now whatever, and he was here.

Once she noticed that the author was the mayor, whom she already knew about and whom she had even met in person before, Serena seemed to become more attentive to the text information using her critical lens. She read the tweet carefully and argued, "*I don't think that's [what is written in the tweet] true.*" She also elaborated her reasoning by drawing on her community-based knowledge about Pittsburgh neighborhoods.

Serena: [After reading Text 4] I don't think that's true because like it's not just East Liberty that has crime, it's the whole city, it's just it's all Pittsburgh that has crime. And like a lot of shooting the police brutality and all that. So, I don't think they changed or they're trying to reduce crime yeah.

Moreover, Serena took time to think more, then postponed her judgment: "*[s]omewhat, like, I agree with him, but then at the same time I don't.*" This critical judgment-making was possible because she fully understood the author's argument, his intention, and situations in Pittsburgh embedded in his tweet. Consequently, Serena's disagreement outweighed her agreement because of beliefs accumulated through her experiences—namely, that "*nobody is not trying to stop the violence.*"

Serena: I feel like... I mean like… somewhat like I agree with him but then at the same time I don't because like nobody is not trying to like stop the violence so I don't get his point.

This critical reading process led Serena to participate by writing a comment in response to the tweet. She wrote a comment to say that she disagreed with the mayor, with her reasoning as below.

Serena: If I was on Twitter, I'll add a comment that says that I don't agree with you because... [starting to type]… "*I disagree with you, because violence is never gonna stop no-matter what anyone does.*"

These examples of Serena's two different readings show how students' engagement in sophisticated cognitive activities supports their literacy practice in the sociocultural–critical dimension for them to act as critical consumers of information. Furthermore, students' evaluation of texts can lead to their participation in, and creation of, critical writing in a digital space.

4.2.3 Digital-Multimodal Dimension

As this study provided students with two critical digital literacy tasks that used a digital space as a medium for their reading and writing, the participating students inevitably engaged in the digital–multimodal dimension of literacy practice in the course of those two tasks. Within this dimension, students engaged in digital platform-related discourses, actively used multiple modes for their writings, and enacted online youth identities.

4.2.3.1 Engagement in Digital Platform-related Discourses

I found that all students had a good understanding of various digital platform-related discourses; during both tasks, no student had to ask how to access the internet, search for information, or write a social media post. Table 7 shows each student's overall performance characteristics during Tasks 1 and 2.

Table 7. Characteristics of Digital Literacy Practice of Each Participating Student

Name	Task 1	Task 2	Search Terms
Michelle	Text comprehension: Close reading	Specific issue search (gentrification in Pittsburgh)	*What is gentrification? → How do you get involved in helping with gentrification? → Gentrification in Pittsburgh neighborhoods*

Celeste	Associating with Black people	Specific issue search (gentrification in Pittsburgh) & reading images	*Gentrification → Gentrification synonym → Gentrification in Pittsburgh neighborhoods → Who does gentrification affect? → Lamier → Reading images → Northview Pittsburgh future plan*
Alicia	Text comprehension: Close reading	Multiple-issue search & reading with/against texts	*How is gentrification good? → What is gentrification like in Pittsburgh? → The least-gentrified city → The least-gentrifcation city in the US*
Jasmine	Associating with Black people	General search & reading with/against images	*Gentrification → What is the most gentrified city in the US? → Gentrification*
Dayanara	Associating personal ties & evaluating and challenging the information (Text 4)	Multiple-issue search	*Gentrification in Pittsburgh → Gentrification in Pittsburgh neighborhoods → What are the ways to help people going through gentrification? → Ways to stop gentrification*
Eleasha	Associating personal ties & evaluating and challenging the information (Text 4)	Specific issue search (gentrification in Pittsburgh)	*Gentrification → Gentrification in Pittsburgh → Problems in Pittsburgh gentrification*
Serena	Far from text: Situation-oriented reading using worldview; confused throughout	Multiple-issue search (racial issue and issues with poor people)	*Who created gentrification? → What happens with racial and gentrification? → What was the point of dividing Blacks and whites in gentrification? → What was the point of dividing Blacks and whites in gentrification in Pittsburgh?*
Tiara	Far from text: Focusing on one section of text using worldview	Specific issue search (gentrification in Pittsburgh)	*How does gentrification affect neighborhoods in Pittsburgh? → How long has gentrification been around?*

As the students read and researched the topic in a digital space, I was able to trace characteristics of students' identities as middle school students (i.e., adolescent learners) because reading and researching tasks are more similar to their classroom activities than their daily online activities. In fact, most students used similar search terms (e.g., "*gentrification in Pittsburgh*") and often arrived at the same websites, which include:

- *Pittsburgh is one of the most gentrified cities in the U.S.* (https://www.pghcitypaper.com/pittsburgh/pittsburgh-is-one-of-the-most-gentrified-cities-in-the-us/Content?oid=14381722)

- *New white flight and suburban displacement: Study looks beyond gentrification in the Pittsburgh region* (https://www.publicsource.org/new-white-flight-and-suburban-displacement-study-looks-beyond-gentrification-in-the-pittsburgh-region/)

- *The Hidden Winners in Neighborhood Gentrification* (https://www.bloomberg.com/news/articles/2019-07-16/the-hidden-winners-in-neighborhood-gentrification).

Interestingly, Serena—who had been not successful in reading texts during Task 1—showed a multiple-issue search and reading that were different from other students' online reading inquiries. Serena searched for specific issues, including racial problems in gentrification, which led her to web sources that other students did not visit, including:

- Gentrification, 'Negro Removal,' and a Housing Crisis (https://www.blackenterprise.com/gentrification-black-communities/)

- The surprising truth behind the racial dynamics of gentrification in Philly (https://whyy.org/articles/surprising-truth-behind-racial-dynamics-gentrification-philly/)

- The Divided City: An Author Q&A with Alan Mallach (https://eig.org/news/the-divided-city-an-author-qa-with-alan-mallach)

Serena's online search shows that students who must make greater efforts in text comprehension are capable of identifying critical issues related to the topic, recognizing their own

interests, and searching for those issues by understanding what to do and how to do it using an online search platform such as Google.

Moreover, when students wrote their social media posts, they used a variety of digital platform-related discourses and repertoires. The students appeared to understand the differences between various social media platforms. For example, when students chose to write a Facebook post, they knew that they should use their real names (and did so), whereas students used different names (usernames) when writing Instagram or Snapchat posts. Furthermore, students who chose to write a tweet or a Facebook post wrote paragraphs that could inform people about gentrification and included a call for action. In contrast, students who chose to write Instagram or Snapchat posts wrote one or two simple sentences that could attract people's attention with a provocative picture.

Another clear reflection of students' understanding of digital platform-related discourses was their use of youthful internet slang and hashtags. A hashtag (#) is a symbol attached to words or phrases that categorize content and track topics on Twitter, Facebook, Instagram, and Pinterest. Indeed, devising creative and interesting hashtag terms has become a standard for good writing in the world of social media. The participating students also made critical and creative use of hashtags in their writings. For example, Celeste wrote an Instagram post with a picture that shows a nighttime view of Downtown Pittsburgh, which is the most beautiful and famous part of Pittsburgh.

Figure 13. Celeste's Instagram Post

She then added a caption that says, "*The part, they tell you about lol…#gentrification #Wedeservebetter.*" In doing so, Celeste observed the traditions of Instagram writing: the picture becomes the main idea and the caption should be short and concise. She also used proper hashtags that were conspicuous enough to convey the message that she was delivering in this post. Additionally, she used internet slang ("lol") to give her post a sarcastic and cynical tone.

4.2.3.2 Active Use of Multiple Modes

While writing social media posts, the students effectively utilized multiple modes to create their messages in a digital space. When they were asked to create a social media post, the students actively searched for images to use for their writings, and they were able to use those images in a harmonious way with their written texts. They also considered the layouts of their posts as well as the locations of URL links that they would want to use in their texts. As writers, they also to use chose different mode(s), depending on the way they would like to communicate a message to a

reader (see Figure 14).

For example, in her Instagram post, Eleasha chose a picture of a street in Pittsburgh and tagged the specific location: Pittsburgh, PA. It appeared that she wanted to highlight the location itself more than to explain what was happening. She then wrote a caption with a single hashtag: *"#Gentrificationstopsnow."* Her use of the location tag, picture, and hashtag shows her approach to communicating with audiences. Instead of explaining or showing everything, she appeared to prefer delivering a simple message in the form of a hashtag.
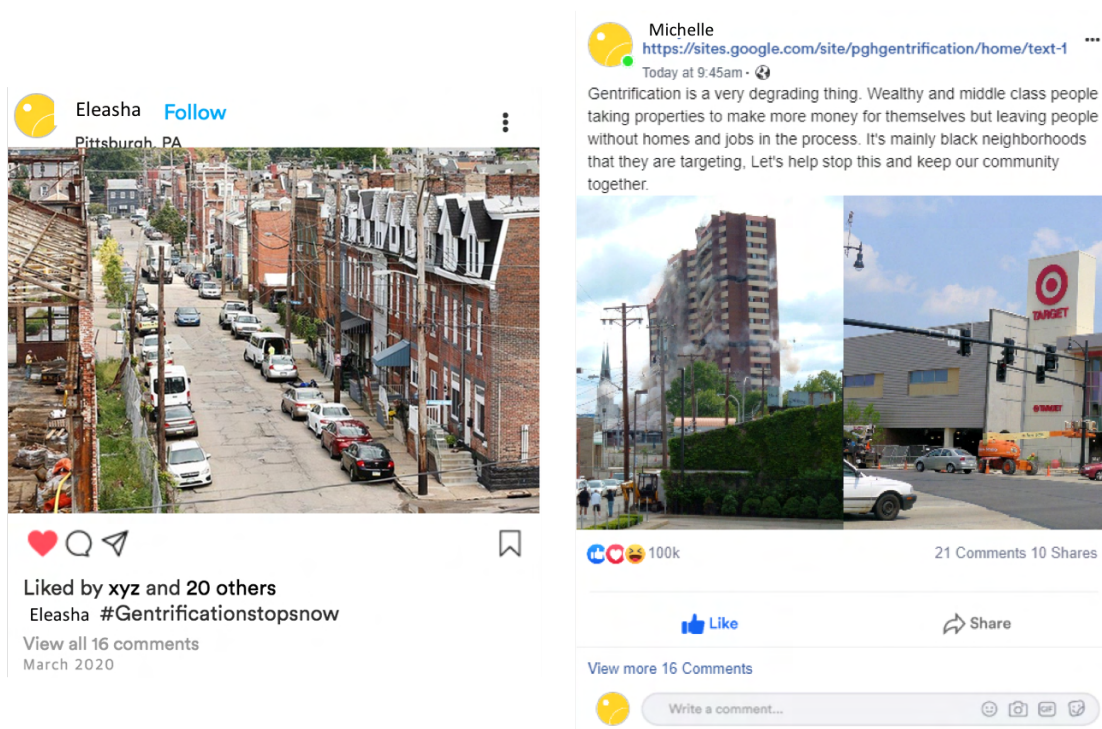
Figure 14. Eleasha's Instagram Post and Michelle's Facebook Post

On the other hand, Michelle used multiple modes, including contrasting images, written messages, and URL links to fully explain the issue of gentrification and what is happening in Pittsburgh. She deliberately chose a before-and-after image of East Liberty area that speaks for itself and provides a powerful explanation of gentrification using no words at all. In addition to

the image, she also included a paragraph of text that is closely related to the picture and provides further explanation and context.

In summary, even though the students were writing on a mock social media page that had some restrictions (it did not allow them to post video or audio), they were able to use different modes of their choice to produce and convey their messages just as if they were engaging in authentic social media post-writing.

4.2.3.3 Enactment of Online Youth Identities

In digital spaces, where people do not necessarily communicate or interact with each other face-to-face or synchronously, it is common to use online identities—which may be similar to or different from one's offline self—that cannot be identified by others. While reading and writing, the participating students also enacted online youth identities, which could be similar to or different from their offline selves.

The students' online youth identities that were similar to their offline identities appeared in their readings, especially when they wrote comments on someone else's posts. The fact that tweets or comments presented during Task 1 included people's real names and pictures may have influenced them to adopt online youth identities that more closely resembled their offline selves. The students also enacted their identities as middle school students or Black youths when responding to the comments or the posts.

In contrast, they also enacted online youth identities that did not reveal their offline identities. For example, when writing an Instagram or Snapchat post, students used anonymous usernames that did not reveal their identities. For example:

· Celeste: pooh

· Serena: babytayaboo12

176

· Tiara: Ky

Interestingly, when students adopted those anonymous usernames, their stances and writing styles changed, becoming less moderate and persuasive and tending to be more straightforward and critical.

4.2.3.4 The Roles of Digital Context in Stance-taking and Participation

Students had the opportunity to be critical in their written social media posts, which provided a context for them to engage in communication with others to deliver their opinions. Even those students considered to be effortful readers could situate themselves within a critical space by stance-taking, provoking, and advocating when they wrote a social media post.

Serena and Tiara, for instance, were considered to be effortful readers based on their reading of texts in Tasks 1 and 2. They often misunderstood the main idea of texts and became confused by long or difficult sentences and words. Nevertheless, they sought to raise their voices concerning this issue of gentrification and made efforts to bring what they read and understood to their writings.

Ky
Gentrification is forcing people to move out, it basically is the cause of SOME homeless people. Most black neighborhoods are being taken over and soon it will be all of them, where are they suppose to go? it's been going on for a while now and not many people noticed until their community was taken over. Gentrification is not a good thing, why can't everyone just live in a mixed neighborhood, I thought we passed segragation.

Like · Comment · 9 minutes ago ·

👍 4 people like this.

Write a comment ...

Figure 15. Tiara's Facebook Post

First, Tiara used a very strong voice to argue that gentrification is a problematic social issue that can result in homelessness and a resurgence of segregation (see Figure 15). At the end, she

177

sarcastically added: "*I thought we passed segregation.*" This sentence is provocative and invites people to think about racism and segregation in relation to gentrification.

Figure 16. Serena's Snapchat Post

For her part, Serena—whose writing was not as strong or critical as others'—also situated herself within a critical space by calling for attention from audiences: "*If you didn't know what gentrification is, let me tell you*" (see Figure 16). She went on to explicitly state that gentrification is a racial problem, and she chose a picture of deserted neighborhood to show the dark side of gentrification.

Thus, I found providing a range of digital contexts may enable students to become critical readers and writers by developing their opinions and sharing ideas using various identities and approaches, more so than providing them with bounded contexts for literacy practices that focus more on traditional ways of reading and writing with a set of skills and competencies.

4.3 An Intersection of Three Dimensions of Literacy Practice in a Digital Space

In this section, I discuss the intersection of three dimensions of literacy practice in a digital space and explore how the interplay of particular resources supported students' engagement as text critics to read with and against texts in a digital space (see Figure 17). I found very few cases where students performed as critical consumers or producers of information.
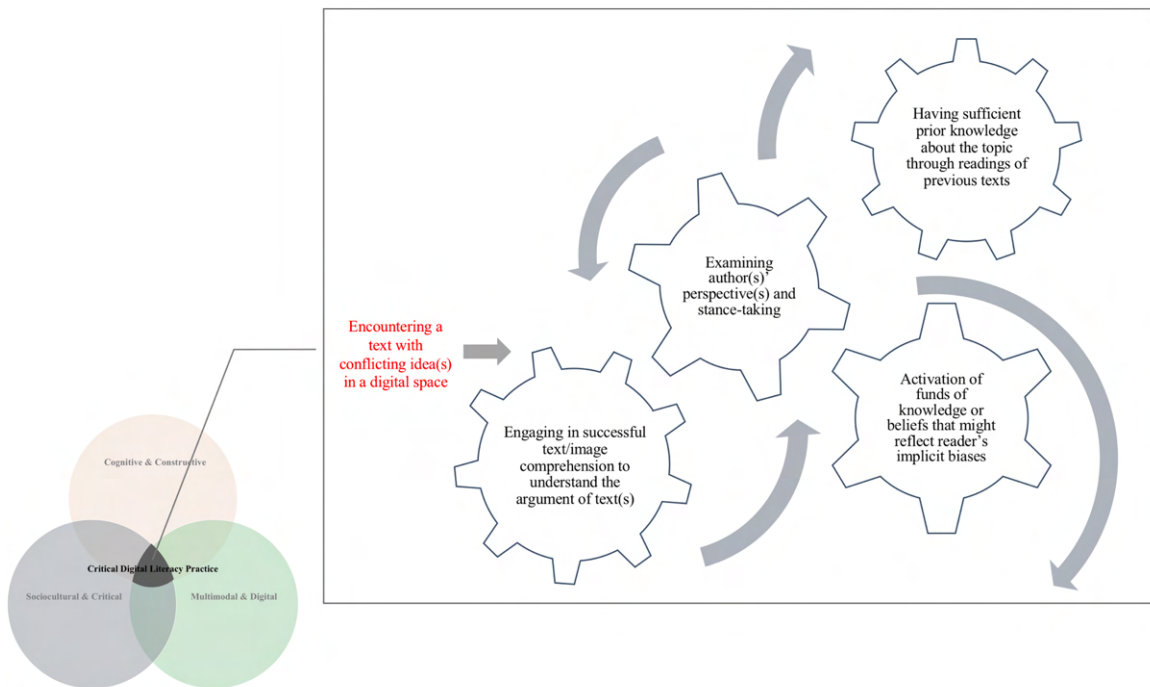
Figure 17. An Interplay of Resources that Supports Students' Engagement as Text Critics

Here, I considered students' critical digital literacy practice as text critics as a practice of noticing and identifying perspectives that may silence others and influence people's ideas through stance-taking and critically analyzing the text (Luke & Freebody, 1990). Additionally, I explored cases where students decided whether they agreed/disagreed with the ideas presented in a text or expressed that they required further information to make a decision. As a result, I found three cases where students engaged in critical digital literacy practices as text critics (Dayanara, Alicia, and Jasmine).

179

As shown in Figure 17, I found that texts that presented conflicting ideas played an important role in shaping students' critical digital literacy practice as critical consumers and producers of text in a digital space. Texts that presented a conflict, either with their personal views or with other texts, did not fully motivate students' critical reading, however, they did require students to a) engage in successful text/image comprehension to understand the argument of text, b) have sufficient prior knowledge about the topic developed through their readings, and c) examine author(s)' perspective(s) and stance-taking, and d) activate funds of knowledge or beliefs, which might reflect reader's implicit biases. For example, Serena, who searched for racial issues concerning gentrification from her perspective as a Black youth, could not successfully perform as a critical reader of information due to her lack of text comprehension and prior knowledge. Conversely, Dayanara, who spent the most time reading the texts in detail and acquired a good understanding of the texts' ideas, could not perform as a text critic as she did not examine the different perspectives suggested in the texts from her perspective. She mostly summarized and paraphrased what she had read.

However, when Dayanara read the mayor's tweet in Text 4, she did perform as a text critic while coordinating varied resources; this is described in further detail in the next section. Similarly, I found two students' literacy practices that demonstrated important ways of utilizing resources to perform as critical readers and writers—the students engaged in an online reading inquiry and social media writing activity. In the following sections, I report three cases of students' critical digital literacy practice as text critics and activists.

4.3.1 Case 1 (Dayanara –Reading against a tweet)

Dayanara's reading of the mayor's tweet demonstrated a clear example of a student's performance as a text critic resulting from an interplay of resources (see Figure 18).

Mayor's Tweet about East Liberty's gentrification →

Dayanara: Um... I don't know, um… he's saying that "East Liberty neighborhood has avoided gentrification while reducing crime" I don't know. Is that true? Because they're still like, they're still making new buildings and companies are coming in still pushing out their people out. So, I don't know if that's really true, because it's still happening. And is it reducing crime? I don't know. And "improving investment". I think it's like he's saying like it's better for companies that gentrification is happening, but for the people, it's not for the people who originally lived there. It's not going no good for them.

- Engaging in successful text/image comprehension
- Having sufficient prior knowledge about the topic
- Examining author(s)' perspective(s) and stance-taking
- Activation of funds of knowledge or beliefs (implicit biases)

Figure 18. An Excerpt from Dayanara's reading of the Mayor's Tweet

When Dayanara read the mayor's tweet, she initially postponed her judgment while she interrogated the tweet's content: "*he's saying…I don't know. Is that true?*" She then clarified her understanding of the text by rereading it. Next, she questioned the truth of the mayor's argument because she was aware, as a person who lives in Pittsburgh, that people are still being displaced while new buildings and companies are being established in Pittsburgh.

As the mayor's tweet did not explain the term gentrification or the reasoning behind his argument, Dayanara's reference to "*new buildings and companies*" and "*pushing out people*" may signify that she had prior knowledge about gentrification. She connected the term 'gentrification' from the tweet with prior knowledge about gentrification that she had developed from the previous textual examination. Through making a connection between "gentrification" and "making new buildings/companies while pushing out people," she concluded that "*it [gentrification] is still happening,*" suggesting a contrasting argument to the mayor's statement. She seemed to construct

this argument based either on her community-related knowledge or her reading from the previous text (Text 3), which introduced issues regarding East Liberty's gentrification.

Moreover, she continued questioning the reliability of the argument and made inferences regarding the mayor's intentions, stating, "*I think it's like he's saying like is better for companies that gentrification is happening but for the people it's not for people who originally lived there. It's not going no good for them*." Otherwise stated, she interpreted the mayor's tweet as an argument that was biased toward companies that come to Pittsburgh and benefit from gentrification, rather than the people who originally lived there.

Especially, I noticed that her ways of understanding the mayor's argument and stance-taking might have been informed by her beliefs, emerging perspective and prior knowledge about gentrification that have been developed through her reading of three previous texts. Below are her responses to the previous texts which shows her development of perspective and activation of her beliefs.

> Dayanara: [After reading Text 1] I don't think it's okay because, um, like you're, you're taking people from their homes like, like it's like they're forced to move and which they shouldn't just all because better or new things are happening to their neighborhoods, they shouldn't be forced to like move… out of their own home.
> Dayanara: [After reading Text 3] Although they made those changes [tech companies coming in and rebuilding houses] and a lot of people can't afford and cope with the changes as well, so people shouldn't have to be like forced and, uh, like, I don't know, like out of the community just because they can't afford it. It's not fair. And it says like in Pittsburgh, like it really affects, uh, the city, the community.
> Dayanara: [After reading comments in Text 3] I think I agree with them. Like they're, um, it shouldn't be people versus companies, it should be like equalness.
> $\rightarrow$ You should not force people out of their homes. It is unfair.
>
> Dayanara: It's relevant to me because... One, I'm a person of color and um, it affects my community and my culture because, um, it's like, like black people or many other people with low income or… um, or like people of color or… like forced to do something they don't want to do, and I don't think that should happen and it could affect me.

→ Gentrification can affect my community and my culture because I am a person of color.

→ People of color or many other people with low-income are forced to do something they don't want to do.

As a citizen of Pittsburgh, she seemed to be aware of events related to the community and the people of Pittsburgh. Additionally, she had a perspective on this topic and expressed that gentrification is not beneficial for the local community, especially community of color. In her Facebook post, she also provided a definition of gentrification using her own words and pointed out that we should care about the reality in Pittsburgh and not ignore this problem (see Figure 19). This post can be seen as a persuasion and invitation for others to participate in a discussion, which is a valuable contribution to creating a space for discussion in an online space.

Dayanara

Gentrification in today's society should be fixed, and changed. Its forcing people, with low income, or people of color out of their homes. And after they fix up buildings, cafes, restaurants, and entertainment places, those people who were originally there may not even be able to afford to live in $3,000 renting apartments. Just because of income, and wealth, people should not have to migrate from their homes in order to take care of themselves and their family. Many people could care less about the reality of Pittsburgh, and communities going through gentrification, but it still should not be ignored!

Like · Comment · 9 minutes ago ·

4 people like this.

Write a comment ...

Figure 19. Dayanara's Facebook Post

In conclusion, I could assume that based on this prior knowledge, perspective and beliefs that she had before reading the mayor's tweet, she could be confident enough to read against what the mayor wrote by saying, "*I don't know if that's really true.*" That is, this critical reading was possible as she was able to comprehend the standpoint of the author from her own standpoint with prior knowledge about gentrification and the conflicting opinions and issues surrounding the topic.

4.3.2 Case 2 (Alicia – Reading with and against texts)

Among the cases demonstrating the intersection of the three dimensions of digital literacy practice, Alicia's online reading research demonstrated how readers engage with different online texts as they interrogate and challenge the arguments or information suggested in those texts. In contrast to Alicia's reading as a critical consumer of information, most students did not consider multiple perspectives, make connections between texts, or raise questions about the content of the texts. To closely examine her approaches of engaging with online texts by reading with and against them, I refer to different stages of Alicia's online reading research during Task 2 and her social media writing.

Throughout Task 2, Alicia read both with and against the text by closely reading the current text, making intertextual connections, and fact-checking information, while using prior knowledge developed from Task 1 and sociocultural knowledge as she developed her standpoint. Alicia began her search by generating a search term—"*How is gentrification good?*"—that reflected her need to learn more about the different perspectives on gentrification. As she typed this search term, she asked the researcher "*So can I say how gentrification positive in Pittsburgh? or like negative?*" This suggested that her intention in choosing this phrase was to discover the positive and/or negative aspects of gentrification in Pittsburgh.

While reading the different sources produced by her search, she realized that she had not made her search specific to Pittsburgh. Then, she created a new search term "*What is gentrification like in Pittsburgh?*" to obtain information specific to Pittsburgh. After reading about gentrification in Pittsburgh, she continued to examine different results. She clicked on one of the results from a "People also ask" section: "*Here are the 10 cities where gentrification has been most intense, according to the study.*"
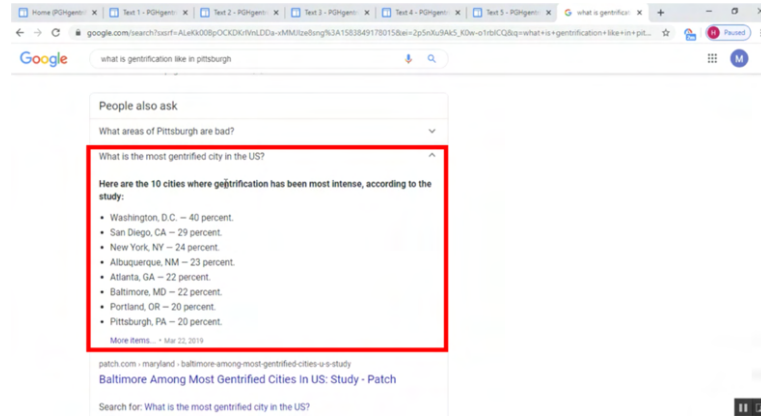
Alicia: And then.. "*the most gentrified city in the US. Here the ten cities where gentrification has been most intense according to the study*." So, Washington D.C. looks like... it's the most…

Once Alicia had discovered that Washington D. C. was the most gentrified city, she modified her search term to "*what is gentrification like in washington dc*". Then, she read the paragraph presented at the top of the search results page. From this point, she began to make intertextual connections between texts by noticing and contrasting the conflicting ideas from a critical viewpoint.

From this point, she began to make intertextual connections between texts by noticing and contrasting the conflicting ideas suggested by different texts. In particular, as she had read multiple articles claiming that gentrification had caused people's displacement and one article claiming that Washington D. C. was the most gentrified city in the US, she raised a question concerning a conflicting statement: "*it's [previous source] saying it's the most gentrified, but then it [current source] said, 'according to the study that they have not pushed low-income residents'*".

Figure 20. An Excerpt from Alicia's Searching for Gentrification in Pittsburgh and Washington D.C.

It should be noted that she observed that different texts were proposing conflicting information. One source suggested that Washington D. C. was the most gentrified city, of which 40% had been gentrified, whereas another suggested that low-income residents had not been pushed out from their neighborhoods. After reading this, Alicia returned to the previous webpage to check the information again. After Alicia had encountered and identified these conflicting pieces of information, she stated that she could not confirm any facts as she was not a citizen of Washington D.C. She concluded that there were two groups of people arguing opposing ideas and suggested that one was possibly attempting to suppress the fact that certain residents had been pushed out from their homes. This assumption about "covering up" the truth also seemed to be derived from her standpoint that gentrification is a problem concerning the displacement of people. However, she did not hastily commit to a single argument.

She wished to examine what the original text claimed regarding the most gentrified US city and she again encountered conflicting information. Pittsburgh was ranked as the most gentrified city while Washington D. C. was ranked as the eighth most gentrified city. She stated, "*So, it's like different people are saying different things.*" Although she identified contradictory

information from different sources by making intertextual connections, she was unsure of how to determine which information was the most reliable and valid. Comparing the source information may have been a useful approach in this case. One source presented data gathered by the National Community Reinvestment Coalition (NCRC) from 2000 to 2013, whereas another source was based on a study conducted in 2019. She would have further developed her reading against the texts if she had evaluated the sources of information. However, she acknowledged the importance of carefully considering the information before taking a standpoint on a topic and conducting in-depth research to reach an informed conclusion.

> Alicia: So there, there's two different sides. So, like I can't really talk about place that I've never been. I can't really notice so I can't really pick a side saying 'oh boy this is the most because and that is the least' cause you have to do a whole bunch of research probably, actually go to a poor neighborhood and see what's actually going on like get to experience it. You can't just fully understand like what you're looking at, you have to actually go through.

> Alicia: I live in the South Side. And there's like... I'm not gonna say it's not poor, but it's also not like the richest area ever, so like I heard that usually in poor neighborhoods, they'll put like Family Dollars and stuff so the rent could get higher, which I didn't know that. They had just one opened up the street, but I don't pay off the rent of course my mom does I don't really know if it went up or not but it's a good neighborhood and usually like all the house.

As an extension of her research and reading process, she searched for "*The least gentrification city*" to determine which city was not experiencing displacement of people but had a mixed community. More specifically, through reading multiple texts, she noticed that most of the information derived from Google was biased toward the most gentrified cities and the negative aspects of gentrification. Thus, she attempted to determine which were the least gentrified cities and how those cities avoided the displacement of people.

It should be noted that even though she primarily learned about the negative aspects of

gentrification and the most gentrified cities in the US, she did not lean on this viewpoint. Instead, she posed a new question of interrogation: "*I don't know. I know the most, but I don't know the least.*" She then started to search for "*The least gentrification city.*"

Searching for the Least Gentrified City in the U.S. → Alicia: It has like a whole bunch that are... what is the most gentrified in the US, but I'm trying to see where is the least gentrified because which city is like good and it don't have to worry about people kicking them out of the community.

Alicia: But they're not showing it. So it just keeps just saying, the most, what cities have been, how common it is. So I don't think people have an exact answer on which city is least gentrified cause… I'm pretty sure every city is probably gonna do something.

Alicia: But I know... I think… To me, like there's that one city or a specific place that's actually doing well, and they don't have to worry about people getting killed in the neighborhood because they'll probably do something to fix it. But if they can't afford, they probably work for more jobs, or do something about it… or other people are like … "I can't do this, I'm just gonna go somewhere else where I can actually afford and just try to keep up with what I'm doing and not try to change cause some people don't like to change".

- Engaging in successful text/image comprehension
- Having sufficient prior knowledge about the topic
- Examining author(s)' perspective(s) and stance-taking
- Activation of funds of knowledge or beliefs (implicit biases)

Figure 21. An Excerpt from Alicia's Searching for the Least Gentrified City in the U.S.

Despite her continued efforts to find information about the least gentrified city, she experienced difficulty finding the relevant information using Google. She revised her search term to "*The least gentrified in the us.*" This revision showed her high level of engagement in the reading to achieve her goal of obtaining the target information.

She eventually concluded that the reason almost all of the sources only discussed the most gentrified cities was that accurate information regarding the least gentrified city was less available. She did express an opinion that each city should be making efforts to combat gentrification—"*I'm pretty sure every city is probably gonna do something.*" She then elaborated on her perspectives of the least gentrified cities by referring to factors such as neighborhood brutality and unemployment, which were based on her community- and economics-related knowledge. I also noticed that her understanding and perspective towards the problems of gentrification—people are

worrying about getting killed and worrying about changing their lifestyles to be able to afford to live there— were developed in the course of readings during two tasks. The followings are the representative examples of her understanding of texts, beliefs, and emerging perspective.

> Alicia: [After reading Text 1] So basically, like these poor neighborhoods all these rich people were coming and building new things which is making all the houses go up. So basically, all that poor people that don't that…that aren't as wealthy are happened to be pushed out because they can't pay those prices.
>
> Alicia: [After reading Text 3] So basically, they're used to, I'm not gonna say they used to have a poor neighborhood but instead like the rent not being high and stuff. And now that Google and Target and Whole Foods, they are bringing a lot of money so, of course, when they run it, they want people who can actually afford to buy the things in their stores. And people are like not out there having built rebuilding all these buildings and apartments for three over two thousand a month, they are not affordable so they're probably starting to move out to a place that they can actually afford.
>
> → Gentrification is about wealthy people coming in and pushing out people who cannot afford the higher prices of new buildings and things in the stores.

> Alicia: I think that it should be equal and like the same so if you can't afford something then they have buildings that are cheaper than others, so even if they are not as nice or like the best building or apartment in a neighborhood, I think that there should still be houses so more people could afford it and they don't have to move out cause moving can be a lot, moving all of the furniture and stuff. So, I think that it'll be easier if they could lower down a price and keep it even amount and affordable for some people who can't afford it. And then if people want big houses and they will have other big houses down in that neighborhood, too.
>
> → It should be equal; you should provide houses for a lower price for the people who cannot afford the nice ones without pushing them out from their neighborhood.

> Alicia: [During Task 2 while reading *what cities have been gentrified*] To me, I think Chicago would definitely be gentrified because like all the crime rates and all that stuff. People would probably try to get all like this, bad neighborhoods that are poor are trying to get more wealthy ones because usually there's not a lot of shootings on those really nice streets and wealthy people, cause they don't really like that. But usually on the poorer streets there's a lot of gangs and guns and violence so people probably try to move out. Or the people that might try to come in and stop all that and make it a better neighborhood. But there's people who still don't want that to happen probably live somewhere else, and it'll

continue to happen.

> → Gentrification is related to the issues of poor neighborhoods. There are lots of crimes, shootings, and violence happening in poorer neighborhoods, and wealthy people do not like that.

Her readings and responses suggest that she emphasized the importance of harmonious living of both poor and wealthy people in a neighborhood, where both can afford their living and can be satisfied by living in that neighborhood. In addition, she also mentioned how Black people are not treated the same as and fortunate as white people, and how Pittsburgh is missing Black culture by going through gentrification, "*So that tweet [Text 5] is, he's saying that like gentrification is kicking out Black people because a lot of people know that Black people aren't as fortunate as whites and like the way they're treated isn't that the same…So, it's saying that Pittsburgh and the gentrification of Pittsburgh is kind of missing that Black culture and who they are.*" In sum, Alicia viewed gentrification as a conflicting issue of two groups – wealthy people and poor people, and she looked for a solution to have a mixed and affordable community for both.

The following excerpt shows her emerging perspective towards mixed and diverse neighborhoods well, which is not either fixed or well-defined, but still shows her point of views: the neighborhoods can be mixed and shared with different groups of people, but it can be challenging at the same time.

> Alicia: [During Task 2] Not like...or sometimes it could be mixed but it's kind of rare to have like a part where it's all rich and then you look else, then what you're gonna see is like a whole bunch of poor houses, I don't think it's how our neighborhoods are, but like you probably want to live on the street or like a block where people around you are making as much money if not more, or as at least the same amount, cause you don't want…this one, one nice house and the rest are dirty and stuff… But I think some people can still share neighborhoods, too, because the thing works even if it's… poor people not on that block, but live on the next block, or a couple blocks over so it can be like mixed and not just specifically to one group.

Although she could not find a definitive answer to her final search term regarding the least gentrified cities, it should be noted that she created opportunities to explore different issues and perspectives. These could have been developed into topics for group discussion, for example, are there any places where gentrification leads to more investment and improvement? What efforts are being made to fix the problems arising from gentrification? How can we make a mixed, diverse, and affordable community for all?

As a result of her online research, she wrote a tweet that explained a) what gentrification is and b) how it can negatively affect neighborhoods and communities. She maintained a balanced view toward gentrification, "*Even though it could be good for a community, it could also hurt it at the same time.*" Additionally, she criticized people who cause displacement, "*you can't just come to a place and want everything and everyone pay your prices.*"

Alicia
@PHGgentrification

Follow

Gentrification is not fair in certain cities. They kick poor people out neighborhoods their used to staying in or comfortable in, just to make more money and build more buildings and houses. Even though it could be good for a community it could also hurt it at the same time, so people in these communities should be careful on what their trying to bring in and take out of a neighborhood. You can't just come to a place and want everything and everyone to pay your prices, because sometimes people can't do that.

Reply   Retweet   Favorite   •••More

3:18 PM - 10 Mar 20 · Embed this Tweet

Figure 22. Alicia's Tweet

After she had completed her writing, she shared her justification for the tweet, "*I basically said, it should be fair what they're doing and what they're bringing into community cause sometimes it can be positive, but to me, in this case, it's negative because, like I said, not everyone*

191

can pay those certain prices or adjust to a certain community, if it's used to something you can't expect everything to be changed like that and just to be used to it. It might take a while." She asserted that gentrification could have a negative impact and that residents and communities should be taken into consideration as well as the financial aspects.

Alicia's research process reflects her understanding of textual ideas from multiple sources, as she observed important facts regarding gentrification, and her critical understanding of conflicting and biased information presented online. Through engaging with the texts, she was able to develop her knowledge of gentrification and thus her opinion and perspective of it. This was demonstrated in her writing which was both informative and critical.

4.3.3 Case 3 (Jasmine – Reading images)

"*I like to look at the pictures cause they have meaning. So, it's just like reading about something.*"

A third student, Jasmine, also demonstrated intersections of the three dimensions of literacy practice in a digital space. Like Alicia, Jasmine searched for multiple opinions and perspectives, made intertextual connections, and raised critical questions as she engaged in online research using her prior knowledge and perspectives. Unlike Alicia, however, Jasmine focused on reading images instead of written texts and frequently expressed her feelings by associating herself with people in the pictures. After entering the search term "*gentrification,*" she immediately clicked on the Images tab and began to examine the images.
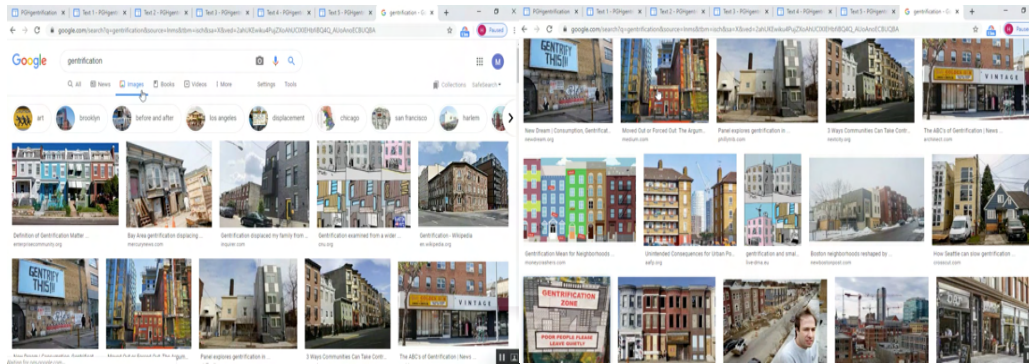
Jasmine: It's like, it's kinda creepy. Kind of? Like how they're like displacing everyone and building like a house that's expensive. And it's really just like how it already was. [Scrolling down] Like that whole streets might've been demolished and rebuilt. [Scrolling down] And like small businesses being pushed out to build like apartments…where have like stores at the bottom.

Jasmine: So, it said Pittsburgh is the eighth? Then who's the first?

Searching for the Most Gentrified City in the US →

Jasmine: Washington D.C. I would never expect that. Cause it's like I went there one time, it was like a diverse, so like I wouldn't expect nothing like that coming from Washington.

Jasmine: I understand New York and um, Atlanta, (you went there?) No, I seen around? But I haven't went there. Because in New York, there's like, I read something about it, maybe a week ago maybe? It was saying like Harlem and all that used to be like the Black parts and then how they are now like rebuilding everything, it's like changing around. (You read it like online? Like do you remember where?) No... I think it was somebody's post..

- Engaging in successful text/image comprehension
- Having sufficient prior knowledge about the topic
- Examining author(s)' perspective(s) and stance-taking
- Activation of funds of knowledge or beliefs (implicit biases)

Figure 23. An Excerpt from Jasmine's Searching for the Most Gentrified City in the U.S.

As she scrolled through the images of buildings and neighborhoods, she expressed negative emotions toward them, "*It's kinda creepy.*" By briefly examining the images, she was able to connect what she learned during Task 1 to the images. As the images did not contain any written information, what she mentioned regarding displacement, demolition, businesses, and apartments all seemed to be based on her prior knowledge and the standpoint she had developed from Text 1.

Jasmine: [After reading Text 1] So like I think I like this one cause it like more explains it and like how people of color are being like moved away because of the, um, situations and like they're low income. (Yeah. How would you react to this?) Um, it made me like think about it more. Like it adds more to it. (How do you feel about it?) Um, I feel like it's kinda

193

messed up. Because the people who aren't making money, you gotta move to bad places like, and it's probably getting crowded, and all the rich, white people got like, like have to pay a higher rent and stuff.

→ It is a messed-up problem how people of color who are low-income people are being moved away to bad places unlike white people.

Jasmine: [After reading Text 3] I understand. I understand as well. Cause I've been there [East Liberty] and seen. Um, I feel like it was a good and bad change cause like stuff again, like, like stuff getting demolished wasn't so good, but it's also getting like rebuilt into something that's needed.

→ Gentrification was a good and bad change for East Liberty.

She then asked, "*So, it said Pittsburgh is the eighth? Then who's like the first?*" This query likely arose from her reading of Text 3 in Task 1. She generated a new search term "*what is the most gentrified city in the us*" and read the first text at the top of the results page—*Here are the 10 cities where gentrification has been most intense, according to study*. This was the same results page that Alicia had landed on. However, unlike Alicia, who had continued to search for "*what is gentrification like in washington dc*,"

Jasmine critically evaluated the information suggesting that Washington D. C. was the most gentrified city by drawing on her personal experience. She expressed her astonishment, stating, "*I would never expect that.*" It seemed that her impression of Washington D. C. did not align with the problems of gentrification that she had learned of—"*I wouldn't expect nothing like that coming from Washington.*"

In addition, her reasoning for why she would not expect Washington D.C. to be the most gentrified city suggested that she considered the issue of gentrification as opposed to the idea of diversity — "*Because it was diverse, so I wouldn't expect nothing like that coming from Washington.*" This judgment may have come from her reading of previous texts—how white people and Black people are divided in the process of gentrification.

194

I found that she did not simply absorb information from the text but attempted to determine why other cities, such as New York and Atlanta, were ranked highly by utilizing her prior knowledge of those cities. In contrast with her opinion on Washington D. C., she claimed that she could understand why those cities were ranked as the most gentrified cities by activating her knowledge developed from her out-of-school online reading. In particular, she activated her prior knowledge developed from her previous reading about New York's Harlem and how it was originally a Black community but has recently been rebuilt and restructured. This example is noteworthy because, at the time when she read about Harlem, which was a week before this study was conducted, she did not know the term "gentrification" and may not have fully understood the events that had occurred in Harlem. By learning about the process of gentrification throughout two tasks, she was able to relate what she had read to issues of gentrification. By connecting her previous reading about changes in Harlem to new information claiming that New York is the third most gentrified city, she understood why New York could be experiencing gentrification.

Additionally, as she studied the images, she noticed important ideas and made inferences about the images using her prior knowledge and pre-established perspectives on gentrification. She also associated herself with the people in the pictures. She became attentive to the critical messages that the images contained regarding racism and the displacement of communities of color. Among her close reading of eight images, I found one noteworthy example where she observed, interpreted, and interrogated information suggested by the image, which presented an idea that was in opposition to her own standpoint. She thus decided to investigate this image in further detail.

Figure 24. An Excerpt of Jasmine's Reading against Image

The image that she chose featured a group of people protesting with a sign that read, "*Gentrification is Racism.*" When she encountered this image as she was scrolling down quickly, she paused and scrolled up again to read this particular image: "*Oh, I see something.*" Interestingly, she suggested that gentrification is not racism but a problem for low-income residents.

Her justification for why she did not consider it a racial problem was based on her understanding that gentrification was more closely related to income than race. She also argued that there are different ethnic groups with low incomes and that poverty and financial hardship are not specific to certain ethnic groups; this argument seemed to be based on her knowledge and belief of broader cultural groups. This also indicates that she was not simply explaining what she

196

saw in the picture but acknowledging important ideas and how they interacted with her own viewpoint.

When considering the fact that she continued to associate herself to the people of color, especially Black people, during Task 1, I could assume it might have been her understanding of racism, which made her argue that gentrification is not about racism. In particular, when she watched a video from Text 5, she stated: "*I understand what he's saying… I related to that one because I'm Black, too… I understand where he's coming from…*"

> Jasmine: [After watching a video from Text 5] Okay. I understand what he's saying. Like Black people came here and like the whites are trying to take over kind of and change everything. I relate to that one because like I'm Black too, and like I understand where he's coming from. Okay. (How do you feel about that?) Um, I liked it. (You liked it?) Like, I would, I would "Like" [Click on a Like button] it.

I could not find an exact answer to why she argued that gentrification is not related to racism and what is her perception about racism in general, but I could assume that her implicit bias about racism and races might have been impacted her reading and understanding of the issues.

As a result of her reading of several images, she wrote a Facebook post with an image of a banner that read, "*No UGLY expensive 5 STORY CONDOS! AFFORDABLE (attractive) NOT high rise HOUSING for FAMILIES, Working people, the COMMUNITY!*" She added her location as East Liberty with a short message: "*This needs to stop.*"

Figure 25. Jasmine's Facebook Post

Jasmine stated regarding her writing, "*So, it's basically saying that people can live there but we don't always need apartments, expensive apartments for rich people, and people need to be more of a like community and it's not always about money and who has the best house.*" Her explanation suggested that she values community and the people living within a community, rather than expensive apartments and wealth. This standpoint toward gentrification was developed consistently throughout her reading during Task 2 and supported her reading of the images.

Overall, Jasmine's literacy practice is a good example of how students can learn about the different issues surrounding a topic from images using one's prior knowledge and perspectives. She closely examined more than ten images and encountered different issues such as displacement; development; racism; issues in New York, Portland, and the Bay Area; and their impact on communities of color. I found that studying images was her unique way of understanding and learning about the issues surrounding a topic and of making intertextual connections and critical

judgments about text (image) information based on her own perspective. It should be noted that not only prior knowledge and personal perspective supported her understanding of the images but her reading of the images also supported her deeper understanding of the topic and stance-taking.

In conclusion, I found an interplay of resources that worked together for students to become critical consumers and producers of information. It takes more than simply comprehending texts or taking stances. To become text critics in a digital space, students must have a successful understanding of text ideas and augments of author(s) as they engage in close reading, intertextual linking, and critical evaluation. Moreover, it is important to have sufficient prior knowledge about the topic and develop standpoints while examining multiple perspectives on a topic. Last but not least, I found that students' use of funds of knowledge or beliefs could also support their critical readings of texts even if it might reflect their implicit biases.

5.0 Conclusions and Implications

In this study, I sought to describe the cognitive and sociocultural resources that middle school students activated and utilized during their examination of a current social issue in a digital space. I also sought to explain some distinctive shared digital literacy practices as they coordinated different resources.

The research questions guiding my study were:

Research Question 1. *What kinds of cognitive and sociocultural resources do middle school students activate and employ as they examine a current social issue in a digital space?*

Research Question 2. *In what ways do middle school students coordinate cognitive and sociocultural resources to examine a current social issue in a digital space?*

The findings of this study revealed that the students activated a variety of resources during critical digital literacy tasks, coordinated those resources in three dimensions of literacy practice in a digital space (cognitive–constructivist, sociocultural–critical, and multimodal–digital), and acted as text critics and activists through the interplay of various resources. In this chapter, I draw upon the findings both of this study and existing research, identify and present discussion points, and explore how these findings contribute to the research literature regarding cognitive and sociocultural perspectives toward adolescents' literacy practices. I conclude by suggesting how the findings of this study contribute to the field, particularly concerning education researchers, teachers, and classroom teachers.

5.1 The Collaborative Relationships between Readers' Cognitive and Sociocultural Resources in a Digital Space

The findings show that students activated and employed both cognitive and sociocultural resources throughout their engagement in critical digital literacy tasks, as anticipated by the theoretical framework of Critical Digital Literacy Practice developed by the researcher. In particular, this study's results underscore the collaborative roles of cognitive and sociocultural resources that students bring to their critical digital literacy practice, and how the interplay between them can motivate students to be critical readers and writers. I found that being a critical reader and writer require students to not only view power relations and ideological issues with a critical eye, but also to examine a text with sufficient prior knowledge and sophisticated reading abilities and to identify their viewpoints. Their developments of prior knowledge and viewpoints were constructed through their engagement in three distinct dimensions of literacy practice in a digital space, namely: cognitive–constructivist, sociocultural–critical, and digital–multimodal.

First, the students engaged in the cognitive–constructivist dimension of literacy practice to comprehend the meaning of a text, build their knowledge about the topic, and examine multiple perspectives, issues, and situations. In this dimension of literacy practice, the students utilized various reading strategies as well as their prior knowledge to understand the main ideas of texts as identified from previous studies on online reading research (e.g., Cho, 2014; Coiro & Dobler, 2007; Zhang & Duke, 2008). However, with more difficult texts, students' meaning-making was sentence-level, rather than holistic. The participating students relied on single-text comprehension processes, particularly during Task 2, in which they had to read unexpected, complicated, and wordy online resources that typically exceeded their reading level. There is a lack of research that has considered the readability or grade level of online sources, but List and Alexander (2017)

conducted the Flesch–Kincaid grade-level test for all online sources included in their text selection (blog post, analysis essay, newspaper, public opinion poll, Twitter, Wikipedia entry), which ranged from 9.6 to 13.8, suggesting that all texts can normally be read without much struggle by undergraduate students. To some extent, this result also suggests that it will be challenging for young students in elementary and middle school to read online sources with no difficulties. Nevertheless, without considering reading levels, much of the previous research on young students' online reading inquiry has focused only on the absence of source evaluation (Eagleton & Guinee 2002; Sutherland-Smith 2002) and students' superficial engagement with content: "shallow, random, and often passive interactions with text are in direct contrast to the active, strategic, and critical processes of constructing meaning" (Coiro, 2003, p. 458). More attention must be paid to the challenges that young students can encounter while searching online, because sources of information are challenging to analyze, often target higher reading levels, and may also be poorly written and organized (Baildon & Baildon, 2012).

I also found that students rarely engaged in multi-text comprehension during either of the tasks, but it should be noted that they used prior knowledge developed from the previous texts in Task 1 to comprehend a new text that they encountered during their online inquiry in Task 2. There were notable instances in which students activated sociocultural knowledge to enhance their text comprehension. Thus, unlike traditional reading to which readers could apply only their pre-existing prior knowledge, online reading can provide opportunities for students to develop a new set of prior knowledge as they search for more information about a novel topic.

Second, the students actively developed their standpoints and perspectives, questioned texts, and participated in discussions or conversations in a digital space in a sociocultural–critical dimension of literacy practice. In particular, they made judgments about the text from their

standpoint as Black youths and Pittsburghers while reading tweets about the gentrification of their city. Additionally, certain words or sentences from the texts encouraged the students to situate themselves in a critical space. Previous studies on young students' evaluations of the credibility and argumentation of online sources focused mainly on whether participants could justify the author's expertise in an online source (Coiro et al., 2015), recognize biased or misleading information (Miller & Bartlett, 2012), question the credibility of commercial sources (Kiili et al., 2018), or analyze the argumentative content of social media—a written blog text and a YouTube video (Marttunen, Salminen & Utriainen, 2021) as a form of an assessment. However, it is important to understand that source authority is a socially constructed idea (Walsh-Moorman & Hovick, 2021). In light of this study's finding that the participants drew on funds of knowledge and identities as Black youth and community members while reading multiple texts and perspectives, there should be more research on students' evaluations of source and argumentation that considers readers' socioeconomic backgrounds and the contexts that surround them.

I also found that cognitive activities played an important role in the students' critical examination and participation. It should be noted that a range of cognitive activities—from observing and summarizing to making intertextual connections—supported students' critical judgment of the texts. A recent study with elementary school students demonstrated the intersection of vocabulary skills, prior knowledge, and life experiences when the students' evaluated the authority of a source (Walsh-Moorman & Hovick, 2021).

Third, the participating students engaged in the digital–multimodal dimension of literacy practice while taking advantage of a digital space that provided them with a context for their active critical reading and writing. I found that the students were able to use a variety of digital platform-related discourses and repertoires when they read pre-selected sources, searched on Google, and

wrote a social media post. Additionally, as they wrote their social media posts, the students utilized multiple modes in effective ways to create messages within a digital space. Writing a social media post provided a context for them to communicate and discuss with others and deliver their opinions from a critical standpoint. Students' writings showed aspects of digital activism, described by Amin (2010) as: "how citizens can use digital tools to effect social and political change" (p. 64). With the development of social media, digital activism has become a significant tool to confront social injustice as demonstrated by recent movements such as #BlackLivesMatter and #MeToo (Amgott, 2018). The participating students demonstrated several forms of digital activism, including hashtag activism and digital storytelling to raise public awareness (e.g., Bakardjieva, Svensson, & Skoric, 2012; Stornaiuolo & Thomas, 2017). Therefore, I found it important to provide different digital contexts where students could use various modes of communication and enact their online youth identities as they participated in discussions as active readers and producers of information.

Finally, this study demonstrated how the interplay of resources supported students' performances as critical consumers and producers of information in a digital space. From three cases of students' critical digital literacy practices, I found that students' sophisticated understanding of texts, topics, and perspectives from close reading, intertextual linking, and critical evaluation played a significant role in their critical reading and writing as text critics. Additionally, activating funds of knowledge and stance-taking while examining multiple perspectives was equally important. For example, Dayanara's literacy practice in reading the mayor's tweet demonstrated how one may read against a social media post that presents a biased argument regarding a current social issue. Furthermore, Alicia's literacy practice revealed her varied use of both cognitive and sociocultural resources to read with and against texts in an online

setting. Throughout her online research, Alicia searched for multiple perspectives using sociocultural knowledge for text comprehension and making intertextual connections for fact-checking. I found Jasmine's literary practices to be noteworthy due to her attention towards multiple perspectives and close reading of images using her prior knowledge and perspectives. Specifically, I considered her literacy practice to be a good example for exploring how young readers who are accustomed to images in their daily use of the internet—particularly in social media—may read, understand, and critically evaluate information presented in images to understand a social issue.

I consider the three cases of students reported in the previous paragraph as representing the early stages of the trajectory when middle school students begin to read against texts as text critics. Most students were unable to engage in critical reading by reading against or interrogating texts, which would require them to ask questions about the reliability of information, authors' intentions or perspectives that might reflect certain interests and values, and voices that might have been silenced in texts. It may have been the case that other students were also on the way to becoming text critics but needed more time to read and learn about the topic and different perspectives. To disagree with or challenge texts written by adults, students would need not only ample time to read and understand the topic and the argument, but would also need to draw upon their self-confidence by having sufficient knowledge and developing their standpoints. There should be more support for students to act as critical consumers and producers of texts through critically analyzing texts.

5.2 The Importance of Considering Context and Modality in Digital Literacy Practice

It is vital to consider multimodality in a digital space, where different modalities of text exist (e.g., Kress, 2003). Evolving perspectives on literacies consider not only written language that conveys information, but also alternative modes such as images, colors, and shapes as important tools for sophisticated meaning-making (Kress, 2003; New London Group, 1996; Sheridan & Rowsell, 2010). Research suggests that students actively use and coordinate multimodal tools and resources to represent information, knowledge, and perspectives in creative ways (Jewitt, 2005; Walsh, 2007). A recent study of elementary students' learning about a complex topic through multiple multimodal internet texts also showed that modality had a strong influence on student's beliefs about the topic—it was found that they defended the views presented in the videos more than those in texts (Salmerón, Sampietro, & Delgado, 2020). This view of multimodal literacy is important when analyzing varied web sources, including social media, because this perspective allows for the consideration all conceivable sources of communication within a message, including signs, symbols, emoticons and images, for their role in constructing the message's meaning (Talib, 2018).

I found that all students had a good understanding of different digital platform-related discourses and used multiple modes in creative ways. Students were capable of utilizing multiple modes such as images, text, hashtags (#), and hyperlinks in writing social media posts. Jasmine and Celeste engaged in reading images during Task 2, which indicates the possibility for successful learning using images. Jasmine read various images while engaging in her online research by clicking on the "Images" tab on Google. She did not simply skim or briefly examine the images; rather, she made inferences or claims about the images that she chose to examine.

The results from this study also indicate that the interactive context of literacy practice, which can be represented by a digital space, was significant for students' performances in critical digital literacy practice. The participating students engaged in reading in different ways when they encountered interactive, communicative texts such as comments, tweets, and videos. Johnson, Bass, and Hicks (2014) argued that "Facebook's non-hierarchical and interactive platform seemed to serve as a scaffold for students' development from passive consumers to producers" (p. 45). Furthermore, studies have been conducted to explore how Twitter may serve as a space to create counter-narratives and reimagine group identities through the use of hashtags to connect topics and conversations and to engage in real-time discussions (Bonilla & Rosa, 2015). Similarly, I found that the interactive contexts for reading and writing that the digital space provided in this study promoted students' critical awareness of the topic and participation in civic engagement.

Furthermore, by reading and writing in multiple modes, the students were able to express their opinions effectively while enacting their multiple identities. The students enacted various youth online identities while reading and writing that were similar to, or different from, their offline selves. For example, some students used online usernames that gave them anonymity when writing their social media posts. Today's young people, particularly those in marginalized groups, retell their own history through social media and other types of digital affinity groups (Thomas & Stornaiuolo, 2016), which can prevent adults from dominating narratives surrounding adolescent discussions of issues like gentrification (Kinloch, 2010). In conclusion, I found that different textual modes and media can benefit students' ability to actively engage and communicate in a digital space.

5.3 Activism Towards Social Justice in Black Female Students' Digital Literacy Practices

Although there is a rich body of literature in educational research regarding digital literacies in K–12 classrooms (Castek & Beach, 2013; Hutchinson, Beschorner, & Schmidt-Crawford, 2012; Price-Dennis, Holmes, & Smith, 2015; Vasudevan, Schultz, & Bateman, 2010), there is still limited knowledge concerning the goals of social justice, particularly those that center around youth voices (Price-Dennis, 2019). Scholarship has found that middle school students are capable of discussing social issues like racism and other injustices while demonstrating a critical understanding of the inequalities that exist in society (Rogers & Mosley, 2006; Stribling, 2014).

Previous studies on Black female students' literacy practices have also found that their literacy practices are often informed by their historical legacies of resistance to social inequality and dehumanization (Muhammad & Haddix, 2016; Richardson, 2007). These studies have defined and contextualized Black female students' literacy practices as social practices that reflect cultural power dynamics within texts. I found that Black female students' digital literacy practices can support their exploration of positionality and social action to achieve social justice and criticality. McArthur (2006) also stated that the focus on the experiences of Black girls through critical media literacy allows Black girls to counteract the stereotypes with real tales of Black girls.

Here, I consider social justice and criticality in a digital space as:

- Creating a community of conscience, which ensures that students' voices, opinions, and ideas are valued and respected.
- Committing to challenging social, cultural, and economic inequalities.

In this study, the students (all Black female urban youths) engaged in digital literacy practices that embodied their critical stances and supported the juxtaposition of an unjust social system; they engaged with digital texts that motivated them to become active learners. When they

read about injustices toward Black communities, people of color, and poor neighborhoods in Pittsburgh, they raised their concerns as members of a minority group while recognizing the social and racial problems involved with gentrification. They also actively participated in social conversations by writing a social media post using multiple modes of communication that aimed to raise people's awareness and invite others to take action.

5.4 Implications and Limitations

This study has multiple implications for theory, research, and practice that can suggest a set of recommendations to education researchers, teacher educators, and classroom teachers. Nevertheless, there are also few limitations to this study, which I will describe in detail later in this section.

5.4.1 Implications for Theory, Research, and Practice

With empirical data that provides a rich understanding of students' critical digital literacy practice, I believe this study has several implications concerning resource-based (asset-based) approaches in literacy education.

Implications for theory and research

This study supports our ongoing understanding of students' critical digital literacy practices that echoes Freire's (1970) critical pedagogy. Multiple strands of research have addressed critical digital literacy (e.g., Janks, 2000, 2018; Luke, 2012); however, given the rapidly evolving nature

of digital literacy practice in younger generations, efforts must be made to gain a better understanding of critical digital literacy in today's complex digital environment (Pangrazio, 2016). James Damico and his colleagues (e.g., Damico & Baildon, 2007; Damico, Baildon, & Panos, 2020) are among the few scholars who explore critical digital literacy work in classrooms with a contemporary issue of interest (i.e., climate change) that centers on examining the relationship between language and power (Luke & Freebody, 1997). Nevertheless, previous studies on critical digital literacy practice were mostly rooted in a specific model of literacy or reading (e.g., Durrant & Green, 2000; Green, 1988; Luke & Freebody, 1997) and tended to focus on describing observable processes or practices—that is, in what ways digital literates performed when they engaged in critical literacy practices. In addition, the importance of educators' roles has been often emphasized without explicit directions or explanations: "as educators, it is our job to give students the skills they need to engage meaningfully with texts. They need to be taught to reason, and they need to have sophisticated literacy skills to engage with and interrogate texts" (Janks, 2018, p. 28). However, it has not been clearly explained what those sophisticated literacy skills are and how they are practiced, and no concrete examples have been offered.

My conceptual framework, in which I conceptualized the theoretical construct of critical digital literacy practice with readers' cognitive resources and sociocultural resources in three distinctive dimensions—knowledge, activity, and disposition—can provide a new insight to theory and research to clearly distinguish the dimensions and resources that readers may bring into their critical digital literacy practice. Additionally, findings from this study suggested a representative example of an interplay between cognitive and sociocultural resources that can promote students' critical digital literacy practice. In particular, to act as text critics and activists, students need to have a sophisticated understanding of texts, topics, and perspectives from close reading,

intertextual linking and critical evaluation, as well as an activation of funds of knowledge and stance-taking while examining multiple perspectives.

Furthermore, this study has important implications for how we conceptualize and foster adolescents' reading development by reflecting on readers' voices, perspectives, and identities as they engage in discussions of social justice issues. As Damico and Baildon (2007) suggested for the future research, it is necessary to expand the critical aspects of online reading that can consider what readers bring to texts (e.g., beliefs, values, biases). Although some previous studies have considered students' academic backgrounds and subject interests when closely examining their digital literacy practices, many have not considered individual readers' sociocultural backgrounds and perspectives. When engaging in digital literacy practices, individual readers can read, think, and communicate in different ways due to their varied personal and cultural backgrounds. Those backgrounds can also impact their meaning-making process and stance-taking during online reading. I believe that this study's results guide us toward a broadened conceptualization of the reader's identity when considering different categories of identity such as race, gender, and cultural group (e.g., youth culture). There is much to be explored regarding how students' identities and understandings of the world impact their thinking and reading when engaging in an examination of social issues in a digital space.

Thus, as we theorize and study students' critical digital literacy practices, questions that are relevant to the individual reader's identity and sociocultural background should also be considered:

· What kinds of sociocultural backgrounds and identities may be tied to specific aspects of critical digital literacy practice, and how?

· How do pre-established perspectives and prior knowledge impact students' text comprehension and stance-taking in critical digital literacy practice?

Literacy instruction that considers students' resources, developed from both in-school and out-of-school contexts

As a result of this study, I found that students' in-school and out-of-school contexts and identities greatly affected their reading and writing. This study suggests that when selecting topics, texts, and instructional approaches in the classroom, there should be greater consideration for the sociocultural background of readers, rather than for their competency and skills in reading comprehension. In particular, while working with a contested topic (i.e., gentrification) for critical digital literacy tasks, students actively drew upon their out-of-school experiences, funds of knowledge and identities, which broadened their critical understanding and examination of multiple texts and perspectives. Thus, educational research should be undertaken from an asset-based approach, evaluating and resisting inequalities from the viewpoints of those who are affected by them (Stornaiuolo, 2017).

In this regard, culturally relevant pedagogy (Ladson-Billings, 1994) and culturally sustaining pedagogy (Paris, 2002) can provide pedagogical approaches for both pre-service and in-service teachers from this asset-based stance. Adolescent literacy educators should understand and take into consideration their students' identities, resources/assets, and sociocultural backgrounds when implementing instructional programs and approaches. Geneva Gay (2015) argued that "the education of racially, ethnically, and culturally diverse students should connect in-school learning to out-of-schooling; promote educational equity and excellence; create a sense of community among individuals from diverse cultural, social, and ethnic backgrounds; and

develop students' agency, efficacy, and empowerment" (p. 49). Gay also defined culturally responsive teaching as "using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (2010, p. 31). That is to say, in literacy classrooms, teachers should utilize topics, texts, and activities that are relevant to students by promoting educational justice and students' agency, efficacy, and empowerment.

One challenge that teachers may face is how to connect culturally responsive pedagogy with digital literacy. To honor the voices and experiences of youth, scholarship has underscored the abundance of resources and experiences brought into their digitally mediated literacy practices (Garcia, Mirra, Morrell, Martinez, & Scorza, 2015; Lam & Rosario-Ramos, 2009). Some questions and approaches that pre-service and in-service teachers can consider and discuss in designing their digital literacy instructions are:

- How can we make efforts to foster learning "about, through, and with" technologies that centers on culturally responsive teaching?

- How can culturally relevant pedagogy that blends technology and equity be developed and implemented in literacy teaching and learning environments?

Utilizing digital environments that are closely related to students' daily lives may be one way to foster students' agency in learning and discussions. For example, a classroom teacher can create a hashtag with the class that they can all follow for classroom conversations. As students watch the presidential debates at home, they could share their thoughts and post their comments through social media using the class hashtag. They can later use their tweets or posts to write essays, poetry, or public speeches.

Literacy instruction that promotes students' new literacies and civic engagement

Overall, my findings and implications contribute to the body of literature on students' critical digital literacy practices that will influence digital literacy education in secondary schools. Literacy educators must consider students' needs and expectations as well as the new textual environments that are constantly changing and evolving. Literacy educators who develop instructional programs for teaching literacy should determine how they can provide proper literacy education for today's youth, who are growing up in a world of new literacies (e.g., Coiro, Knobel, Lankshear, & Leu, 2008; Street, 1997, 2003). The National Council for Teachers of English (2019) also suggests a new definition of literacy in a digital age that includes effective participation in a networked society; exploration of a range of texts/modalities; advocacy for equal access to texts, tools, and information; as well as recognition of learners' multilingual literacy identities and cultural experiences.

That is, in our literacy classrooms, more authentic contexts of reading and writing in a digital space should be considered (e.g., participating in online communities, finding information about social issues) that reflect the complexity and demands of the new textual environment and digital society. Additionally, it becomes more important to read against, question, and challenge texts because of the problems related to online sources such as credibility, reliability, fake news, and unclear authorship. I believe this study offers a detailed account of students' critical digital literacy practices regarding a current social issue. The results can inform future research and help design literacy instructions to help students become critical consumers and producers of knowledge in a digital space.

First, to fully utilize the strengths of digital textual environments, we must design literacy programs that do not require that students find one correct answer; rather, we should support them

to read, write, and research a topic to better understand how injustice affects society. Based on a review of classroom practices that promote critical literacy, Behrman (2006) found that literacy practices in classrooms in which students conduct research projects of their choice and take social actions can confirm the role of reading and writing as "ways of being in the world" (Gee, 1992, 2000). Similarly, studies have demonstrated how to center the experiences of young people while pushing back on deficit framing, examining activism among youth through the creative utilization of new tools and networking platforms (e.g., de Vreese, 2007; Xenos, Vromen, & Loader, 2014).

In addition, Price-Dennis and Carrion suggested that the process of creating collaborative social justice inquiries with digital tools "required each student to process multiple streams of data, make decisions about its usefulness in their argument, and make connections to other information presented by peers" (2017, p. 193). Thus, topics for reading and writing should address students' concerns, perspectives, and interests so that we can foster a community of learners who concern themselves with the world around them, learn with others by sharing ideas, and initiate change in digital spaces.

5.4.2 Limitations and Recommendations for Future Study

In this section, I will present some limitations of this study and provide recommendations for future research.

First, this study examined only eight students within one middle school, and this small sample size limits the generalizability of the findings. However, as I examined students' verbal protocols as primary data, small-scale data collection and analysis were useful in conducting a more detailed analysis and description of the participating students' critical digital literacy practices. Future studies should involve students of different ages, genders, and cultural and ethnic

groups to broaden our understanding of students' critical digital literacy. I also suggest that a long-term study should be conducted that observes and examines different aspects of digital literacy practices that students engage in, both inside and outside of school settings.

Additionally, the topic of this study (i.e., gentrification) was chosen by the researcher and was a novel topic to the students. In the students' responses to the initial questionnaire, there were different social issues indicated by younger students as topics that they were interested in and wished to share ideas about. One of the results of this study showed that proximity to the topic plays an important role in students' critical reading and thinking. The results of this study might have been different if the topic had been derived from the students' interests. However, care should be taken when bringing social topics and issues to literacy classrooms to avoid misunderstandings. Then, we should carefully discuss how we can incorporate different social issues in K–12 classrooms while protecting (and not traumatizing) students.

Finally, there were materiality constraints in this study, as it was designed by the researcher and conducted in the school building. This study could not fully provide the freedom of choice for the students to use their preferred device (e.g., student-owned laptops, mobile phones), their own social media accounts, or access their frequently visited websites and online communities. Indeed, the most frequent and familiar digital literacy practice that the students engaged in daily was spending time on different social media platforms; however, this study could not fully address those aspects of digital literacy practice. We must find ways to appreciate students' experiences and engagement in technologies and address the Common Core State Standards in literacy classrooms.

In conclusion, I argue that as literacy educators, we must alter the current decontextualized literacy instruction and assessment and adopt a new direction that appreciates the diverse resources

and assets that today's young readers bring to literacy classrooms. Literacy educators must understand their students' ways of reading and thinking about social issues in a digital space and should consider the multimodal literacy behaviors and equitable participation of individuals, families, and communities.

Appendix A Student Questionnaire

1. How much time do you usually spend using the internet in one day (including both laptop and mobile phone)?

2. What Social Media do you usually use?

3. Have you ever posted or commented on the Social Media?

A. If yes, what kinds of posts or comments do you usually post on the Social Media?

4. What are the social issues, you are currently interested in, that are happening in the United States?

A. How did you hear about these issues? (Choose multiple if applicable)

B. Have you ever posted or commented about any of these social issues on the Social Media? If yes, what kinds of comments or posts have you posted on the Social Media?

5. What do you know about gentrification?

* This questionnaire was presented via Qualtrics

(https://pitt.co1.qualtrics.com/jfe/form/SV_09yOl5ttj1U7Fk1)

Appendix B Pre-selected Sources for Task 1

1. Edited version of *Gentrification and Neighborhood Revitalization: What's the difference?*

(https://nlihc.org/resource/gentrification-and-neighborhood-revitalization-whats-difference)

Advocates from United for a New Economy – Denver, Colarado Credit: John Goldstein

Displacement — The Real Enemy

Many anti-displacement activists define gentrification as a race and class change of a historically poor neighborhood. Gentrification often occurs in these neighborhoods due to the chance to make a high profit from the arrival of wealthier newcomers willing to pay higher rents.

One case of gentrification is the Bay Area in California, which is experiencing an extreme change. There have been many technology companies, like Google, replacing old industries. New people have moved in to work for these companies and replace the original residents. The Bay Area has grown radically rich but in doing so has displaced ordinary working people, the elderly,

and people with disabilities from their homes. Ethnicity is also related to this process of gentrification. Most of the wealthy and well-paid people are white while those being displaced are people of color, who typically have less income.

One of the negative effects of gentrification is the high cost of rent. As a result, low-income people are forced to move to lower-cost neighborhoods. Many displaced people are moving to poorer neighborhoods that have a lower quality of life. Cultural displacement is also common. The closing of long-time neighborhood landmarks like historically Black churches or local restaurants can erase the history of a neighborhood.

2. Edited version of *Yes, you can gentrify neighborhood without pushing out poor people* (https://www.washingtonpost.com/outlook/2019/04/08/yes-you-can-gentrify-neighborhood-without-pushing-out-poor-people/)

For many neighborhoods, gentrification represents a much-needed investment. Local residents welcome the revival of neglected and disinvested areas. Community leaders desire investments, leading to better services, jobs, and thriving businesses for a healthier and vibrant neighborhood.

Gentrification does not have to mean displacement. This issue came up again last year when cities across the nation competed for Amazon's second headquarters. Any struggling cities could have been transformed by Amazon's magnificent investment. Imagine what 50,000 high-paying jobs and a massive building boom could have done for the under-developed cities.

Cultural and physical displacement only occurs when the people who live in booming neighborhoods are pushed aside for wealthier newcomers. The benefits of urban living, new jobs, cultural events, and great schools shouldn't just be available to the rich. It can be possible to have sustainable investment and economic growth for both.

3. Edited version of Pittsburgh is one of the most gentrified cities in the U.S.

(https://www.pghcitypaper.com/pittsburgh/pittsburgh-is-one-of-the-most-gentrified-cities-in-the-us/Content?oid=14381722)

According to a new study, Pittsburgh is the eighth-most gentrified city in America. Pittsburgh neighborhoods that are going through the gentrification process include Lawrenceville, Bloomfield, Polish Hill, Downtown, Mount Washington, and East Liberty.

Neighborhoods across this city have been through lots of change, but perhaps none more so than East Liberty. East Liberty went into 30 years of downfall in the late 1950s after city planners launched an urban renewal project that ultimately failed.

Change happened again in the early 2000s when major commercial developments brought life back into a neighborhood now home to retailers like Whole Foods, Target, and Home Depot. In 2010, Google made a big impact on this neighborhood, too. Once America's steel town, the city is now a hub for Google, Amazon, and Uber.

While East Liberty goes through another big change, some long-time residents worry about gentrification and displacement. They raised concerns, for example, when the Penn Plaza apartments were demolished this past summer for a redevelopment project. The renovated buildings rent two-bedroom apartments for more than $3,000 a month.

"Who's that affordable for? Definitely not the people who lived here. And not too many people that I know of," says East Liberty resident Alethea Sims.

Leave a Comment   ✕

2 Comments   Sort by   Oldest ⬍

Add a comment...

Lily Gordon
Where ever they come, they deplete the neighborhood of its original people. Especially blacks. Detroit will be next. Get ready. Buy those homes while they are cheap. Save yourselves!
Like · Reply · 👍 3 · 2y

Anthony Smith
Any time there is change you have both winners and losers. I'm just hoping instead of people vs company, everyone can come together and figure it out. I did my undergrad at cmu so I'm kinda familiar with the area...a lot of untapped potential in the people of Pittsburgh that can also seek out these new opportunities.
Like · Reply · 👍 1 · 2y

4. Tweet (https://twitter.com/billpeduto/status/662490582665830400?s=20)

5. Tweet (https://twitter.com/StephStrasburg/status/880060666199068677)
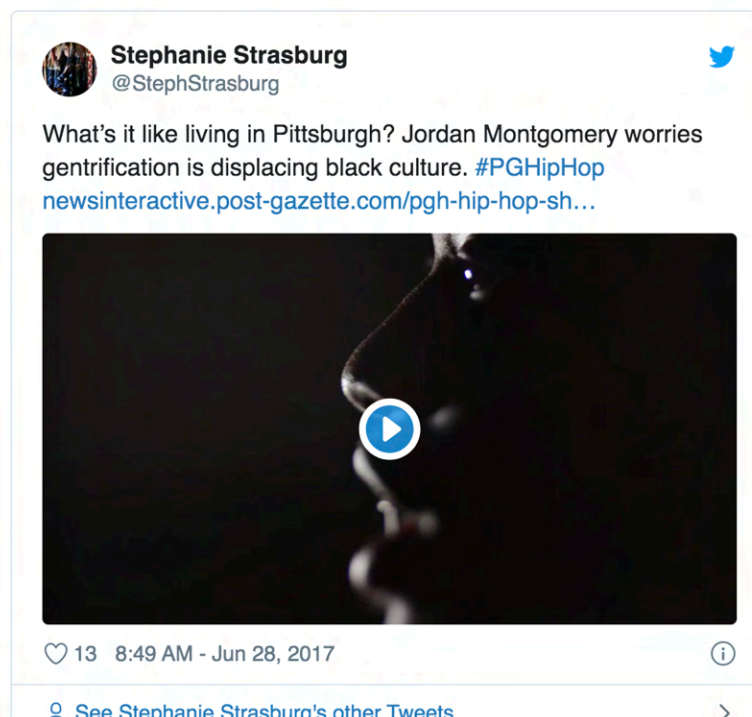
[A Transcript of a Video]

…. raise the cost of living, because they don't want no brothers with them in apartments to cost a couple million in the hood like a chameleon it done changed on. It's talking about urban development but know that we can't afford it do we need another Wholefoods around the corner?

lived there eight years found eviction notice on the door the next morning landlord changed the

locks on the door and yo this place is a little crazy. too much color money? not enough color

money. we bought this land and now you wanna come and take it from us. Look it's all about the

infrastructure what we don't have in funds we make up in numbers times dabbed by the

individual strength among us. Welcome to America's most livable city please ignore the

invisibles with me.

Bibliography

Afflerbach, P. (1990). The influence of prior knowledge on expert readers' main idea construction strategies. *Reading Research Quarterly, 25*, 31–46.

Afflerbach, P. (2000). Verbal reports and protocol analysis. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 163–179). Erlbaum.

Afflerbach, P., & Cho, B.–Y. (2009). Determining and describing reading strategies: Internet and traditional forms of reading. In H. S. Waters & W. Schneider (Eds.), *Metacognition, strategy use, and instruction* (pp. 201–225). Guilford.

Alexander, P. A. (1992). Domain knowledge: Evolving themes and emerging concerns. *Educational Psychologist, 27*, 33–51

Almasi, J. F., & McKeown, M. G. (1996). The nature of engaged reading in classroom discussions of literature. *Journal of Literacy Research*, *28*(1), 107–146.

Alptekin, C. (2006). Cultural familiarity in inferential and literal comprehension in L2 reading. *System*, *34*(4), 494–508.

Alvermann, D. E., & Eakle, A. J. (2003). Comprehension instruction: Adolescents and their multiple literacies. In A. P. Sweet & C. E. Snow (Eds.), *Rethinking reading comprehension* (pp. 12–29). Guilford Press.

Alvermann, D. E., & Hagood, M. C. (2000). Critical media literacy: Research, theory, and practice in "New Times". *The Journal of Educational Research*, *93*(3), 193–205.

Alvermann, D. E., Hutchins, R. J., & McDevitt, R. (2012). Adolescents' engagement with web 2.0 and social media: Research, theory, and practice. *Research in the Schools*, *19*(1), 33.

Alvermann, D. E., Smith, L. C., & Readence, J. E. (1985). Prior knowledge activation and the comprehension of compatible and incompatible text. *Reading Research Quarterly*, *20*, 420–436.

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association.

Amgott, N. (2018). Critical literacy in #DigitalActivism: Collaborative choice and action. *The International Journal of Information and Learning Technology, 35*(5), 329–341.

Amin, R. (2010). The empire strikes back: Social media uprisings and the future of cyber activism. *Harvard Kennedy School Review, 10*, 64–66.

Anderson, R. C., & Pearson, P. D. (1984). A schema–theoretic view of basic processes in reading comprehension. In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (Vol 1. pp. 255–291). Longman.

Bagnoli, A. (2009). Beyond the standard interview: The use of graphic elicitation and arts–based methods. *Qualitative Research, 9*(5), 547–570.

Baildon, M., & Baildon, R. (2012). Evaluating online sources: Helping students determine trustworthiness, readability, and usefulness. *Social Studies and the Young Learner*, *24*(4), 11–14.

Bakardjieva, M., Svensson, J. and Skoric, M. (2012), "Digital citizenship and activism: questions of power and participation online", *Journal of eDemocracy and Open Government, 4*(1), 1–4.

Balcytiene, A. (1999). Exploring individual processes of knowledge construction with hypertext. *Instructional Science*, *27*(3–4), 303–328.

Baldwin, R. S., Peleg–Bruckner, Z., & McClintock, A. H. (1985). Effects of topic interest and prior knowledge on reading comprehension. *Reading Research Quarterly*, *20*, 497–504.

Barab, S. A., Bowdish, B. E., & Lawless, K. A. (1997). Hypermedia navigation: Profiles of hypermedia users. *Educational Technology Research & Development, 45*, 23–42.

Barton, D., & Hamilton, M. (1998). *Local literacies: Reading and writing in one community*. Routledge.

Barton, D., Hamilton, M., & Ivanič, R. (2000). *Situated literacies: Reading and writing in context*. Routledge.

Barzilai, S., & Zohar, A. (2012). Epistemic thinking in action: Evaluating and integrating online sources. *Cognition and Instruction*, *30*(1), 39–85.

Bazeley, P., & Jackson, K. (2013). *Qualitative Data Analysis with NVivo* (2nd ed.). Sage Publications.

Behrman, E. H. (2006). Teaching about language, power, and text: A review of classroom practices that support critical literacy. *Journal of Adolescent & Adult Literacy*, *49*(6), 490–498.

Blaschke, L. M. (2014). Using social media to engage and develop the online learner in self–determined learning. *Research in Learning Technology*, 22: Article 21635 http://dx.doi.org/10.3402/rlt.v22.21635

Blendon, R. J., Young, J. T., & Hemenway, D. (1996). The American public and the gun control debate. *JAMA*, *275*(22), 1719–1722.

Brand–Gruwel, S., Wopereis, I., & Vermetten, Y. (2005). Information problem solving by experts and novices: Analysis of a complex cognitive skill. *Computers in Human Behavior, 21*, 487–508.

Bråten, I., & Strømsø, H. I. (2006). Epistemological beliefs, interest, and gender as predictors of Internet–based learning activities. *Computers in Human Behavior*, *22*(6), 1027–1042.

Bråten, I., Strømsø, H. I., & Britt, M. A. (2009). Trust matters: Examining the role of source evaluation in students' construction of meaning within and across multiple texts. *Reading Research Quarterly*, *44*(1), 6–28.

Brem, S. K., Russell, J., & Weems, L. (2001). Science on the web: student evaluations of scientific arguments. *Discourse Processes, 32*, 191–213.

Britt, M. A., & Anglinskas, C. (2002). Improving students' ability to identify and use source information. *Cognition and Instruction, 20*(4), 485–522.

Britt, M. A., & Rouet, J.–F. (2012). Learning with multiple documents: Component skills and their acquisition. In M. J. Lawson & J. R. Kirby (Eds.), *The quality of learning: Dispositions, instruction, and mental structures* (pp. 276–314). Cambridge University Press.

Britt, M.A., Rouet, J.F., & Braasch, J.L.G. (2013). Documents as entities: Extending the situation model theory of comprehension. In M.A. Britt, S.R. Goldman, & J.F. Rouet (Eds.), *Reading: From words to multiple texts* (pp. 160–179). Routledge.

Brooks, W. (2006). Reading representations of themselves: Urban youth use culture and African American textual features to develop literary understandings. *Reading Research Quarterly*, *41*(3), 372–392.

Bruce, B. (2000). Credibility of the Web: Why we need dialectical reading. *Journal of Philosophy of Education, 34*, 97–109.

Buckingham (2015). Defining digital literacy–What do young people need to know about digital media?. *Nordic Journal of Digital Literacy*, *10* (Jubileumsnummer), 21–35.

Bilal, D. (2000). Children's use of the Yahooligans! Web search engine: Cognitive, physical, and affective behaviors on fact–based search tasks. *Journal of the American Society for Information Science, 51*(7), 646–665.

Bilal, D. (2001). Children's use of the Yahooligans! web search engine: Cognitive, physical and affective behaviors on research tasks. *Journal of the American Society for Information Science, 52*(2), 118–136.

Bonilla, Y., & Rosa, J. (2015). #Ferguson: Digital protest, hashtag ethnography, and the racial politics of social media in the United States. *American Ethnologist, 42*(1), 4–17.

Burbules, N. C., & Callister, T. A. (2000). *Watch IT: The risks and promises of information technologies for education*. Westview.

Calisir, F., & Gurel, Z. (2003). Influence of text structure and prior knowledge of the learner on reading comprehension, browsing and perceived control. *Computers in Human Behavior, 19*(2), 135–145.

Castek, J., & Beach, R. (2013). Using apps to support disciplinary literacy and science learning. *Journal of Adolescent & Adult Literacy, 56*(7), 554–564.

Cervetti, G., Pardales, M. J., & Damico, J. S. (2001). A tale of differences: Comparing the traditions, perspectives, and educational goals of critical reading and critical literacy. *Reading Online, 4*(9). Available: http://www.readingonline.org/articles/art_index.asp?HREF=/articles/cervetti/index.html.

Chang, C. (2015). Self–construal and Facebook activities: Exploring differences in social interaction orientation. *Computers in Human Behavior, 53*, 91–101.

Charmaz, K. (2006). *Constructing grounded theory*: *A practical guide through qualitative analysis*. Sage Publications.

Cho, B.–Y. (2011). *Adolescents' constructively responsive reading strategy use in a critical internet reading task*. [Doctoral dissertation, University of Maryland, College Park] Available from https://drum.lib.umd.edu/bitstream/handle/1903/11879/Cho_umd_0117E_12423.pdf?sequence=1&isAllowed=y

Cho, B.–Y. (2014). Competent adolescent readers' use of Internet reading strategies: A think–aloud study. *Cognition and Instruction, 32*(3), 253–289.

Cho, B.–Y. (2020). Verbal protocol analysis in literacy. In N. Duke & M. Mallette (Eds.), *Literacy research methodologies* (3rd ed., pp. 391–424). Guilford.

Cho, B.–Y., & Afflerbach, P. (2015). Reading on the Internet: Realizing and constructing potential texts. *Journal of Adolescent & Adult Literacy*, *58*(6), 504–517.

Cho, B.–Y., Han, H., & Kucan, L. L. (2018). An exploratory study of middle–school learners' historical reading in an internet environment. *Reading and Writing*, *31*(7), 1525–1549.

Cho, B.–Y., Kucan, L., & Rainey, E. C. (2020). Students' Perspective Learning in a Disciplinary Multisource Task Environment. *Handbook of learning from multiple representations and perspectives* (pp. 276–293). Routledge.

Cho, B.–Y., Woodward, L., Li, D., & Barlow, W. (2017). Examining adolescents' strategic processing during online reading with a question–generating task. *American Educational Research Journal*, *54*(4), 691–724.

Cho, B.–Y., Woodward, L., & Li, D. (2018). Epistemic processing when adolescents read online: A verbal protocol analysis of more and less successful online readers. *Reading Research Quarterly*, *53*(2), 197–221.

Coiro, J. (2003). Exploring literacy on the internet: Reading comprehension on the internet: Expanding our understanding of reading comprehension to encompass new literacies. *The Reading Teacher*, *56*(5), 458–464.

Coiro, J. L. (2011). Predicting reading comprehension on the Internet: Contributions of offline reading skills, online reading skills, and prior knowledge. *Journal of Literacy Research, 43*(4), 352–392.

Coiro, J., Coscarelli, C., Maykel, C., & Forzani, E. (2015). Investigating criteria that seventh graders use to evaluate the quality of online information. *Journal of Adolescent & Adult Literacy*, *59*(3), 287–297.

Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth–grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly, 42*(2), 214–257.

Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2008). Central issues in new literacies and new literacies research. *Handbook of research on new literacies* (pp. 1–21). Erlbaum.

Cook–Gumperz, J. (1986). Caught in a web of words: Some considerations on language socialization and language acquisition. *Children's Worlds and Children's Language*, 37–68.

Cope, B. & Kalantzis, M. (2000). Designs for social futures. In Cope, B. & Kalantzis, M., (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 203–234). Routledge.

Cope, B., & Kalantzis, M. (2009). "Multiliteracies": New literacies, new learning. *Pedagogies: An international journal*, *4*(3), 164–195.

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*(1), 3–21.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (Vol. 3). Sage Publications.

Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Sage Publications.

Cummins, J. (2015). Language differences that influence reading development. In *Handbook of individual differences in reading, reader, text, and context*. Routledge.

Damico, J. S. (2005). Multiple dimensions of literacy and conceptions of readers: Toward a more expansive view of accountability. *The Reading Teacher*, *58*(7), 644–652.

Damico, J., & Apol, L. (2008). Using testimonial response to frame the challenges and possibilities of risky historical texts. *Children's Literature in Education*, *39*(2), 141–158.

Damico, J., & Baildon, M. (2007). Examining ways readers engage with websites during think-aloud sessions. *Journal of Adolescent & Adult Literacy*, *51*(3), 254–263.

Damico, J., Baildon, M., Exter, M., & Guo, S. J. (2009). Where we read from matters: Disciplinary literacy in a ninth-grade social studies classroom. *Journal of Adolescent & Adult Literacy*, *53*(4), 325–335.

Damico, J. S., Baildon, M., & Panos, A. (2020). Climate justice literacy: Stories-we-live-by, ecolinguistics, and classroom practice. *Journal of Adolescent & Adult Literacy*, *63*(6), 683–691.

Davis, D. S., & Neitzel, C. (2012). Collaborative sense–making in print and digital text environments. *Reading and Writing*, *25*(4), 831–856.

DeAndrea, D. C., Shaw, A. S., & Levine, T. R. (2010). Online language: The role of culture in self–expression and self–construal on Facebook. *Journal of Language and Social Psychology*, *29*(4), 425–442.

de Vreese, C. H. (2007). Digital renaissance: Young consumer and citizen?. *Annals of the American Academy of Political and Social Science*, *611*, 207–216. doi:10.1177/0002716206298521

Dixon, K. & Janks, H. (2013). Digital technologies. In Janks, H., Dixon, K., Ferreira, A., Granville, S., & Newfield, D (Eds.). *Doing critical literacy: Texts and activities for students and teachers*. Routledge.

Durrant, C., & Green, B. (2000). Literacy and the new technologies in school education: meeting the l (IT)eracy challenge?. *Australian Journal of Language and Literacy, 23*(2), 89–108.

Eagleton, M. B., & Guinee, K. (2002). Strategies for supporting student Internet inquiry. *New England Reading Association Journal*, *38*(2), 39–47.

Epstein, T. (1998). Deconstructing differences in African–American and European–American adolescents' perspectives on U.S. history. *Curriculum Inquiry, 28*(4), 397–424.

Esteban–Guitart, M., & Moll, L. C. (2014). Funds of identity: A new concept based on the funds of knowledge approach. *Culture & Psychology*, *20*(1), 31–48.

Ferguson, L. E., Bråten, I., & Strømsø, H. I. (2012). Epistemic cognition when students read multiple documents containing conflicting scientific evidence: A think–aloud study. *Learning and Instruction*, *22*(2), 103–120.

Fitzgerald, M., Higgs, J., & Palincsar, A. (2020). *New media, new literacies: Implications for reading for understanding*. National Academy of Education.

Foltz, P. W. (1996). Latent semantic analysis for text–based research. *Behavior Research Methods, Instruments, & Computers*, *28*(2), 197–202.

Freebody, P., & Luke, A. (1990). Literacies programs: Debates and demands in cultural context. *Prospect: Australian Journal of TESOL,* 5(7), 7–16.

Freebody, P., Luke, A., & Gilbert, P. (1991). Reading positions and practices in the classroom. *Curriculum Inquiry*, *21*(4), 435–457.

Freire, P. (1970). *Pedagogy of the oppressed*. Seabury.

Gallie, W. B. (1964). *Philosophy and the historical understanding*. Chatto & Windus.

Garcia, A., Mirra, N., Morrell, E., Martinez, A., & Scorza, D. (2015). The council of youth research: Critical literacy and civic agency in the digital age. *Reading & Writing Quarterly*, *31*, 151–167.

Gambrell, L. B. (1996). Creating classroom cultures that foster reading motivation. *Reading Teacher*, *50*, 14–25.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. Teachers College.

Gay, G. (2010). *Culturally responsive teaching*. (2nd ed). Teachers College Press.

Gay, G. (2015). The what, why, and how of culturally responsive teaching: International mandates, challenges, and opportunities. *Multicultural Education Review*, *7*(3), 123–139.

Gee (1991) *Social Linguistics: Ideology in discourses*, Falmer Press: London

Gee, J.P. (1992). *The social mind: Language, ideology, and social practice*. Bergin & Garvey.

Gee, J.P. (1996). *Social linguistics and literacies: Ideology in discourses*. Routledge Falmer.

Gee, J. P. (2000). The new literacy studies: From "socially situated" to the work of the social. In D. Barton, M. Hamilton, & R. Ivanic (Eds.), *Situated literacies: reading and writing in context* (pp. 180–196). Routledge.

Gee, J. P. (2010). A situated–sociocultural approach to literacy and technology. In E. A. Baker (Ed.), *The new literacies: Multiple perspectives on research and practice*. Guilford Press.

Glaser, R. (1984). Education and thinking: The role of knowledge. *American Psychologist*, *39*, 93–104.

Glaser, B., & Strauss, A. (1967). Grounded theory: The discovery of grounded theory. *Sociology the journal of the British sociological association*, *12*(1), 27–49.

Goldman, S. R., & Scardamalia, M. (2013). Managing, understanding, applying, and creating knowledge in the information age: Next–generation challenges and opportunities. *Cognition and Instruction*, *31*(2), 255–269.

Gonzalez, N., Moll, L., & Amanti, C. (2005). *Funds of knowledge*. Lawrence Erlbaum Associates.

Gonzalez, N., Moll, L. C., Tenery, M. F., Rivera, A., Rendon, P., Gonzales, R., & Amanti, C. (1995). Funds of knowledge for teaching in Latino households. *Urban Education*, *29*(4), 443–470.

Graesser, A. C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. *Psychological Review*, *101*(3), 371.

Green, B. (1988). Subject–specific literacy and school learning: A focus on writing. *Australian Journal of Education*, *32*(2), 156–179.

Greeno, J. G.: Collmns, A. M., & Resnick, L. B. (1996). Cognition and learning. In D.C. Berhner & R C. Galfee (Eds.), *Handbook of educational psychology* (pp. 15–46). Macmillan.

Guthrie, J. T. (2004). Classroom contexts for engaged reading: An overview. In J. T. Guthrie, A. Wigfield, & K. C. Perencevich (Eds.), *Motivating reading comprehension: Concept–oriented reading instruction* (pp. 87–112). Lawrence Erlbaum Associates.

Guthrie, J. T., & Alvermann, D. E. (Eds.). (1999). *Engaged reading: Processes, practices, and policy implications*. Teachers College Press.

Guthrie, J. T., Van Meter, P., Hancock, G. R., Alao, S., Anderson, E., & McCann, A. (1998). Does concept–oriented reading instruction increase strategy use and conceptual learning from text?. *Journal of Educational Psychology, 90*(2), 261.

Guthrie, J. T., Van Meter, P., McCann, A. D., Wigfield, A., Bender, L., Poundstone, C. C., Rice, M. E., Faibisch, F. M., Junt, B., & Mitchell, A.M. (1996). Growth of literacy engagement: Changes in motivations and strategies during concept–oriented reading instruction. *Reading Research Quarterly, 31*, 306–325.

Guthrie, J., & Wigfield, A. (2000). Engagement and motivation in reading. In M.L. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 403–422). Erlbaum.

Guthrie, J., Wigfield, A., & VonSecker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology, 92*(2), 331–341.

Guthrie, J. T., Wigfield, A., & You, W. (2012). Instructional contexts for engagement and achievement in reading. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 601–634). Springer.

Gilbert, J. (2013). A collaborative online reading and research project. In B. Tomlinson & C. Whittaker (Eds.), *Blended learning in English language teaching: Course design and implementation* (pp. 27–34). British Council

Hagood, M. C. (2002). Critical literacy for whom?. *Literacy Research and Instruction*, *41*(3), 247–265.

Hamilton, M. (2000). Expanding the new literacy studies: using photographs to explore literacy as social practice. *Situated literacies: Reading and Writing in Context*, 16–34.

Hall, T. (2011). Designing from their own social worlds: The digital story of three African American young women. *English Teaching: Practice and Critique*, *10*(1), 7–20.

Hartman, D. K. (1995). Eight readers reading: The intertextual links of proficient readers reading multiple passages. *Reading Research Quarterly, 27*, 520–561.

Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms*. Cambridge University Press.

Heath, S. B., & McLaughlin, M. W. (1993). *Identity and inner–city youth: Beyond ethnicity and gender*. Teachers College Press.

Hill, J. R., & Hannafin, M. J. (1997). Cognitive strategies and learning from the World Wide Web. *Educational Technology Research and Development*, *45*(4), 37–64.

Hofer, B. K., & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research*, *67*(1), 88–140.

Howard, T.C. (2001). Powerful pedagogy for African American students: A case of four teachers. *Urban Education, 36*(2), 179– 202.

Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher*, *66*(1), 15–23.

International Reading Association. (2009). *New literacies and 21st century technologies (Position statement)*. International Reading Association. Available from: www.reading.org/General/AboutIRA/PositionStatements/21stCenturyLiteracies.aspx

Janks, H. (1993). *Language, Identity and Power*. Hodder & Stroughton.

Janks, H. (2000). Domination, access, diversity and design: A synthesis for critical literacy education. *Educational Review*, *52*(2), 175–186.

Janks, H. (2018). Texts, identities, and ethics: critical literacy in a post-truth world. *Journal of Adolescent & Adult Literacy*, *62*(1), 95–99.

Jewitt, C. (2005). Multimodality, "reading", and "writing" for the 21st century. *Discourse: Studies in the cultural politics of education*, *26*(3), 315–331.

Johnson, L. L., Bass, T., & Hicks, M. (2014). Creating critical spaces for young activists. In *Teaching towards democracy with postmodern and popular culture texts* (pp. 37–58). Brill Sense.

Kiili, C. (2012). *Online Reading as an individual and social practice*. [Doctoral dissertation, University of Jyväskylä] Available from http://dissertations. jyu.fi/studeduc/9789513947958.pdf

Kiili, C., Laurinen, L., Marttunen, M., & Leu, D. J. (2012). Working on understanding during collaborative online reading. *Journal of Literacy Research*, *44*(4), 448–483.

Kiili, C., Leu, D. J., Marttunen, M., Hautala, J., & Leppänen, P. H. (2018). Exploring early adolescents' evaluation of academic and commercial online resources related to health. *Reading and Writing*, *31*(3), 533–557.

Kim, G. M. (2016). Practicing multilingual identities: Online interactions in a Korean dramas forum. *International Multilingual Research Journal*, *10*(4), 254–272.

Kim, G. M., & Omerbašić, D. (2017). Multimodal literacies: Imagining lives through Korean dramas. *Journal of Adolescent & Adult Literacy*, *60*(5), 557–566.

Knobel, M., & Lankshear, C. (2008). Digital literacy and participation in online social networking spaces. *Digital literacies: Concepts, policies and practices*, 249–278.

Kinloch, V. (2010). *Harlem on our minds: Place, race, and the literacies of urban youth*. Teachers College Press.

Kintsch, W. (1974). *The representation of meaning in memory*. Erlbaum.

Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction–integration model. *Psychological Review, 95*, 163–182.

Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge, Cambridge University Press.

Kintsch, W., & Van Dijk, T. A. (1978). Toward a model of text comprehension and production. *Psychological Review*, *85*(5), 363–394.

Kinzer, C. K., & Leander, K. (2003). Technology and the language arts: Implications of an expanded definition of literacy. In J. Flood, D. Lapp, J. Squire, & J. Jensen (Eds.), *Handbook of research on teaching the English language arts* (2nd ed., pp. 546–565). Erlbaum.

Kress, G. (2000). Multimodality: Challenges to thinking about language. *TESOL quarterly*, *34*(2), 337–340.

Kress, G. (2003). *Literacy in the new media age*. Routledge.

Kucan, L., & Beck, I. L. (1997). Thinking aloud and reading comprehension research: Inquiry, instruction, and social interaction. *Review of educational research*, *67*(3), 271–299.

Ladson–Billings, G. (1994). Who will teach our children? Preparing teachers to effectively teach African American students. In E. R. Hollins, J. E. King, & W. C. Hayman (Eds.), *Teaching in diverse populations: Formulating a knowledge base* (pp. 129–142). State University of New York Press.

Lam, W. S. E. (2009). Multiliteracies on instant messaging in negotiating local, translocal, and transnational affiliations: A case of an adolescent immigrant. *Reading Research Quarterly*, *44*(4), 377–397.

Lam, W. S. E., & Rosario–Ramos, E. (2009). Multilingual literacies in transnational digitally mediated contexts: An exploratory study of immigrant teens in the United States. *Language and Education*, *23*, 171–190.

Lempert, L. B. (2007). Asking questions of the data: Memo writing in the grounded. *The Sage handbook of grounded theory*, 245–264.

Landis, D. (2003). Reading and writing as social, cultural practices: Implications for literacy education. *Reading &Writing Quarterly*, *19*(3), 281–307.

Langer, J. A. (1990). The process of understanding: Reading for literary and informative purposes. *Research in the Teaching of English*, 229–260.

Lankshear, C., Bigum, C., Durrant, C., Green, B., Honan, E., Murray, J., et al. (1997). *Digital rhetorics: Literacies and technologies in education—Current practices and future directions.* Canberra, ACT: Commonwealth of Australia, Department of Employment, Education, Training and Youth Affairs.

Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning*. Open University Press.

Laurie, T., & Khan, R. (2017). The concept of minority for the study of culture. *Continuum*, *31*(1), 1–12.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.

Lawless, K. A., & Kulikowich, J. M. (1996). Understanding hypertext navigation through cluster analysis. *Journal of Educational Computing Research, 14*(4), 385–399.

Lee, C. K. (2007). Text–making practices beyond the classroom context: Private instant messaging in Hong Kong. *Computers and Composition*, *24*(3), 285–301.

Lee, C. D. (2016). Influences of the experience of race as a lens for understanding variation in displays of competence in reading comprehension. In P. Afflerbach, (Ed.), *Handbook of individual differences in reading: Reader, text, and context*, (pp. 286–304). Routledge.

Lee, C. D. (2020). Social and cultural diversity as lens for understanding student learning and the development of reading. In E. B. Moje, P. Afflerbach, N. K. Lesaux, & P. Enciso (Eds.), *Handbook of reading research* (Vol.5, pp. 37–56). Routledge.

Lee, E. B. (2012). Young, Black, and connected: Facebook usage among African American college students. *Journal of Black Studies*, *43*(3), 336–354.

Lee, V. J., Meloche, A., Grant, A., Neuman, D., & Tecce DeCarlo, M. J. (2019). "My thoughts on gun violence": An urban adolescent's display of agency and multimodal literacies. *Journal of Adolescent & Adult Literacy*. *63*(2), 157–168.

Leland, C., Ociepka, A., Kuonen, K., & Bangert, S. (2018). Learning to talk back to texts. *Journal of Adolescent & Adult Literacy*, *61*(6), 643–652.

Lemphane, P., & Prinsloo, M. (2014). Children's digital literacy practices in unequal South African settings. *Journal of Multilingual and Multicultural Development*, *35*(7), 738–753.

Leu, D. J. (2000). Literacy and technology: Deictic consequences for literacy education in an information age. In M. Kamil, P.B. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 743–770). Erlbaum.

Leu, D. J., McVerry, J. G., O'Byrne, W. I., Zawilinski, L., Castek, J., & Hartman, D. K. (2009). The new literacies of online reading comprehension and the irony of no child left behind: Students who require our assistance the most, actually receive it the least. *Handbook of research on literacy instruction: Issues of diversity, policy, and equity* (pp. 173–194). Guilford.

Leu, D.J., Kinzer, C.K., Coiro, J., Castek, J., Henry, L.A. (2013). New literacies and the new literacies of online reading comprehension: A dual level theory. In N. Unrau & D. Alvermann (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 1150–1181). International Reading Association.

Lewis, C. (2008). Internet communication among youth: New practices and epistemologies. In J. Flood, S. B. Heath, & D. Lapp (Eds.), *Handbook of research on teaching literacy through the communicative and visual arts* (Vol. 2, pp. 237–246). International Reading Association.

Lewis, C., & Fabos, B. (2005). Instant messaging, literacies, and social identities. *Reading Research Quarterly*, *40*(4), 470–501.

List, A., & Alexander, P. A. (2017). Cognitive affective engagement model of multiple source use. *Educational Psychologist*, *52*(3), 182–199.

Luke, A. (1992). *Reading the critical literacy: redefining the 'Great Debate'.* [conference paper] presented at the 18th New Zealand Conference on Reading, Wellington, NZ.

Luke, A. (1995). When basic skills and information processing just aren't enough: Rethinking reading in new times. *Teachers College Record*, *97*, 95–115.

Luke, A., & Freebody, P. (1997). The social practices of reading. In S. Muspratt, A. Luke, & P. Freebody (Eds.), *Constructing critical literacies: Teaching and learning textual practice* (pp. 185–226). Hampton Press.

Luke, A. (2012). Critical literacy: Foundational notes. *Theory into Practice, 51*(1), .4–11.

Mason, L., Ariasi, N., & Boldrin, A. (2011). Epistemic beliefs in action: Spontaneous reflections about knowledge and knowing during online information searching and their influence on learning. *Learning and Instruction*, *21*(1), 137–151.

Maíz–Arévalo, C., & García–Gómez, A. (2013). 'You look terrific!' Social evaluation and relationships in online compliments. *Discourse Studies*, *15*(6), 735–760.

Marttunen, M., Salminen, T., & Utriainen, J. (2021). Student evaluations of the credibility and argumentation of online sources. *The Journal of Educational Research*, *114*(3) 294–305.

Mayer, R. E. (2001). *Multimedia learning.* Cambridge University Press.

McDonald, S., & Stevenson, R. J. (1998). Navigation in hyperspace: An evaluation of the effects of navigational tools and subject matter expertise on browsing and information retrieval in hypertext. *Interacting with Computers*, *10*(2), 129–142.

McGrew, S., Ortega, T., Breakstone, J., & Wineburg, S. (2017). The challenge that's bigger than fake news: Civic reasoning in a social media environment. *American Educator*, *41*(3), 4–9.

McKenna, M. C., Kear, D. J., & Ellsworth, R. A. (1995). Children's attitudes toward reading: A national survey. *Reading Research Quarterly*, *30*, 934–956.

McKeown, M. G., & Beck, I. L. (1990). The assessment and characterization of young learners' knowledge of a topic in history. *American Educational Research Journal*, *27*(4), 688–726.

McLaughlin, M., & DeVoogd, G. (2004). Critical literacy as comprehension: Expanding reader response. *Journal of Adolescent & Adult Literacy*, *48*(1), 52–62.

McNamara, D. S. (2001). Reading both high–coherence and low–coherence texts: Effects of text sequence and prior knowledge. *Canadian Journal of Experimental Psychology/Revue Canadienne de Psychologie Expérimentale*, *55*(1), 51–62.

McNamara, D. S., & Kintsch, W. (1996). Learning from texts: Effects of prior knowledge and text coherence. *Discourse Processes*, *22*(3), 247–288.

McNamara, T. P, Miller, D. L., and Bransford, J. D. (1991). Mental models and reading comprehension. In Brown, R., Kamil, M. L., Mosenthal, P., and Pearson, D. P. (eds.), *Handbook of reading research*, (Vol. 2, pp. 490–511). Longman.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: a methods sourcebook* (3rd ed.). Sage Publications.

Millard, E. (1997). *Differently Literate*. Falmer Press.

Mitchell, D. (2014). Advancing grounded theory: Using theoretical frameworks within grounded theory studies. *The Qualitative Report*, *19*(36), 1–11.

Moje, E.B. (2000). To be part of the story: The literacy practices of gangsta adolescents. *Teachers College Record, 102*, 652–690.

Moje, E. B. (2007). Chapter 1 Developing socially just subject–matter instruction: A review of the literature on disciplinary literacy teaching. *Review of Research in Education*, *31*(1), 1–44.

Moje, E. B., & Luke, A. (2009). Literacy and identity: Examining the metaphors in history and contemporary research. *Reading Research Quarterly*, *44*(4), 415–437.

Moje, E. B., Young, J. P., Readence, J. E., & Moore, D. W. (2000). Reinventing adolescent literacy for new times: Perennial and millennial issues. *Journal of Adolescent and Adult Literacy*, *43*(5), 400–411.

Monte–Sano, C. (2011). Beyond reading comprehension and summary: Learning to read and write in history by focusing on evidence, perspective, and interpretation. *Curriculum Inquiry*, *41*(2), 212–249.

Muhammad, G. E., & Haddix, M. (2016). Centering Black girls' literacies: A review of literature on the multiple ways of knowing of Black girls. *English Education*, *48*(4), 299–336.

National Assessment of Educational Progress. (June 21, 2021), Reading Framework for the 2026 National Assessment of Educational Progress (Chair's Draft). Retrieved from https://www.nagb.gov/content/dam/nagb/en/documents/publications/frameworks/reading/Chairs–Draft_clean_FINAL.pdf

National Community Reinvestment Coalition (2019). *Study: Gentrification And Cultural Displacement Most Intense In America's Largest Cities, And Absent From Many Others*. Retrived from https://ncrc.org/study–gentrification–and–cultural–displacement–most–intense–in–americas–largest–cities–and–absent–from–many–others/

National Council for Teachers of English (2019). *Definition of Literacy in a Digital Age*. Retrieved from https://ncte.org/statement/nctes–definition–literacy–digital–age/

Newman, K. S., Fox, C., Harding, D., Mehta, J., & Roth, W. (2008). *Rampage: The social roots of school shootings*. Hachette UK.

New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard educational review*, *66*(1), 60–93.

Nokes, J. D., Dole, J. A., & Hacker, D. J. (2007). Teaching high school students to use heuristics while reading historical texts. *Journal of Educational Psychology*, *99*(3), 492.

Norris, S.P. (1985). Synthesis of research on critical thinking. *Educational Leadership, 43*, 40–45.

Norris, S.P., & Phillips, L.M. (1987). Explanations of reading comprehension: schema theory and critical thinking theory. *Teachers College Record* (2), 281–306.

O'Keeffe, G. S., & Clarke–Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics*, *127*(4), 800–804.

Organization for Economic Co–operation and Development (2021), *21st–Century readers: Developing literacy skills in a digital world*, PISA, OECD Publishing. https://doi.org/10.1787/a83d84cb–en.

Pangrazio, L. (2016). Reconceptualising critical digital literacy. *Discourse: Studies in the Cultural Politics of Education, 37*(2), 163–174.

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Sage Publications.

Paris, D. (2012). Culturally sustaining pedagogy: A needed change in stance, terminology, and practice. *Educational Researcher*, *41*(3), 93–97.

Pearson, P. D., Palincsar, A. S., Biancarosa, G., & Berman, A. (2020). *Reaping the rewards of the Reading for Understanding Initiative*. National Academy of Education.

Peters, S., & Chimedza, R. (2000). Conscientization and the cultural politics of education: A radical minority perspective. *Comparative Education Review*, *44*(3), 245–271.

Perfetti, C. A., Rouet, J. F., & Britt, M. A. (1999). Toward a theory of documents representation. In H. van Oostendorp & S. R. Goldman (Eds.), *The construction of mental representations during reading* (pp. 99–122). Erlbaum.

Perry, K. H. (2012). What Is Literacy?—A Critical Overview of Sociocultural Perspectives. *Journal of Language and Literacy Education*, *8*(1), 50–71.

Pew Internet and American Life Project survey (2018). *Teens who are constantly online are just as likely to socialize with their friends offline*. Retrieved from https://www.pewresearch.org/fact–tank/2018/11/28/teens–who–are–constantly–online–are–just–as–likely–to–socialize–with–their–friends–offline/

Pew Research Center (2019). *About three–in–ten U.S. adults say they are 'almost constantly' online*. Retrieved from https://www.pewresearch.org/fact–tank/2019/07/25/americans–going–online–almost–constantly/

Potelle, H., & Rouet, J. F. (2003). Effects of content representation and readers' prior knowledge on the comprehension of hypertext. *International Journal of Human–Computer Studies*, *58*(3), 327–345.

Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Erlbaum.

Price–Dennis, D. (2016). Developing curriculum to support Black girls' literacies in digital spaces. *English Education*, *48*(4), 337–361.

Price–Dennis, D., (2019). What happens here can change the world: Preparing literacy teachers in the digital age. In Kinloch, V., Burkhard, T., & Penn, C., (Eds.), *Race, justice, and activism in literacy instruction* (pp. 23–34). Teachers College Press.

Price–Dennis, D., & Carrion, S. (2017). Leveraging digital literacies for equity and social justice. *Language Arts*, *94*(3), 190.

Price-Dennis, D., Holmes, K. A., & Smith, E. (2015). Exploring digital literacy practices in an inclusive classroom. *The Reading Teacher*, *69*(2), 195–205.

Prinsloo, M., & Breier, M. (1996). *The social uses of literacy: Theory and practice in contemporary South Africa*. Sached Books.

Pritchard, R. (1990). The effects of cultural schemata on reading processing strategies. *Reading Research Quarterly, 24*, 273–295.

Purcell–Gates, V., Duke, N.K., & Martineau, J.A. (2007). Learning to read and write genre–specific text: Roles of authenitic experience and explicit teaching. *Reading Research Quarterly, 42*(1).

RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. RAND.

Resnick, L, & Resnick, D. (1990). Tests as standards of achievement in school. *The uses of standardized tests in American education* (pp. 63–80). Educational Testing Service.

Reynolds, R. E., Taylor, M. A., Steffensen, M. S., Shirey, L. L., & Anderson, R. C. (1982). Cultural schemata and reading comprehension. *Reading Research Quarterly*, *17*(3), 353–366.

Richards, L. (1999). *Using NVivo in qualitative research*. Sage Publications.

Richards, L. (2015). *Handling qualitative data: A practical guide* (3rd ed.). Sage Publications.

Richardson, E. (2007). She was workin like foreal': critical literacy and discourse practices of African American females in the age of hip hop. *Discourse & Society*, *18*(6), 789–809.

Richardson, J. C., & Newby, T. (2006). The role of students' cognitive engagement in online learning. *American Journal of Distance Education*, *20*(1), 23–37.

Rogers, R., & Mosley, M. (2006). Racial literacy in a second-grade classroom: Critical race theory, whiteness studies, and literacy research. *Reading Research Quarterly*, *41*(4), 462–495.

Rowsell, J., & Burke, A. (2009). Reading by design: Two case studies of digital reading practices. *Journal of Adolescent & Adult Literacy*, *53*(2), 106–118.

Ruggiero, V. R. (1984). *The Art of thinking: A guide to critical and creative thought.* Pearson /Longman.

Salmerón, L., Kintsch, W., & Cañas, J. (2006). Coherence or interest as basis for improving hypertext comprehension. *Information Design Journal*, *14*(1), 45–55.

Salmerón, L., Sampietro, A., & Delgado, P. (2020). Using Internet videos to learn about controversies: Evaluation and integration of multiple and multimodal documents by primary school students. *Computers and Education*, *148*. Article 103796. https://doi.org/10.1016/j. compedu.2019.103796

Schreyer, J. (2012). Adolescent literacy practices in online social spaces. In *New media literacies and participatory popular culture across borders* (pp. 72–84). Routledge.

Shannon, P. (2017). *Progressive reading education in America: Teaching toward social justice*. Routledge.

Sheridan, M. P., & Rowsell, J. (2010). *Design literacies: Learning and innovation in the digital age*. Routledge.

Smith, F. (1988). *Joining the literacy club: Further essays into education*. Heinemann.

Smolin, L. I., & Lawless, K. A. (2003). Becoming literate in the technological age: New responsibilities and tools for teachers. *The Reading Teacher*, *56*(6), 570–577.

Souto–Manning, M., & Price–Dennis, D. (2012). Critically redefining and repositioning media texts in early childhood teacher education: What if? and why?. *Journal of Early Childhood Teacher Education*, *33*(4), 304–321.

Stadtler, M., & Bromme, R. (2007). Dealing with multiple documents on the WWW: The role of metacognition in the formation of documents models. *International Journal of Computer–Supported Collaborative Learning*, *2*(2–3), 191–210.

Stahl, S. A., Jacobson, M. G., Davis, C. E., & Davis, R. L. (1989). Prior knowledge and difficult vocabulary in the comprehension of unfamiliar text. *Reading Research Quarterly*, *24*, 27–43.

Steffensen, M. S., Joag–Dev, C., & Anderson, R. C. (1979). A cross–cultural perspective on reading comprehension. *Reading Research Quarterly, 15*, 10–29.

Steinkuehler, C., Compton–Lilly, C., & King, B. (2010). Reading in the context of online games. In K. Gomez, L. Lyons, & J. Radinsky (Eds.), *Learning in the disciplines: Proceedings of the 9th International Conference of the Learning Sciences* (pp. 222–229). International Society of the Learning Sciences.

Sternberg, R. J., & Baron, J. B. (1985). A Statewide approach to measuring critical thinking kkills. *Educational Leadership*, *43*(2), 40–43.

Stevens, E. Y., & Brown, R. (2011). Lessons learned from the Holocaust: Blogging to teach critical multicultural literacy. *Journal of Research on Technology in Education*, *44*(1), 31–51.

Stone, S., & Logan, A. (2018). Exploring students' use of the social networking site WhatsApp to foster connectedness in the online learning experience. *Irish Journal of Technology Enhanced Learning Ireland*, *3*(1), 42–55.

Stornaiuolo, A. (2017). Contexts of digital socialization: Studying adolescents' interactions on social network sites. *Human Development*, *60*(5), 233–238.

Stornaiuolo, A., & Thomas, E. E. (2017). Disrupting educational inequalities through youth digital activism. *Review of Research in Education*, *41*(1), 337–357.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage publications.

Street, B.V. (1984). *Literacy in theory and practice*. Cambridge: Cambridge University Press.

Street, B. (1997). The implications of the 'New Literacy Studies' for literacy education. *English in Education*, *31*(3), 45–59.

Street, B. (2003). What's "new" in new literacy studies? Critical approaches to literacy in theory and practice. *Current issues in comparative education*, *5*(2), 77–91.

Stribling, S. M. (2014). Creating a critical literacy milieu in a kindergarten classroom. *Journal of Language and Literacy Education*, *10*(1), 45–64.

Sutherland–Smith, W. (2002). Weaving the literacy Web: Changes in reading from page to screen. *The Reading Teacher*, *55*(7), 662–669.

Talib, S. (2018). Social media pedagogy: Applying an interdisciplinary approach to teach multimodal critical digital literacy. *E–learning and digital media*, *15*(2), 55–66.

Thomas, A. (2007). *Youth online: Identity and literacy in the digital age*. Peter Lang.

Thomas, E. E., & Stornaiuolo, A. (2016). Restorying the self: Bending toward textual justice. *Harvard Educational Review*, *86*(3), 313–338.

Tietje, L., & Cresap, S. (2018). Social justice simplified: How to teach a contested concept. *Journal for the Advancement of Educational Research International*, *12*(1), 80–96.

Turner, C. (2016, December 22). The classroom where fake news fails. All Things Considered. Retrieved from https://www.npr.org/sections/ed/2016/12/22/505432340/the–classroom–where–fake–news–fails

Van Drie, J., & Van Boxtel, C. (2008). Historical reasoning: Towards a framework for analyzing students' reasoning about the past. *Educational Psychology Review*, *20*(2), 87–110.

van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. Academic.

Vasudevan, L., Schultz, K., & Bateman, J. (2010). Rethinking composing in a digital age: Authoring literate identities through multimodal storytelling. *Written communication*, *27*(4), 442–468.

Vygotsky L. S. (1986). *Thought and Language*. Transl. and ed. A. Kozulin. The MIT Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John–Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press.

Walsh, C. S. (2007). Creativity as capital in the literacy classroom: Youth as multimodal designers. *Literacy, 41*(2), 79–85.

Walsh-Moorman, E., & Hovick, K. (2021). "This Is Crazy… She's Real": How fourth-grade readers establish source authority. *The Reading Teacher*, *74*(5), 559–568.

Wertsch, J. (1991). *Voices of the mind: A sociocultural approach to mediated action*. Harvard University Press.

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, *25*(1), 68–81.

Willoughby, T., Anderson, A., Wood, E., Mueller, J., & Ross, C. (2009). Fast searching for information on the Internet to use in a learning context: The impact of prior knowledge. *Computers & Education, 52*, 640–648.

Wineburg, S. (1991). Historical problem solving: A study of the cognitive processes used in the evaluation of documentary and pictorial evidence. *Journal of Educational Psychology, 83*, 73–87.

Wineburg, S. (1998). Reading Abraham Lincoln: An expert/expert study in the interpretation of historical texts. *Cognitive Science*, *22*(3), 319–346.

Wirth, L. (1945). The problem with minority groups. In Linton, R. (Ed.), *The science of man in the world crisis* (pp. 347–372). Columbia University Press.

Wortham, S. (2006). *Learning identity: The joint emergence of social identification and academic learning*. Cambridge University Press.

Xenos, M., Vromen, A., & Loader, B. D. (2014). The great equalizer? Patterns of social media use and youth political engagement in three advanced democracies. *Information, Communication & Society*, *17*, 151–167.

Zhang, S., & Duke, N. K. (2008). Strategies for Internet reading with different reading purposes: A descriptive study of twelve good Internet readers. *Journal of Literacy Research*, *40*(1), 128–162.