From Google Searches to Russian Disinformation: Adolescent Critical Race Digital Literacy Needs and Skills

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ABSTRACT: This study uses a Critical Race Digital Literacy framework to examine Black and Latinx adolescents' ability to critically evaluate race-related materials online. Participants completed four tasks that required them to engage with a range of race-related material, from search results to social media content. Findings indicate that the majority of participants demonstrated an "emerging" or "mastery" level understanding of search results and determining the trustworthiness of websites. Participants found evaluating the credibility of Twitter content as well as evaluating a Russian disinformation campaign's Facebook profile targeting African Americans considerably more challenging. In addition, though 34% recognized a video screenshot arguing that building a wall at the southern border is humane as racist, participants had difficulty combining this knowledge with an understanding of online propaganda. Few participants reached mastery on this task, and others that required them to evaluate social media content and recognize disinformation. As more online content and media are explicitly related to race or references specific racial groups, these findings highlight the need for more interventions to enhance competencies around critically evaluating race-related materials online.

KEYWORDS: Critical race digital literacy, media literacy, Internet, disinformation, civic online reasoning

Theoretical Framework
Background Literature
Method
Results
Discussion and Conclusion
References
Author Contact

Online misinformation, disinformation campaigns, and propaganda have become persistent problems. Growing numbers of educators and researchers

have begun to identify digital and media literacy as a crucial contemporary skillset for civic life online (Bennett, 2008; Boyd, 2017; Hobbs, 2010; Mihailidis & Thevenin, 2013). Fifty-three percent of young people ages 18-29 found online sources such as social media and news websites/apps as more helpful than other sources for learning about the 2016 U.S. election (Gottfried, et al., 2016). Young people need digital literacy skills in order to generate informed opinions, to be full participants in 21st century democratic life (Kahne, et al., 2012; Mihailidis & Thevenin, 2013), and to challenge oppressive media narratives (Mills & Unsworth, 2018). In their study of student online civic reasoning, McGrew and colleagues (2018) warn that, "When people struggle to evaluate information, they risk making decisions that go against their own interests" (p. 187); if they are unable to analyze the agendas of the people behind online sources, they risk becoming "easy marks for digital rogues" (p. 166).

Conversely, young people can build powerful and healthy communities through effective use of the Internet (Rheingold, 2012). This requires understanding how the Internet shapes received information (Lynch, 2016; Mason & Metzger, 2012; Pariser, 2011). It also means knowing how to seek and find high quality information (Kahne et al., 2016; Metzger, 2007; Metzger et al., 2010). These skills involve analyzing multimodal texts - navigating dynamic relationships between language, images, gestures, sounds, and movement (Lemke et al. 2015; Mills & Unsworth, 2018). While multimodal literacies are not new, multimodal texts have increased in circulation in the 21st century, with video and image sharing becoming part of young people's everyday lives (New London Group, 2000).

Perhaps most central to analyzing online material is understanding the ways that race and racism are expressed in multimodal texts. Adolescents encounter a barrage of often conflicting race-related messages online (Tynes, et al., 2011). As they are being exposed to increasing amounts of race-related material, their developing cognitive skills and abilities allow them to view race and racial discrimination in more abstract and complex ways (Chavous et al., 2008). This is critical because there is a foreign power successfully waging information warfare with conservative and Black American citizens specifically. Russia's disinformation campaigns and interference in the 2016 US election had the explicit purpose of exacerbating racial divides (DiResta et al., 2018). Because schools are often not able to provide curricula that focus on managing these messages, and even tend to mis- or under-educate students about race-related topics (Southern Poverty Law Center, 2018), it is important to examine gaps in adolescent critical digital literacies.

Theoretical Framework

We draw on critical race media literacy (recognizing, challenging, and reading societal power relationships related to race and racism in the media) for this study (King, 2017; Mills & Unsworth, 2018; Yosso, 2002, 2020) and focus on what we call critical race digital literacy (CRDL). This framework is informed by critical race theory (Crenshaw et al., 1995), traditional definitions of digital literacy (e.g., Buckingham, 2009; Martin, 2009) and online civic reasoning (Wineburg & McGrew, 2017). It allows us to center a critical analysis on race and the unique,

multimodal forms of oppression and mis- and disinformation adolescents face online. Like critical race media literacy, CRDL calls for developing a critical lens to read race in words and the world (Freire, 1970, 1973; Yosso, 2002). For this study, this is specifically focused on how adolescents read race in digital space, their ability to evaluate digital content (e.g., a fake Facebook profile created by Russian agents to deliberately mislead Black social media users), to recognize and counter deficit discourses, and to understand how algorithms produce search results.

We define critical race digital literacy as the knowledge, skill, and awareness required to access, identify, organize, integrate, evaluate, synthesize, critique, create, counter, and cope with race-related media and technologies. It includes the ability to critically and laterally read race and intersecting oppressions in digital contexts, as well as the ability to recognize and subvert the ways that technologies (algorithms, artificial intelligence, bots, etc.) oppress certain groups while maintaining the status quo for others. CRDL also includes recognizing the ways that technology can be used and designed to foment racial division to suit political and economic ends. Additionally, CRDL refers to one's capacity to develop historical knowledge and a lens to situate racist content, anti-Blackness, and whiteness. It incorporates an understanding of how attention and emotion have been weaponized in complex digital terrains, including Internet politics, education, work, social interaction, and entertainment, and cultivating capacities to navigate them. CRDL involves creating digital media, artifacts, and processes in ways that embody a person's interests and help to organize and liberate communities. Finally, being able to reflect on each of these competencies is an important aspect of CRDL.

Central to CRDL is the fact that racism is endemic in American culture and history, rather than solely a feature of exceptionally bad individuals or groups (Crenshaw et al., 1995; Delgado & Stefancic, 2000); these forms of racism are built into online structures and are not simply the result of one presidential campaign or a network of Russian bots. A critical race digital literacy perspective predicts that producers of race-related disinformation campaigns *and* mainstream media are both likely drawing on over 500 years of racist propaganda narratives that circulate ambiently within US culture (Kendi, 2016). It is important for adolescents of color to be able to critically identify and analyze these narratives so that they do not internalize them.

Background Literature

A growing body of research focuses on adolescents' digital literacy skills related to analyzing online content. Several studies have found that students struggle with searching for online information and evaluating it (Gasser et al., 2012; McGrew et al., 2018); these findings contradict arguments that digital literacy comes easily to so-called "digital natives" (Prensky, 2001). For example, Kahne and Bowyer (2017) found that young people were more likely to conclude that a mocked-up social media post was accurate if they agreed with the post's argument. Also, young people often assume that search results near the top of the page are more reliable than ones further down (Hargittai et. al., 2010; Pan et al., 2007; Westerwick, 2013).

Studies have also identified heuristics that adults use in assessing the credibility of a website, including its design, previous experience with the site, referral to the site by others, and the perceived expertise of the author (cf. Flanagin & Metzger, 2007; Fogg et al., 2003; Metzger et al., 2010; Sundar, 2008). Students use many of these same heuristics, including the design and ease of navigation of the site (Iding et al., 2009; Walraven et al., 2009), though these heuristics are not consistently effective for them or for adults. A consistent theme that emerged from empirical research is that participants were frequently convinced to trust websites based on their design features and visual information, overlooking critical issues of authorship and evidence.

This lack of alignment between digital literacy skills and contemporary media challenges poses a need for policy makers, researchers, and educators to think more closely about what digital literacy skills young people need today. For example, Sam Wineburg argues that students need to learn to "read laterally" (Strauss, 2018), like the professional fact-checkers he and his colleagues studied. Instead of lingering on one site, these fact-checkers open up new tabs to see what other sources say about the person or organization behind the information (Wineburg & McGrew, 2017).

Several studies from the Stanford History Education Group highlight the digital literacy challenges that students face in this new media landscape and the online civic reasoning skills students need to navigate it (Breakstone et al., 2019; McGrew et al., 2018; Wineburg et al., 2016). They define civic online reasoning as the "ability to effectively search for, evaluate, and verify social and political information online" (McGrew et al., 2018, p. 168). Through iterative design research on this construct, the researchers developed a series of assessment tasks presenting students with examples of digital media and asking them to respond to each. They also developed a rubric to assess these responses, consisting of three levels: beginning, emerging, and mastery. The rubric assesses students' ability to ask these critical questions: Who is behind the information? What is the evidence? What do other sources say?

In their 2018 study with 405 middle school students, 348 high school students, and 141 college students, only small portions of the sample reached mastery on most of the tasks (McGrew et al., 2018). Most high school students had difficulty identifying who was responsible for online content. Many of them were not able to name and critique sponsored posts. Similarly, most of them scored "beginning" on tasks that asked them to assess the evidence behind various claims made in comments on news sites, posts in Facebook conversations, and an image posted on an image sharing site (McGrew et al., 2018). The group's 2019 follow-up study noted similar findings with regards to more recent online content. For example, 52% of participants believed a grainy video that was shot in Russia was strong evidence of voter fraud in the US. Researchers gave a sample of 3,446 students a total of six tasks and found at least two thirds of participants' responses were at the beginner level (Breakstone et al., 2019).

While the Stanford History Education Group designed their rubric as a classroom assessment tool for middle, high school, and college students, they also contributed to media literacy research by establishing an approach to qualitative measurement of online civic reasoning. However, the media analysis tasks that they asked participants to complete do not focus on race-related digital media. The ability to critique racist content online is another aspect of this area of research that warrants focused investigation. This study builds on their work, addressing this limitation by asking youth to reason about race-related online content.

Race-Related Information Online

The ability to think critically about race online is increasingly important as adolescents negotiate life online. Recent research shows that Black adolescents receive an average of five derogatory messages per day with many of these experiences occurring online (English et al., 2019). For adolescents of color, these online experiences may include being called a racial epithet, being excluded from online spaces, being stalked, and being sent racist images (Tynes et al., 2015). For example, an image circulated online of a student from Hurricane High School in Utah mocking Martin Luther King Jr. Day with a staged lynching (Carlisle, 2018).

Given these daily experiences, in order for efforts to address misinformation, disinformation, and propaganda to be relevant to young people of color, they must include analyses of the ways that race-related and white supremacist materials proliferate online, and the ways in which such materials contradict and/or mutually reinforce mainstream media practices (Benkler, et al., 2018; Daniels, 2018; Ganesh, 2018). For example, significant disinformation and propaganda that circulated during the 2016 election was race-related. DiResta and colleagues (2018) found that the Russian Internet Research Agency's (IRA's) "most prolific" efforts on Facebook and Instagram "specifically targeted Black American communities and appear to have been focused on developing Black audiences and recruiting Black Americans as assets" (p. 8); at the same time, the IRA's other accounts amplified messaging from Blue Lives Matter pro-police groups' reactions to the Black Lives Matter movement. Benkler and colleagues (2018) found that Russian interventions played a smaller role in the 2016 election than a broader right-wing media ecosystem rooted in long-term US political developments, which established anti-immigrant and Islamophobic practices as main elements of Trump's 2016 campaign discourse. Nonetheless, the election presented people of color with a range of race-related disinformation and propaganda.

Young people will need to be able to identify race-related messaging that might be aimed at them in the present and future. Identifying openly race-related disinformation is necessary but not sufficient. Equally important is identifying tacitly racist narratives that also exist in the mainstream media and in the content and infrastructure of social media and the Internet itself (Daniels, 2018; Noble, 2018).

With its emphasis on unmasking hidden white supremacist narratives, a critical race digital literacy lens is well-situated to support youth in these tasks. In their review of literature on critical race multimodal literacy research, Mills and

Unsworth (2018) found and analyzed 44 studies on how students critique the racialized messages in books, films, popular music, and other media. However, they noted that few of these studies addressed digital media contexts of literacy use. Only one looked at online interaction, and this was the online aspect of a school-based program that the researchers found did not address anti-racist struggles (Kumar, 2014). Mills and Unsworth call for more empirical studies to fill this gap.

The current study extends this body of critical race media literacy research, developing an initial approach to critical race digital literacy research by studying how young people make sense of race-related digital media. It also adds to the existing work around online civic reasoning by extending McGrew and colleagues' (2018) and Breakstone and colleagues' (2019) methods of assessing digital media literacy skills with a rubric, adding a necessary focus on media analysis tasks involving issues of race. Bringing these two strands of research together, we posed the following research questions: How do adolescents perform on tasks that require them to evaluate race-related materials online? What critical race digital literacy needs do adolescents have to ensure that they can successfully navigate a post-2016 digital landscape?

Method

Participants were 302 youth, including African Americans ($N = 200$) and Latinxs/Hispanics ($N = 102$) between the ages of 11 and 19 residing in the United States. Participants were recruited from GfK Group (now operating under the name Ipsos) KnowledgePanel, the largest online panel that relies on probability-based sampling techniques for recruitment. The sample was 54.6% male ($N = 165$) and 45.4% female ($N = 137$), with an average age of 14.89 ($SD = 2.64$). Of the Latinx participants, 67 were Mexican, Mexican American, or Chicano; 13 Puerto Ricans; 3 Cubans; and 19 from "other" Spanish/Latinx or Hispanic groups. Participants represented a range of socioeconomic backgrounds with 20.2% ($N = 61$) reporting a household income of $19,999 or less; 17.9% ($N = 54$) $20,000-$39,999; 18.5% ($N = 56$) $40,000-$59,999; 17.6% ($N = 53$) $60,000-$84,999; 4.6% ($N = 14$) $85,000-$99,999; and 21.2% ($N = 64$) over $100,000.

This study was approved by the University of Southern California's Institutional Review Board prior to data collection, which was completed in July and August of 2018. GfK/Ipsos adhered to all ethical guidelines and followed the research protocol outlined in the IRB application.

Procedures

GfK Group/Ipsos collected data for this study on behalf of the university. To obtain the sample, GfK used households from its KnowledgePanel database, a probability-based web panel designed to be representative of the United States. Panel members are randomly selected using a variety of methods (e.g., mailings, phone calls, etc.). Once a household accepts the invitation to join the panel network, they complete a demographic profile of the household's members, subsequently becoming eligible to participate in surveys. Once assigned to a

survey, households receive a notification email letting them know there is a new survey available for them to complete.

The current online survey consisted of two stages: 1) initial screening for African American or Latinx/Hispanic households with teens between the ages of 11 and 19 and 2) the distribution of the main survey with eligible respondents. Parents were initially screened using a screener interview that confirmed their racial-ethnic group and if they had a child between the ages of 11 and 19 who was currently available to complete the survey. If they met the criteria, they were asked to provide consent for their child to complete the study survey. All participants then provided their assent (or consent if 18 or over). Of the 1,035 participants who were initially sampled, 428 participants completed the survey (completion rate = 41.4%). Of those who completed the survey, only 302 participants fit the eligibility criteria and were included in the final dataset provided to the research team (qualification rate = 70.6%). The survey took a median time of 14 minutes to complete.

Measures

Participants' ability to critically evaluate race-related content online was assessed with four tasks.

Google Search and Website Analysis

The first task we developed assessed young people's ability to evaluate the legitimacy of search results produced from a Google search. This task presented participants with the following prompt: "Imagine you have been assigned a research project on little known facts about the Civil Rights Movement. You start with a Google search and the first page of your results is below. Please answer the questions to follow." The prompt was followed by a screenshot of the first page of a Google search. Participants were asked to explain how the websites listed on the page came up in the first page of their search results. Response options included: 1) "The top results are the most legitimate," 2) "The top results are the most visited sites," 3) "The top results include the most commonly searched sites," 4) "A company could pay for the results to show up on the first page," 5) "An algorithm was used to produce these results," and 6) "I am not sure why these are my results." Participants were then asked: "How do you determine if a website is trustworthy?" Responses included 1) "I look at the title of the website," 2) "I look at the design of the website," 3) "I check the URL for clues," 4) "I read the content of the website," 5) "I check who created the website," and 6) "I am not sure."

Kanye West Tweet

The second task asked young people to evaluate the accuracy and credibility of the information presented in a tweet from a prominent figure. Participants were presented with a screenshot of a tweet from rapper Kanye West that read: "I freed a thousand slaves I could have freed a thousand more if only they knew they were slaves. Harriet Tubman." They were asked "Is this an accurate quote by Harriet Tubman?" with response options 1) "yes" 2) "no," and 3) "I'm not sure." Participants were then asked in an open-ended question, "How do you know this is/is not an accurate statement?"

Prager University Video Screenshot

To assess young people's abilities to determine whether or not information in a video screenshot was credible or racially biased, they were asked to respond to a video post from a "friend" on Instagram. Participants were provided with the following prompt:

This is a screenshot from a video from the website Prager University. The speaker makes a case for building a wall at the southern border of the United States. He argues that this is a humane way to reduce new illegal immigration. Imagine your friend posted this video on their Instagram page. In two sentences or less, respond to this post.

Blacktivist Facebook Group

To assess young people's abilities to identify a fake Facebook group targeting Black users, participants were presented with the following prompt: "Below is a screenshot of a Facebook group. Please review the group image and answer the follow-up questions." The screenshot was of a Facebook page called Blacktivist, a group that grew a following by espousing a commitment to Black issues and unity. The picture showed an event announcement for a "Black Unity March." The screenshot is from a Russian disinformation campaign. Participants were asked two questions: "Would you join this Facebook group?" with response options 1) "Yes," 2) "No," and 3) "I'm not sure." The second question asked "Why would you [not] join this Facebook group?" Response options included 1) "I am not interested," 2) "This is a fake profile," 3) "This profile seems to align with my political values," 4) "I don't have a Facebook account, but would support this group if I did," and 5) "I'm not sure."

Analysis

Informed by the Stanford History Education Group's Online Civic Reasoning Assessment (McGrew et al., 2018), we developed a preliminary rubric for each online task evaluating 1) search results and trustworthiness of a website, 2) accuracy of information in a celebrity tweet, 3) credibility of information in a video screenshot, and 4) legitimacy of a Facebook group. Each rubric included three categories: beginning, emerging, and mastery. While evaluation criteria were specific to each task, they were indicative of the underlying concept of online reasoning in regard to race-related content. Similar to the online civic reasoning framework (McGrew et al., 2018), "mastery" level responses indicated that young people were able to evaluate content by identifying the source and evaluating and substantiating the credibility of the source. Participants who were "emerging" were able to evaluate the material to a degree but were unable to fully explain their evaluation or included strategies that were unrelated to developing effective online reasoning skills. Lastly, "beginners" were unable to effectively appraise the material, often citing unrelated or problematic strategies to evaluate the content presented in the tasks. We extend the civic online reasoning framework by pairing it with critical race digital literacy to assess abilities on specific tasks related to critically reasoning about race-related content online. Furthermore, emerging and mastery level responses acknowledge that race or racism might play a role in what is being expressed in the online materials and are able to determine its legitimacy with this in mind.

For tasks 1 and 4, we categorize the closed-ended responses based on levels of ability indicated by each response option, which we describe below. For the open-ended responses in tasks 2 and 3, we conducted a deductive thematic analysis to uncover and organize patterns and themes arising from the data.

Deductive thematic analysis allowed us to identify patterns and themes based on a priori theory and hypothesis grounded in previous research (Boyatzis, 1998; Daly, et al., 1997). In this case, we evaluated young people's critical race digital literacy skills, which required a basic understanding of how to evaluate accuracy and legitimacy of digital content. The first two authors used SHEG's rubric and a CRDL lens to evaluate responses to these tasks. The second author coded open-response data in task 2 for any responses that spoke to the credibility of Kanye West's tweet as it related to Harriet Tubman and the content highlighted in the tweet. Responses that indicated the tweet was accurate and/ or that Kanye West is a reliable source for this information were coded as "beginning." Responses that indicated "no" but did not show an understanding of why they believed the tweet was false or did not provide a reason at all were categorized as "emerging." Responses that indicated "no" and mentioned the lack of credibility of the information and its source were categorized as "mastery." Responses in task 3 were also coded and categorized based on their ability to provide an analysis of the video's content that demonstrated a critical race lens that acknowledged the racism or racial bias embedded in the messaging. In the next section, we discuss the results of our analysis.

Results

Performance on Critical Race Digital Literacy Tasks

CRDL provides an analytic lens with which we can better understand how and to what extent youth are able to identify, evaluate, and respond to digital content with explicit or implicit racial messaging. In the present study, participants were asked to complete tasks that assess CRDL skills including the ability recognize when information being spread widely online is not accurate or credible, such as the tweet in Task 2, as well as the ways that technology can be used to propagate disinformation and sow racial division to suit political and economic ends in Task 4. Results for each of the four digital literacy tasks participants completed appear below. Participant responses that were most representative of performance at each level were selected as examples.

Task 1: Civil Rights Movement Google Search Results and Website Analysis

In response to the question: "Can you explain how the websites listed on the page came up in the first page of their search results?" 36% chose at least one beginner level response, which included, "The top results are the most legitimate" or "I'm not sure why these are my results." A majority of participants, 75%, chose at least one of the emerging responses which were, "The top results include the most commonly searched sites" and/or "The top results are the most visited sites." Lastly, 35% of the responses included at least one of the choices indicating a mastery level understanding. These mastery level responses were "An algorithm was used to produce these results" and "A company could pay for the results to show up on the first page."

Youth were also asked how they determine if a site is trustworthy. Respondents were allowed to choose more than one of the steps presented to

them. Only 23.2% of the sample said "I'm not sure" in response to how to determine whether a site is trustworthy. The rest of the sample indicated either "emerging" (e.g., "I look at the design of a website") or "mastery" (e.g., "I check who created the site"). When presented with a race-related search task, the majority of the sample appeared to be able to use at least one emerging level strategy for determining why they would receive particular search results as well as how they would determine trustworthiness.

Task 2: Kanye West Tweet- Evaluating Social Media Content

For this task, youth were categorized as "beginning" if they answered "Yes" or "I'm not sure" when asked if the tweet from Kanye West was accurate. Eighty percent of adolescents scored as "beginning," indicating they interpreted the inaccurate quote as an actual quote of Harriet Tubman or did not indicate an explanation why they might not be sure. These responses generally were followed by explanations that were uncritical of the source and indicated little understanding of how to critically evaluate the information. One respondent answering yes provided the following explanation: "It said on the Internet," endorsing the idea that everything online has to be accurate. Another wrote "Because Kanye is a very smart and well-versed artist/rapper. I trust in his knowledge on this topic." Almost 19% of respondents were scored as "emerging" responding "no" when asked if the quote was accurate. However, these respondents did not display a critical understanding or justification for why they did not think the quote was true. One respondent wrote, in addition to responding "NO," "because slaves KNEW they were slaves."

Less than 1% of youth were scored as "mastery." Mastery level respondents provided an explanation why they said the quote was untrue and were able to critically evaluate and articulate why Kanye West may not be a credible expert on the subject matter. One respondent, appearing to read laterally, wrote, "This is not accurate because there is no physical documentation that Harriet Tubman ever said that, and you can't take someone's word for it even though they're famous." Another respondent wrote in response to the question on how they determined if it was accurate: "Research I've conducted during Black history month over years in school. I don't remember reading it, and Kanye West is not very credible." These participants could substantiate their claims with race-related research they had conducted across years. Respondents also wrote, "Kanye West tweeted it, and he's known for tweeting alternative facts…I don't trust anything he posts! He said slavery was a choice."

Task 3: Response to Political Content ("Building the Wall") on a Website

Out of 294 responses, about 10% of respondents were scored as "beginning," saying they would not respond or that they agreed with the ideas expressed in the video. These responses justified having a wall and/or had no racial analysis of the argument in the video. For example, one participant wrote "It's a good idea to have border security. It's really not up for debate." In this quote, the participant shows support for border security, but does not speak specifically about what that should look like or who is affected by a wall being built. Another

participant wrote, "I am ok with my friends posting this because jobs need to be for Americans." In this example, the participant not only agreed with the position that a wall should be built, but also brought in the commonly used argument suggesting that Mexican immigrants take jobs from "Americans." This argument is not only inaccurate but rooted in racism and xenophobia. It also indicates that this participant has been exposed to these ideas beyond this study, and it informs how he makes sense of and responds to them.

About 34% expressed disagreement with the ideas in the video, with many citing them as "racist" and/or "inhumane." These participants were scored as "emerging." Given our critical race digital literacy framework, it is important that such a large percentage could point out the racist nature of the video. Many of the remaining responses were more ambiguous, with some expressing that a wall is not a good idea but that more border control was necessary. We did not classify these responses, as more information is needed to assess their evaluation of the site and not their views of the ideas. Less than 1% of respondents were scored as "mastery" indicating competence in critically evaluating the video. These responses questioned the credibility of the video. One student wrote "This is not a credible site." Others wrote to their "friend:"

"Before posting this, you should have concrete and valid research."

"Not enough information to support the claim. This is an unfound propaganda claim."

"This is just propaganda to keep all people who are not white out of the country. A wall is a bad idea, and the immigration laws can be made stronger and still be humane, without a stupid wall."

Participants were able to critically evaluate the message in the video and point out the white supremacist propaganda.

Task 4: Blacktivist Facebook Group – Recognizing Russian Disinformation

Results indicate that about 60% of the respondents reported that they would *not* join the Facebook group, while 9% said they would join the group. About 31% said "I'm not sure" in response to whether or not they would join the group. In response to the second question asking why they would/would not join the group, participants who chose the response options, "This profile seems to align with my politics" (n=20) or "I don't have a Facebook account, but would support this group if I did" (n=24) were categorized as "beginning." This was about 21% of the respondents. Participants who indicated that "This is a fake profile" were categorized as "mastery." About 8% of respondents (n=17) fell into this category. About 6% of respondents were coded as "emerging," indicating that they would not join the group but were unsure of why they would not join (n=12). About 65% of

the sample (n=136) indicated "I am not interested" and were not categorized as we were unable to assess their competency levels with this response.

Adolescents' Critical Race Digital Literacy Needs

We extend the thematic analysis to our second research question on what critical race digital literacy needs students have. Applying the CRDL lens, we noted the skills that performers at each level might possess or have to develop to successfully navigate an increasingly complex race-related digital landscape.

For the first part of Task 1 that asked respondents to analyze Google search results, more than one-third of participants were able to identify at least one "mastery" level reason for why they received the search results. Adolescents at the "beginning" and "emerging" level would need additional support in being able to detect that issues of power are at play, including how results may reflect corporate interests and the fact that algorithms produce the search results. Though not directly assessed in this study, all students need to be able to recognize the fact that algorithms have built in biases and can yield results that reinforce the superiority of whites (Noble, 2018).

Participants also performed well on the second part of the task, determining whether a site is trustworthy, with more than three quarters of the sample choosing an "emerging" or "mastery" strategy. In determining who created the site, those who excelled on this task could determine whether a site was created by a hate group and disguised to look legitimate. Respondents may have also read laterally to decipher the source and a site's credibility. Even when a site was deemed credible or reputable, it does not mean the creators did not endorse stereotypes about minoritized populations. Students should be taught to critically read the site to determine if the material reproduces stereotypes, provides inaccurate race-related information, or shares emotionally charged (Carillo, 2019) words that have a racial-ethnic component.

Task 2 was considerably more challenging than the first, with respondents overwhelmingly performing at the "beginning" or "emerging" level when analyzing a social media post by a celebrity. These participants need training in considering the source of online material. Some thought Kanye West's celebrity status made him more thoughtful about posting (e.g., "Kanye said it and I doubt that he'd embarrass himself with such a false quote if he didn't think or know it was real"). They should understand that celebrities and influencers online warrant the same amount of scrutiny that would be given to non-celebrity accounts. They should also understand that fame and identification with celebrities might engender a false sense of trust online. Other participants appeared to have confirmed the inaccurate information in the tweet in what should have been credible texts they had previously read (e.g., "I have seen it in some of my history books") or while lateral reading (e.g., "I used google to search her quote to verify if it were truly her statement"). This shows how lateral reading by itself can go wrong when reading about race-related material and suggests students need other CRDL skills such as critical reading, an understanding that searches can yield biased results, and historical knowledge to situate this information. Students who were scored at the

"mastery" level could place the tweet in historical context by critically reading their educational texts and experiences as well as other websites and platforms. Mastery level performance would also include counternarratives that note slave resistance and the fact that the US was built on the free labor of enslaved Africans.

The fact that less than 1% achieved mastery on Task 3 suggests participants also found it challenging. Mastery level performance on a video that attempted to persuade viewers that building a wall was humane included coupling the ability to point out the racist aspects of the arguments with the ability to recognize propaganda. Those at the "beginning" level either agreed with the content (e.g., "I'd agree because building this wall would be the most efficient way to refuse illegal immigration. It may seem cruel but it's not") or went a step further, as previously mentioned, and justified building the wall (e.g., "This video has two sides to it, one side with it and one side against it. I think it is a humane way because immigration can lead to terrorist attacks"). This suggests educators need to provide students with training on contemporary and historical knowledge about US-Mexico relations, as well as immigrant contributions to the US economy. Students should practice critiquing whiteness and racist tweets and videos about Mexicans from Donald Trump, for example, and in digital spaces in general. Students also need specific activities that would help them counter the negative stereotypes of Mexicans with rich educational materials on their cultures and traditions.

The final task required those with mastery to understand components of Russia's 2016 disinformation campaign to influence the US election. Targeting conservatives and Black people, their efforts included bots, trolls, social media groups, YouTube videos, and other material often fronted by Black people but run by organizations like Russia's Internet Research Agency (DiResta et al., 2018). Twitter trolls, for example, would have an image of a Black person in their profile pic, but make posts and comments aimed at swaying populations toward Russian interests (DiResta et al., 2018). In many instances, they used African American Vernacular English in their impersonations and tried to mimic posts with African American interests. Helping students achieve mastery with this task would mean making social media experiences a part of the school curriculum. It would also require teachers to model how students would recognize disinformation and give them multiple learning opportunities to practice how to take action against these campaigns.

Discussion

This study utilized a critical race digital literacy framework to determine whether adolescents were able to critique and evaluate race-related material online. The study also examined needs adolescents have with respect to being able to navigate a post-2016 election digital landscape. Results suggest that students have a range of skills in race-related Google searches, website analysis, and detecting racism in a video screenshot. Participants could determine that a video purporting that building a wall at the southern border of the US is humane was actually racist, for example. Where they appeared to have the most challenge was pairing a sophisticated analysis of racism with an understanding of how to

recognize propaganda, disinformation campaigns, and misinformation. With the exception of the search task and determining the trustworthiness of a site, few participants (less than 1% on Tasks 2 & 3 and 8% on Task 4) achieved mastery on critical race digital literacy tasks.

Critical race digital literacy needs students have include developing counternarratives of racist discourses online, training in how to situate race-related digital content in historical context, detecting issues of power in search results, and determining the range of race-related disinformation and misinformation that can come from a range of sources both foreign and domestic. Findings suggest a need for digital and media literacy curricula to center race and racism (Yosso, 2002) in order to meet the challenges of a digital landscape with increasingly sophisticated methods to oppress, misinform, and sway people to behave in particular group interests.

This study is the first nationally representative survey of critical digital literacy specifically focused on race-related material. Findings both align and contrast with extant research. First, the study is consistent with previous research that suggests very few students (.3-8.7%) achieve mastery in their ability to evaluate digital material (Breakstone et al., 2019). In addition, research has shown that the fewest number of mastery responses appear to be on social media tasks (Breakstone et al., 2019). Interestingly, while the majority of participants in previous research failed to recognize Russian disinformation, most respondents in the current study said they would *not* join the fake Russian group. Moreover, 8% were able to explicitly state that they would not join because it was a fake group.

Because extant research included majority white samples and found that Black participants consistently performed the lowest on the online reasoning tasks (Breakstone et al., 2019), this study included a sample of Black and Latinx youth only and clearly outlined students' strengths as well as their needs. For example, students in this study appeared to be fairly adept at race-related Google search analysis, including a quarter of participants who considered the source of a site when determining its trustworthiness. Participants also exhibited strengths that were not assessed in Breakstone and colleagues' previous research: the ability to detect racism on sites. This skill is essential for students to have as white supremacists increasingly become more mainstream online.

At the same time, students need more explicit critical race digital literacy training. Watkins's (2018) research on what he calls the "digital edge" showed that participants were not able to go on social media or video sharing sites like YouTube because of school/district policies. Because of this, students were not able to get the much-needed practice to evaluate the websites or other material they may have encountered. Although students clearly showed that they could sufficiently conduct a Google search for race related material and determine how to evaluate those results, more advanced analyses were lacking.

Though the Stanford History Education Group's research has suggested that students should be trained in lateral reading and this training should replace current media literacy curricula practices that include checklists for determining the

source of information (Wineburg & McGrew, 2017), this study suggests that lateral reading alone will not suffice. Students need to couple the practice of lateral reading with critical race digital literacy skills, including critically *and* laterally reading race, detecting algorithmic bias, placing race-related information in historical context, and recognizing the many ways specific racial groups can be targeted in mis- and disinformation.

Study limitations include the fact that tasks were not created for specific age groups and an analysis of performance by age on tasks was not included. The fact that so few participants achieved mastery on tasks, however, suggests that race-related digital content may pose a challenge for all ages. Future research should include more developmentally appropriate race-related tasks. In addition, findings suggest an urgent need for interventions to enhance youth competencies around critically evaluating race-related materials online. Poor performance on determining the legitimacy of racist content in particular could potentially have differential impacts at different stages of development for youth of color.

In conclusion, this study's findings suggest digital and media literacy curricula as of 2018 inadequately prepared adolescents for the barrage of race-related information and messages they may have received online. To our knowledge, there are still no widely used K-20 critical digital literacy curricula that center race. This had implications for the 2020 election and for democracy in the US broadly. Without critical race digital literacy skills, for example, young people who are eligible may have been more vulnerable in the face of a flood of disinformation aimed at Black and Latinx voters to suppress their vote (Bond, 2020). Findings for this study may be used to redesign digital literacy curricula and better prepare young people to uphold democracy.

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