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Cover Page Footnote

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Understanding the Roles of Public Libraries and Digital Exclusion Through Critical Race Theory: An Exploratory Study of People of Color in California Affected by the Digital Divide and the Pandemic

By Raymond Pun

Abstract

With the arrival of COVID-19, public libraries have been closed or partially re-opened in various phases. This qualitative study explores the lived experiences of select library users in California, particularly people of color who experience digital exclusion, and how they use their public libraries prior to and during the pandemic. The study is guided by two research questions: 1. What are the barriers in using public libraries' technology resources experienced by patrons of color before and during the pandemic? 2. What are their perspectives, purposes, and beliefs in using technologies in the public library before and during the pandemic? Using critical race theory to illuminate users' stories and experiences in accessing the internet through their public libraries, the research underscores the constraints that patrons of color experience and how public libraries and its workers can re-imagine their technology services and resources to mitigate restrictions posed by the digital divide and to better serve their communities of color.

Keywords

Public libraries, critical race theory, digital divide, qualitative study

Author Biography

Ray Pun (he/him) is a librarian at the Alder Graduate School of Education. He has presented extensively and published numerous articles on a variety of topics including information literacy, global librarianship, and student engagement in academic libraries. In 2016, Ray participated in the Institute of Research Design Librarianship (IRDL) program. He holds a Doctorate in Education, a Master of Library Science, a Master of Arts in East Asian Studies, and Bachelor of Arts in History.

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Introduction

Lack of access to information can leave people stranded, at a disadvantage, and unable to seek career or educational opportunities. According to the Federal Communications Commission (FCC), there are at least 21 million people in the United States who still do not have a connection to the internet (2019). Known as the “digital divide,” this enduring phenomenon refers to the unequal access between groups who have or do not have access to technologies based on demographic characteristics such as age, education level, geographic location, language, race, and socioeconomic status (Gilbert, 2010; Hollins, 2015; Yu, 2006).

People of color are more affected by this issue compared to white people. In numerous research studies by the Pew Research Institute, Free Press, and Institute for Local Self-Reliance, racial disparity in digital access has been deemed critical (Floberg, 2018; Smith, 2014; Turner, 2016). “One study found that children in one of every three Black, Latinx, and Native American households did not have broadband access at home” (Kienbaum, 2020, para. 1). These alarming statistics on digital exclusion experienced by communities of color continue to serve as crucial discussion points for policy makers, educators, and community members to address collectively.

A major factor that has deepened the divide and generated urgent policy discussions is the emergence of COVID-19, which has disrupted everyday life globally in 2020. Those who do not have digital access may feel the intense pressures of the pandemic more than others. To reduce further outbreaks, libraries, universities, and community services were forced to shut down or were “flipped to the digital” (Romm, 2020). This approach has significant implications, leaving millions of people who do not have digital access to be vulnerable. People without digital access struggle to complete their schoolwork; they may not have access to apply for housing or for jobs. Researchers Vogels, Perrin, Rainie, and Anderson (2020) reported, “the vast majority of Americans view the impact of the internet positively, and nearly nine-in-ten say it’s been an essential or important tool during the coronavirus outbreak” (para. 14). Internet inequality existed before the pandemic and now the situation has been exacerbated for many people without internet or public library access.

The digital transitions can and have paralyzed educators and students alike who may not have access to technological resources or the necessary technology skills to

navigate the switch. Technology policy reporter Romm (2020) explained, “The disruption wrought by the coronavirus threatens to exacerbate those digital woes, raising the question whether the U.S. government and telecom industry should have done more to cure the country’s digital divide – well before a pandemic gripped the nation” (para. 4). Public libraries were forced to shut down their facilities. As a result, their operations of service and ability to provide access to the internet were immediately reduced for public library users. Trapped between a pandemic and the digital divide, these patrons may find their lives to be in upheaval.

To understand the lived experiences of such individuals, this exploratory study examines how public library users, specifically people of color (POC), were affected by the digital divide before and during COVID-19. The study is guided by two research questions:

1. What are the barriers in using public libraries’ technology resources experienced by patrons of color before and during the pandemic?
2. What are their perspectives, purposes, and beliefs in using technologies in the public library before and during the pandemic?

To answer these two questions, this study utilized in-depth interviews. Using critical race theory (CRT), the study highlighted the perspective and voices of participants who identify as POC in understanding the types of barriers and challenges that they experience under the digital divide (Pun, 2020a). In this context, people of color identified as non-White and as Black/African American, Hispanic/Latinx, Native American, and/or Asian/Native Hawaiian/Other Pacific Islander. By centering on lived experiences of POC as public library patrons, this study provided opportunities for public libraries to reimagine their services for ethnic groups that they serve and to rethink ways to improve their services to such communities.

Theoretical Framework: Critical Race Theory

To understand people of color’s experiences under the digital divide, the present study applies critical race theory in highlighting their voices. Critical race theory is the “idea that race is a socially constructed category that is deeply implicated in the use, and circulation of power in society. Thus, its two principal objects of analysis are race and power” (Torres, 2013, para. 2). Legal scholars such as Derrick A. Bell (1980), Kimberlé Williams Crenshaw (2010), and Richard Delgado (1995) defined this concept and described the role of race in history and lived experiences, including workplaces, institutions, policies, and communities. Noted scholar Gloria Ladson-Billings (1998) exclaimed that “thinking of race strictly as an ideological concept denies the reality of a racialized society, and its impact on people in their everyday lives” (p. 9). To understand the role of CRT in the community, it is

important to inquire and address the relationships among power structures, and oppressions that permeate across institutions and systems and their relations with POCs. Critical race theory is an appropriate theoretical framework for this study because it enables the researcher to understand how race plays a central role in policies and practices of the public library and how these facets affect patrons of color. The connection between one's access and experience can be better understood through a CRT lens.

One major tenet of CRT, storytelling, is a useful approach in understanding and amplifying oppressed voices, enabling POCs to “communicate to their white counterparts matters that the whites are unlikely to know” (Delgado & Stefancic, 2012, p. 9). Storytelling is a crucial component of CRT because this approach deconstructs the normative experiences and provides a voice to those who are oppressed. Storytelling rejects the normative stance or perspective that leads to racial oppression. By engaging and allowing new voices to emerge, new perspectives can disrupt dominant narratives and allow opportunities for individuals in positions of authority and communities at large to reconsider ways to address concerns or issues that were dismissed before.

Applying CRT through storytelling can illuminate the deep and underlying issues of the power structures that exist in public libraries and highlight how systematic racism is prevalent and experienced by communities of color today, particularly under the digital divide. This study applies CRT through a qualitative methodology by asking participants who identify as public library users of color and community members who experience digital exclusion to recount their narratives and stories in using public library technology resources prior to and during COVID-19.

Literature Review

While there has been an abundance of quantitative studies that examine the impact and effect of the digital divide on communities-at-large, there is limited qualitative research on the lived experiences of people of color experiencing the digital divide and the pandemic, and the role of public libraries in mitigating and/or perpetuating digital exclusion in the United States (Alves, 2004; DiMaggio & Hargittai, 2001; Gilbert, 2010; Hargittai & Hinnant, 2008; Hollins, 2015; Rowsell et al., 2017; Valadez & Duran, 2007; Van Dijk, 2006; Warschauer, 2004). There is also a gap in the literature on the role of CRT in understanding the experiences of those who are digitally excluded. This current study adds new research to this area by applying qualitative methods and critical race theory in understanding the relationship between the public libraries and the digital divide.

Sociologist Eric Klinenberg (2018) asserted that public libraries provide not only space, but a “social infrastructure” to their patrons when it comes to information.

Public libraries' affordances are critical in fostering a "social infrastructure" that can increase civic engagement, literacy, and learning in all forms for their communities (Klinenberg, 2018). Public libraries may also provide technology resources and training as well as Wi-Fi access to their communities. However, public libraries can also play an unconscious role in limiting their support services or resources to their communities experiencing the digital divide. This section highlights research describing how public library resources and services for communities of color can be perceived as a barrier.

In highlighting racial disparities with technology access, Kinney (2010) described how public libraries are addressing the digital divide; the author examined research on the number of U.S. libraries providing computer stations and internet access to their communities. Using 2000 county-level census data, Kinney (2010) found a "widening disparity in the number of computers available in the areas with higher versus lower percentage of non-white and non-English speaking households" (p. 105). This study is dated; however, the findings provide relevant context for this current study. As Kinney (2010) wrote, "In all years [between 1998-2006], libraries in more racially and linguistically diverse counties (as measured by percent of non-white and non-English-speaking households) had significantly fewer terminals per 1000, and the mean difference increased over the 9 years of observation" (p. 126). Despite the date of this publication, these types of barriers continue to resonate for participants in this study.

Moreover, high cost of internet services and low-income status have been major barriers to digital access (Turner, 2016). Free Press, an independent organization that focus on the media and technology landscape, published a white paper that examined the systematic racial discrimination on home-internet adoptions (Turner, 2016). Based on U.S. census and income data collection, the author discovered that accounting for demographic factors and descriptors including income, age, and education, many racial and ethnic groups still fall behind compared to whites in home-internet adoption. Furthermore, the study suggested that "structural racial discrimination contributes to the digital divide" (Turner, 2016, p. 5). In addition, internet providers have not identified affordable solutions to support communities of color. As a result, this "depresses internet adoption among people of color" (Turner, 2016, p. 7). The report signaled that there are external barriers that prohibit digital access for people of color. Those who are digitally excluded may turn to community anchors and institutions such as public libraries to obtain digital access. This current study highlights how library patrons of color experience systemic barriers to access within the library, and how their identities as people of color shape their understanding of institutional constraints.

Public libraries have also partnered with other organizations to address the digital divide. In one case study, Pun, Xiong, Ortega, and Nauk (2017) explained their

partnership between the library of California State University Fresno and the Fresno County Public Library (FCPL) system in providing technology workshops to the Fresno County community. Under such collaborations, the authors described how they provided free workshops and consultations, with assistance including applying to jobs online and one-on-one technology support in various languages such as English, Arabic, Hmong, Spanish, and Khmer languages. The authors urged the need for such collaborative initiatives to support the diverse communities of public library users. However, the partnership was a grant-funded initiative that ran in 2016–2017. The lack of financial support for this collaboration to support technology training for the community can be viewed as a barrier to access. The impetus for this project focused on addressing the lack of technology workshops and consultations offered by FCPL to the community. Without these types of support or services, public libraries unconsciously inhibit opportunities for their users to learn technology skills.

To understand how public libraries can provide support and reinforce barriers, Hollins' (2015) research draws on these connections. Hollins' (2015) dissertation research on the experiences of African-American community college students who were “digitally denied” access found that students relied on their public libraries to use technology resources to complete their school assignments but faced barriers. Applying CRT, Hollins (2015) captured their voices to reveal, “While public libraries have become a resource for gaining access to computers and the internet, they are over-crowded, and the time limit placed on users is not sufficient for community college students” (p. 85). These findings were also echoed by participants in the current study. By centering on the lived experiences of African-American community college students, Hollins' research demonstrated and acknowledged the barriers posed by public libraries' technology resources, services, and policies.

Whitacre (2019) asserted that libraries are natural partners in supporting digital inclusion for marginalized communities; the one-year study explored how hotspot devices and programs from the public libraries can extend online services to rural communities in Oklahoma. Using mixed methods approach, Whitacre examined the barriers, community responses and needs, connections to audiences across racial and age categories, and the financial sustainability of the program. The author explained that libraries play a key role in supporting the rural communities' programs and activities: local residents valued the services and target audiences were met. Cost was a major barrier to such programs, which supported training for the library staff in using the devices. Whitacre's (2019) research found that libraries' work in providing hotspot devices can reduce the digital divide in isolated regions with limited broadband infrastructures.

To address the gap in the literature on the impact of the digital divide toward public library users of color's experiences, the current study captured the barriers in using

and accessing public library's technology resources from the patrons' experiences. By highlighting their stories, perspectives, beliefs, and purposes in using technologies in the public library prior to and during COVID-19, and through critical race theory, this current study focused on how the public libraries support their needs and to what extent that public libraries may still hinder digital access.

Methods

The interview method is an important qualitative approach to understand the participants' experiences through their own reflections and thoughts on the public libraries and digital divide. In addition, the method amplifies their voices and experiences (Given, 2008; Hollins, 2015; Kristensen & Ravn, 2015). This approach is aligned with storytelling, which is a tenet of CRT (Delgado & Stefancic, 2012).

The researcher collected and analyzed qualitative responses from active public library users of color who experience the digital divide. This study acknowledged that there are community members who are experiencing the digital divide and are not active users of the public library. However, the research included only active library users because their stories and experiences may explain how the public libraries' technology resources are, or are not, meeting patron needs and expectations, including the barriers produced by the digital divide.

Through a referral process by public librarians in select libraries in California, the researcher initially identified and recruited nine participants who fit the criteria of being an active public library user of color and experiencing the digital divide. The users, public librarians, and libraries are not named in this study because the researcher aims to protect their privacy. Three withdrew from participation and the remaining six participated in semi-structured interviews. To recruit participants, convenience sampling was applied so the researcher can identify participants more easily and under specific conditions (Allen, 2017).

The interview questions used in this study were open-ended and broad (see Appendix A). Each interview session lasted between 60 and 90 minutes. Participants had opportunities to share and reflect their experiences using their public library's technologies and how they were impacted by the digital divide. This IRB-approved research study ensured safety, confidentiality, and empathy from the researcher when addressing sensitive information shared by participants. Potential risks that participants could have experienced included feeling uncomfortable when talking about the digital divide in personal accounts. Participants could have discussed their experiences of racism, microaggressions, or negligence based on their interactions at the public library, particularly with the public library staff. Solórzano, Ceja, and Yosso (2000) described microaggressions as "subtle insults (verbal, nonverbal, and/or visual) directed toward people of color, often

automatically or unconsciously” (p. 60). During the interviews, participants could have felt ashamed to recount their experiences and their lack of knowledge or skills when using the public library’s computers. Sharing these lived experiences and stories by people of color connect directly to this study’s theoretical framework: CRT.

This study minimized such risks by affirming that participation was voluntary, and the participants could skip any questions or stop the interview at any time without the need to provide a reason. Participants were also informed that their responses were only used for research purposes. This was reviewed with each participant prior to each interview.

Six individual in-person interviews were conducted prior to COVID-19. All six participants responded to all 14 questions and shared their experiences using technologies at home and in the library see (Appendix A). During COVID-19, only two participants agreed to participate in a follow-up phone interview. These interviews were much shorter and lasted 20–25 minutes each (see Appendix B).

After conducting all the interviews both pre- and during COVID-19, participants’ responses were transcribed. In reviewing transcripts, the researcher developed a codebook and coded each transcript with emerging themes and subthemes, revising the codebook as necessary for pre-COVID period. Strauss and Corbin (1994) described grounded theory as a methodology that occurs during the actual research process where there are interactions between data collections and analyses. Using this approach, the researcher compared the responses from each interviewee and generated common themes that highlighted their shared experiences based on actual data in hand. The researcher identified the structures for each theme and searched for patterns in participants’ responses.

This study anonymizes the participants’ names with a number code instead for both types of session: pre-COVID-19 and during COVID-19 (See Tables 1 and 2).

Participant Code	Age Range	Gender	Race
1	18–30	F	Asian
2	31–49	F	Black/African American
3	31–49	M	Hispanic/Latino American
4	31–49	F	Asian
5	31–49	F	Asian

6 31–49 F Asian

Table 1: Background of Participants for Pre-COVID 19 Experiences

Participant Code	Age Range	Gender	Race
2	31–49	F	Black/African American
4	31–49	F	Asian

Table 2: Background of Participants for During COVID 19 Experiences

Based on these interviews, the qualitative study highlighted coded data from these individuals through analyzing their experiences using the critical race framework. The responses and codes from two interviews conducted during COVID-19 were separated from the pre-COVID-19 responses.

Results

The interviews generated important themes and considerations. By understanding participants’ stories regarding the barriers, and their purposes and beliefs in using technology resources in their public libraries, this study uncovered new opportunities for public libraries to rethink their service to better support such patrons of color. These major themes included differences in access and financial and social impacts (see Table 3).

Themes	Selected Open Codes
Differences in access	Affordability; pre-paid cards; using mobile devices with limited internet access for specific purposes at home; 2-hour policy; printing issues, asking for more time; affected by library hours, planning ahead and preparing in advance
Financial and social impacts	Confidence; self-autonomous; comfortable with technologies; learning new skills and tools like information technology; photoshop; hardware and tools; reaching out to someone with

similar backgrounds; diversity and inclusion	software programs; completing schoolwork
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Table 3. Themes Emerged from Open Codes

Constraints to Access

Access differences are marked by types of constraints experienced by participants. Differences in access also contained a subtheme which is time. Levels of access are determined by two types of constraints identified in this study: circumstantial and institutional constraints (Pun, 2020b). Under circumstantial constraints, participants' levels of access are determined by their own situations. For example, all participants shared that they do not have internet access at home, but some have a cell phone with limited broadband access and others may have a laptop but no internet access. Participant 4 revealed that she could not access the internet effectively due to the lack of cellular service in the area.

Participants may have other duties that prohibit them from fully using the public library's technology resources. This can be a day job or being a student. For participants 5 and 6, they are college students who live far away from their public libraries. Participant 5 explained, "School is like college. Most of the kids are very noisy, even though it says quiet [in the academic library], they are not quiet. The public library is most of the time quieter than the school library. I prefer the public library." Participant 5 described, "[The public library is] closer to my work and it's more convenient. And if I stay in school then I hit traffic." Furthermore, she explained, "That's why I go to the public libraries because [the campus library] close[s] at 7 pm." For participant 6, the campus library was not convenient. She remarked, "Ah, yeah, but I don't have school every day, so I am very close to the public library." As a result, they may be unable to visit their libraries during the daytime. Distance is a factor that can affect an individual's circumstances.

Institutionally, participants have expressed that their access to the internet and activities were limited by their public library's own policies, resources, and services (see Table 3). The one issue that all participants mentioned was they felt that the two-hour limit in using the public library terminal restricted their access. Time serves as a barrier or conduit to access. Time can restrict access based on institutional policies such as computer access or hours of service. All participants shared that they visited the public library at least two to three times a week and that they often use the technology resources in the public library whenever they visited. When it comes to the policy, participant 5 did explain that she may use the library's computer but also felt the time limit on the computer is not long enough, but it is dependent on the assignment: "I guess going in knowing that it's only two

hours, you try to finish your stuff in two hours as much as possible...” Participant 2 also echoed similar sentiments: “Using the internet is like...more time can be given. No, I never had two hours. You only get half an hour or an hour. That's the only thing I would say. But other than that, no, because if you have something important to do, it takes you longer to do it. And it takes kind of all my time. And you have to shut it down. You're not done with your work.” Limited computer and internet time forces participants to prioritize their work. Participants were also asked how long they usually use library computers and if they have enough time. For participants 1, 2, 3, and 4, they consistently stated that the internet access in their public library should be expanded beyond its 2-hour daily limit. As participant 1 shared, the limit is “not enough time, the staff are nice about extending it, but I feel like you have to tell them ahead of time, so they understand what you are doing.”

When asked to reflect on how the public library can improve its services to meet their needs, participant 1 shared how there used to be computer classes in different locations so that she can take them and learn different skills such as navigating the internet. When asked to expand on her response, participant 1 recalled: “They used to have computer classes [...] I've asked, they don't have it at the locations that I would like to go to. I would like it if they would have more computer classes [...] there's some skills that I can pick up that can help me with navigating the internet or websites.” Participant 3 echoed the same response: “Well, they should offer more workshops, classes. Sometimes they used to do that. And I'm not sure what happened. I can't get these classes anymore and sometimes I like to attend, listen, and learn new things.” When asked what he would like to learn, Participant 3 mentioned social media and commented, “There are so many tools out there, and it's very difficult to keep up when you don't have a computer or internet at home. You come to the library to learn new things.”

Financial and Social Impacts

Financial and social impacts of the digital divide on public library users of color prior to COVID-19 are captured in this study. This includes subthemes such as reliance on public libraries completing school coursework using library technology, and cultural/language affinities (see Table 4). When asked why they use the public library's technology resources, the responses were related to social and financial matters (see Table 4).

Participants explained how they are seeking job opportunities online. Most explained how they have applied for jobs online, prepared their resumes, and drafted cover letters for such opportunities. Participant 2 remarked, “The computer in the library, I use the internet [or] I am either using to fill out job applications, I am either using the computer to research information that I am learning about different cultures, different backgrounds.” Others have also explained the need to

learn new skills, including those involving technology such as Photoshop or email. Participant 3 shared, “I learned about something I don't know exists. So, I need to come to the library to, you know, learn new technology, it's a happy thing, I feel.” In addition, some participants (4, 5, and 6) are in school and trying to complete their schoolwork by using public library resources. This is not uncommon, as Hollins' (2015) research demonstrated that college students may use a public library's computers to complete school assignments to cope with the experiences of being digitally denied. For critical financial needs, Participant 1 explained how they need access to legal and housing forms, to apply for subsidized housing online. There is a reliance on public libraries in gaining access to technology resources. This was echoed in participants' responses on what they do using public library technologies for financial and educational purposes.

Socially, all participants explained that they use the computers/internet to write for leisure, use social media tools to connect with families and friends, and watch videos on YouTube (see Table 4). When asked if they would prefer their own computer and internet at home over coming to the library, all participants responded that they would still come to the library and use its resources, spaces, and services. The community that the library brings to these participants was noted. According to participants, there is a sense of trust that they see in the library and its resources. Participant 2 shared how she is a writer, and how the library created an opportunity for her to write: “I am actually a writer, so I love to write... I like to write nonfiction and I like to write fiction as well..”

Themes	Subthemes	Sample Participant Experiences	Participant Code
Financial impact	Seeking and preparing for job opportunities such as searching for jobs online, creating resumes and cover letters, applying for jobs.	“I am either using to fill out job application ...”	2
		“I go to the computers to find businesses, their application is online, not having a computer makes it hard. I go to the library to use the computers to apply for jobs.”	1

	<p>Learning new skills such as technology related skills: Photoshop, emailing, etc. that relate to job opportunities.</p>	<p>“Sometimes I am working on my resume and I need more time. “</p>	3
		<p>“I log in. Sometimes I search for jobs, sometimes I check my email...”</p>	4
		<p>“PowerPoint and I would want to learn how to do Photoshop.”</p>	4
	<p>Legal/housing needs – applying for subsidized housing online.</p>	<p>“I can go to social services in the office to wait for a few hours to complete [the forms] online so I go to the computers to do that as well.”</p>	1
		<p>“I am also on government assistance... I go to the library to the computers to complete it online.”</p>	1
Social impact	<p>School support including writing assignments, researching and looking up resources for school.</p>	<p>“I type essays and letters and use the Wi-Fi [for school]”</p>	5
		<p>“I use the [computer] for school. I’m looking for some book materials for research ...”</p>	6
	<p>Leisurely such as writing for leisure and using social media tools and YouTube.</p>	<p>“I may even watch something on YouTube sometimes. Sometimes I just want to watch something.”</p>	2

		“I enjoy learning and browsing using social media tools like Facebook, to connect with friends...”	3
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Table 4: Themes, subthemes, and experiences of participants under the digital divide pre-COVID-19

Through CRT, this study found common barriers and interests from participants. Most participants shared how they would be more likely to reach out to a library worker with similar backgrounds based on their perspectives. Having someone with a similar background may assist them with printing, extending the library time, or helping them use the computers. Most importantly, participants 1, 5, and 6 felt comfortable because they experience language barriers, but library staff would help them. This cultural access is defined by Van Dijk (2006) as an important factor of consideration when studying the digital divide. Van Dijk stated, “A general conclusion from a number of investigations of usage is that, increasingly, all familiar social and cultural differences in society are reflected in computer and internet use” (p. 230). In addition, Fairlie’s (2004) study highlighted how language can be an obstacle toward access: “Language barriers appear to limit computer and internet access among Mexican-Americans” (p. 34). A library staff member who shares similar backgrounds as the patron can be encouraging to library users of color who experience digital exclusion, empowering them to seek help and expand their skills.

Critical race theory is a crucial theory to uncover stories and experiences that are often concealed and hidden. These emerging stories offer a deeper perspective of how a phenomenon such as the digital divide affects underrepresented groups. Time and access are deeply affective and interconnected components in the lives of users who are digitally excluded. Time plays a much more significant role, as evidenced by the concept of time being mentioned over 70 times collectively by all participants. Time determines the access points. Policies that stipulate time limitations and hours of operation in the library may restrict access for users. Participant 3 expressed their frustration simply: “I want more time.” In Kinney’s (2010) study, disparities of access to computers were pronounced, and one main issue was restriction of time access.

Hollins’ (2015) research also found that there were major barriers experienced by African-American college students when using their public libraries’ technology resources to complete their schoolwork. Critical race theory in this study highlighted similar experiences with participants who identify as college students. Participant 5 stated, “I needed extra time on the computer, and I asked an [Asian] person [to extend the time limit].” Participant 5 sought for a library staff member

who shared a similar background as herself to extend the time limit on the internet. The issue of time affects access, and it was apparent to participant 2, “A lot of people are getting off work. You know? And if they don’t have library access and they are getting off work then they are only allotted a couple of hours. Then you know by the time you make it there it is already closed.”

Trust in libraries as community institutions are also apparent. Participant 3 perceived library workers positively, “I think librarians are knowledgeable. And they are wonderful for helping people who need help with technology. I think it’s good. We all learn from each other.” Participant 2 agreed that the library is a place she can trust: “Yes, when you go and see so many people who are different. You learn stuff.”

In the subtheme related to social impact, cultural/language affinities emerged. Farkas (2020) wrote, “When people see their identities represented and celebrated by their library, they are more likely to see the library as a space for them” (para. 3). These representations can translate to new opportunities: the staff can more effectively provide technology training and workshops for underserved communities when staff reflect those communities. The researcher asked participants if they are more willing to ask for help from library staff who share a similar background as the participant; most participants agreed they would. For example, participant 1 recounted “I feel like I can say it in my own language, I am hoping the person is understanding what I am trying to do. My English skills can be better.” Participant 5 also explained that she would be more likely to ask for help if someone shares the same background as her, particularly in the language context. She can speak to them, such as to ask for extra time on the computer: “I was more comfortable asking them that rather than asking someone else.” There is a cultural rapport that participant 5 described in her experiences with the library staff who share a similar background. Participant 6 agreed that she would also ask for help because she does not understand English very well and that library staff have helped her before because of the language factor: “Usually yeah I asked them if they have some people employed [who speaks my language], that they can help me, if not, they tried to explain me by not the words, you know.” For participant 3, he felt that it would be helpful and important to have a library staff with a similar background as him. He explained that he has seen the library staff help all people, and everyone has helped him so far. However, he paused and reflected some uncertainty: “I feel I would be likely to get more help, maybe, but I’m not sure.” Two participants expressed that it did not bother them to have someone from a different background to help them.

Based on these shared experiences and stories, participants have used their public libraries to advance their interests, education, and careers. Public libraries may provide the space and technology resources to their communities, but they may also have limitations that can be constraining to communities, particularly communities

of color. Again, these areas fall under institutional constraints: the lack of technology workshops in different languages and the lack of library staff that share a common background/language with participants. As a result, public libraries may have a responsibility to address their own policies, services, and resources and aim to reduce such institutional barriers. Participants' stories provide an important opportunity to reframe how public libraries provide equitable services, particularly to people of color.

During COVID-19 Experiences

The researcher followed up with all participants in February 2020, and participants 2 and 6 agreed to speak about their experiences during COVID-19 (see Table 2). In brief 30-minute conversations, they each expressed frustration and sadness. When asked how they were doing, participant 2 stated, "I'm not happy at all, because [the public library] was very close for me to get to within walking distance, and it's a little challenging I can't really, you know print what I need. You know my phone is so small and like messes in my eyes I can't keep staring at the phone for long periods of time. You know, so it's kind of saddening."

Participant 4 explained that with her two children at home, and how difficult it has been to work from home. "I want to be human beings again because literally [my children are] like eating each other in the house." Participant 4 also stated that she decided to get internet access at home because there was no other option available for her children to do their schoolwork. Initially, she took her children to a public library nearby to use the Wi-Fi from the parking lot but there were too many people and the situation worried her. Participant 2 expressed how the situation affected her over time, "In the beginning I was more so frustrated and sad by it. But all I can do is just go slow and hope that this pandemic will be over. But yeah, I'm not able to really print things or research information or update things from my email, you know, as I would like to, because like I said my phone is so small and it's slow, you know, trying to download certain things and stuff and it just crashes down on me sometimes so yeah I mean it's affected me."

These limitations certainly impact participants' access to information and ability to manage technology-related business. COVID-19 has forced libraries to restrict access for participants and others. This has left them completely vulnerable since their only source to the internet was the public library.

Discussion

To answer the first research question, *what are the barriers in using public library's technology resources experienced by public library users of color before and during the pandemic?*, participants shared that barriers include institutional and

circumstantial constraints. Institutional barriers are perceived as standing issues that participants felt challenged their access points. The 2-hour limit policy in using public terminals, the operating hours, the lack of technology workshops, and lack of a diverse workforce are barriers to access. Despite providing public terminals, Wi-Fi, and staff support, these factors still resonate with participants as specific issues within the libraries. In addition, participants' circumstances may restrict access in using their public library's technology resources. They may have challenges in using computers or they may live far away from their public libraries; these circumstances reveal the community members' relationship with their public libraries as they experience digital exclusion.

As public library users of color, participants' thoughts on the lack of diverse workforce in their public libraries are important because these individuals recognize and value such diverse workforce. Guided by critical race theory, we can see that participants' experiences and stories matter. It becomes clear that they value their public libraries, and how they see such services could be improved to better meet their own needs. Their stories reveal that public libraries, often viewed as champions of the community, can still have areas for improvement and growth.

Regarding the second research question, *what are their perspectives, purposes and beliefs in using technologies in the public library before and during the pandemic?*, participants' purposes and perspectives in using public library technologies varied but their underlying beliefs remain consistent. Library technology resources provided social and financial opportunities. Participants' purposes include searching for jobs, applying for housing, taking their children to do schoolwork, or completing their own homework. Some participants strongly felt that their public libraries could do more to support their needs. This is connected to some of the institutional constraints that they have experienced, including the lack of diverse library workforce or technology workshops in their libraries. In addition, they all see the library's public computer policies to be restrictive. Participants all strongly value their public libraries as they have gained opportunities to do different types of work in a shared space.

During COVID-19, it has become challenging for individuals to use their public libraries. Participants experience deep institutional and circumstantial constraints. They still need to use their public libraries but are conflicted due to pandemic fears and the libraries' facilities being closed with limited operating hours and services. By understanding participants' experiences during and prior to COVID-19, we learn that public library users experiencing digital exclusion see this situation as very challenging and disruptive to navigate. This constraint is both institutional and circumstantial because participants have very limited access to the internet and may need to spend their own resources to do so.

Limitations

The limitations in this study varied. First, the sample size was limited, and further decreased due to COVID-19 barriers. Prior to COVID-19, the study initially recruited nine participants; three dropped out prior to the interviews and six remained in the study. However, it's important to note that their stories are valuable in understanding their lived experiences under the digital divide. The study was specifically recruiting for active public library users of color who experience digital exclusion. This research is based on the opinions and feedback of a very specific group of public library users of color. The beliefs, thoughts, and purposes shared by this group are not necessarily representative of all underrepresented communities. It was uncertain if there are other individuals who experience digital exclusion in intense ways, and their narratives were not captured from this sample.

It was also unclear whether participants truly felt comfortable to share their lived experiences. There was no apparent hesitation during any of the interviews; however, there could have been consideration in how to make participants feel more open in sharing their responses. This can be connected to a language factor because all the interviews were conducted in English. Some participants described themselves as bilingual, but it may have been helpful to conduct the study in a language that participants may understand in order to fully capture their digital exclusion experiences. The study could not fully capture all experiences of the participants. There may be other ones who have been deeply affected but chose not to participate or did not see the opportunity to participate in this study. As a result of the number of participants in this study, it became clear that there could be more community members who may feel differently and may experience digital exclusion in intense ways that were not captured or perceived by the participants in this study. Using a critical race theory lens, the present study has amplified the voices of individuals in a portion of the population affected by this issue.

Recommendations

The recommendations have institutional implications. As noted, the study found that all participants rely heavily or entirely on their public libraries for access. As this study uncovered, participants are very committed to using their public library's resources and services. New community broadband projects can be helpful initiatives, but they may not fully address the larger issues (Hines, 2019). If the services do not recognize or acknowledge the barriers and experiences of their users of color, including financial, then these issues will persist, and equity work will serve only those who are in privileged positions.

It is highly recommended that educators, library workers, and policymakers strongly consider the perspectives of communities of color when deciding how to advocate or build digital inclusion programs and services collectively. By aiming to address systemic racism, CRT provides a method in understanding and sharing the lived experiences and stories from communities of color. The theory can be a useful approach in gathering perspectives that are often overlooked and ignored.

As addressed in this study, most participants shared that they would feel more comfortable speaking with someone with the same background when help-seeking in the library. Funding support could be used to expand service hours, computer access time, and hire library workers with language skills that reflect the community's demographics. These representations can translate to new opportunities, as the staff could provide technology training and workshops for underserved communities. Participant 3 perceives library workers positively, and shared "I think librarians are knowledgeable. And they are wonderful for helping people who need help with technology. I think it's good. We all learn from each other." The trust in libraries as community institutions are also apparent. As participant 2 agreed that the library is a place that she can trust, "Yes, when you go and see so many people who are different. You learn stuff."

Advocating for libraries is a tall order and must be part of an ongoing campaign. Future studies may aim to include a larger and more diverse sample size, to demonstrate how funding can improve the lives of public library users of color regarding technology access and provide policymakers with clear rationales for allocating more financial resources to the community libraries. The findings of this study gathered a small sample size to understand public library users of color's experiences and found remarkable stories that would expand our preliminary understanding of the effects of digital exclusion on individuals.

In addition to future research, libraries should consider updating library's public terminals and policies to be more user-friendly. As participant 2 remarked, "If [the library staff] can fix those viruses on the computer so that the computer's internet won't be slow. Because that gets frustrating because that's cutting into the time as well." Participants also shared that circumstantial constraints due to their locations may limit their access to the libraries, particularly when libraries aren't open in the evenings.

Time is a major factor that all participants agreed could be rectified. Time affects access. The types of constraints are institutional and circumstantial. For the policy itself on computer access, the time limit should be expanded as participant 4 felt, "You know, using the internet is like, more time can be given." Participant 2 recognized that there are other institutions that have different parameters set: "Every library is different, but the specific one that I go to, I am only allowed two

hours [...] Some libraries the time is unlimited but now they are limiting the time. But that kind of sucks.” These voices reflect what participants find to be dissatisfying in their public libraries and as participant 2 shared, they are aware of inconsistent policies to computer access. By identifying ways to modify and improve access points to the internet, public users of color like those who participated in the study, will feel less constrained and able to pursue their work more successfully. Ideally, these are challenges that should be in discussion with patrons, information technology staff, and public services staff to find a solution that could be supportive rather than restrictive.

Institutionally, the library can determine its policies and practices. Circumstantially, library users may work or attend school during the day and may not access the library in the evening due to the library’s limited hours in the evening. Users may also live far away from a library which takes time for them to visit the library. While these circumstances cannot be changed because they are based on individuals’ situations, the library itself can consider changing institutional policies and practices to be user centered, such as operating hours, increasing time limitations to the computer/internet, maintaining a more diverse workforce, or organizing technology workshops.

Another key recommendation is that institutional policies need to be reflective of a community’s needs when adjusting operating hours and access to computers. In addition, recruiting a diverse workforce that reflects the community and offering technology workshops and training are critical. We acknowledge that all of these changes may be contingent on funding issues, yet these changes can have a positive impact toward the community. As Jonathan Sallet (2020), a Benton Senior Fellow on broadband policy stated: “Librarians note that the provision of skills training is a natural fit with the historic missions of their institutions—offering a trusted space in which people of all ages can learn in the ways that best suit them. Thus, digital equity efforts should include institutions trusted by the community, including community anchor institutions” (para. 8).

Libraries are often viewed as trusted institutions in the community as participants in this study deeply felt. Outreach to targeted populations needs to be carefully planned to be effective. See Xiong, a Hmong-American college student and ambassador to the “Touch the Community” computer training program in the public library systems, emphasized the need for cultural outreach to specific underrepresented communities: “I worked sessions in the affluent, predominantly white, northern Fresno, and sessions in central Fresno, which is predominantly Latino and Southeast Asian American. Yet, not a single client I saw was of Hmong descent. To improve services to the Hmong community, we need to work directly with services that cater to them and find people who are culturally aware of the needs of the Hmong and how to market to them” (Pun et al., 2017, pp. 304–305).

Underserved communities may not be aware of such resources and may experience digital exclusion. This is a critical recommendation to consider. Libraries should consider surveying and interviewing their communities to identify their needs. Libraries can also partner with community organizations to raise awareness of such technology resources and services offered in specific languages or identify the hours or workshops that support their community's needs.

Conclusion

This exploratory study aimed to share and highlight the voices of public library users of color who experienced the digital divide before and during COVID-19. The study was guided by two research questions: *What are the barriers in using public library's technology resources experienced by public library users of color before and during the pandemic?* and *What are their perspectives, purposes, and beliefs in using technologies in the public library before and during the pandemic?*

The research found two types of constraints that participants of color experienced: circumstantial and institutional. Circumstantially, participants may not be able to fully access their libraries due to their own personal situations. Institutionally, libraries are responsible for some barriers based on their policies and operations. These types of institutional constraints can be re-examined to understand how they may restrict users' access. Themes developed from this study include differences in access, and financial and social impact of digital exclusion on individual public library patrons. Critical race theory was applied in this study to illuminate the perspectives that participants of color may have experienced under the digital divide. We learn that their experiences varied and that, while they all valued library resources and services, they want their libraries to reflect their communities and support their needs, even during this critical moment. The stories highlight the need for public libraries to reconsider how to best support communities of color and their community's needs, particularly regarding digital exclusion.

When the COVID-19 pandemic is managed, libraries and its workers must rethink and implement how they center their work in supporting communities of color. The long-term impact on public libraries and the communities they serve remains to be seen. Funding and advocacy work should continue to be directed to community anchors such as public libraries in supporting broadband access and technology services to their communities in collaboration. Without such funding, communities experiencing digital exclusion will continue to be impacted by this issue. Heller (2019) recommended that library workers must identify the motivations of technology users and continue supporting communities' needs. The public library has a major role and responsibility in supporting, creating, and cultivating communities by building new relationships and values. Communities of color are particularly experiencing these challenges more intensely than others, and it is

important to see and understand what and how individuals are experiencing these issues during this time.

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Appendix A: Interview Questions Pre-COVID-19

1. Can you share your background: race and gender?
2. What is your age? 18-30, 31-49 or 50+?
3. Do you have a computer at home? What about internet access?
 - If yes, what type of internet services do you have at home?
 - If yes, what devices do you use to access the internet?
 - If yes, what are the benefits or challenges of using these devices?
4. Describe why and how you typically use the computer in the public library
 - What type of things do you do on the computer?
5. Do you access the internet every time you use the computer in the library?
 - If yes, how long are you on it?
 - See question 3, If yes, if you have a computer at home, why do you use the internet at the library?
6. How often do you visit the library to use the Wi-Fi/computers?
7. When you use a library computer, how long are you usually on it?
 - Do you have enough time available on the library computer?
 - Are there any challenges with the amount of time available?
8. Do you feel like you are skilled or good in using the computer?
 - Can you provide examples on how you define “good”?
9. What technology skills would you like to know more, and what about potential benefits and challenges in learning such skills?
10. If you had an option to have your own computer and internet access at home, would you choose that over coming to the library? Why or why not?
11. What are the benefits of using the library computer compared to home?
12. In what ways have you been impacted by receiving (or not) technology resources living in your area?
 - Do you ever use the library resources such as the library workers to help or assist you?
 - Can you describe your experiences getting technology help from your public library system?
 - Is there anything you would like them to do more of or less of?
13. If there's a library staff member who shares a similar background as you, are you more willing to ask for help? Why or why not?
14. How do you think the public library can improve its services to meet your needs?
15. Do you know of other people such as friends or family members who also use the public library's technology resources?
16. Is there anything else you would like to share that was not previously discussed?

Appendix B: Interview Questions during COVID-19

1. When was the last time you visited the library?
2. What were you doing before getting the internet and after when the library closed for the four weeks?
3. Do you have internet access at the moment?
4. How do you feel now since libraries are closed?
5. Since you cannot visit the libraries, how has that affected you?
6. Anything else you'd like to share?