Identity Alignment and the Sociotechnical Reconfigurations of Emotional Labor in Transnational Gig-education Platforms

Ben Zefeng Zhang^{1*}, Dipto Das² and Bryan Semaan³

*Corresponding author(s). E-mail(s): bzfzhang@umich.edu; Contributing authors: dipto.das@utoronto.ca; bryan.semaan@colorado.edu;

Abstract

Teaching has often been characterized as a labor of love. In reality, despite their passion, teachers often find themselves underpaid and unrecognized, leading them to engage in taxing emotional labor. Emotional labor in traditional education settings is not new; what is new is how teaching, particularly online teaching, has become increasingly data-driven and transnational. With the burgeoning popularity of online educational industries in China, many American teachers are entering the transitional gig economy and starting to interact with students, parents, and educational standards in cross-cultural contexts. Based on 24 semi-structured interviews with U.S. teachers who worked on various Chinese gig-education platforms, this paper documents their challenges and how such platforms reconfigure their emotional labor, enabling them to reaffirm their identities as teachers and caregivers and rekindle the passion that gave their lives purpose and meaning. However, these platforms, underpinned by Chinese cultural values and data-driven technologies (e.g., datafication, algorithms, and surveillance), which we dub "transnational emotional computing," unveil emergent forms of emotional labor with which participants must contend. This work contributes to a human-centered conceptualization of identity alignment and carries theoretical

^{1*}School of Information, University of Michigan, 105 S. State Street, Ann Arbor, 48109-1285, MI, US.

²Department of Computer Science, University of Toronto, 40 St George Street, Toronto, M5S 2E4, ON, Canada.

³Department of Information Science, University of Colorado Boulder, 1045 18th Street, Boulder, 80309-0315, CO, US.

and design implications for the future of transnational gig platforms, especially for cross-cultural digital knowledge labor.

Keywords: Gig Platforms, Digital Labor, Emotional Labor, Datafication, Identity, Knowledge Worker, Identity Alignment, China

1 Introduction

Gig work, or economic activity wherein workers generate income outside of traditional and institutionalized long-term employment arrangements, has existed for many years. In recent years, the gig economy has emerged as a robust marketplace of "crowdwork" and "work-on-demand via app" [1]. In this new economic labor system, digital platforms, or gig platforms, now serve as intermediaries between workers and clients, facilitating entrepreneurial activities and labor tasks of different complexities [2]. The gig economy has become integral to a functional global society, from popular location-based gig platforms that manage the work of transportation, food delivery, and manual labor like Uber, Lyft, GrubHub, and TaskRabbit, to gig platforms that manage remote, location-independent tasks like Upwork and Amazon's Mechanical Turk (MTurk).

While the gig economy is a global phenomenon, scholars have predominately addressed the uses and implications of gig platforms in Western contexts, with less attention paid to the rise of gig platforms developed in the Global South [3] or the transnational quality of gig platforms as they migrate across borders and mediate relationships between people across cultural contexts. China, specifically, is one of the largest gig economies in the world [4], yet, Chinese platforms and their impact on our global society are often overlooked in HCI and CSCW scholarship [3]. Our research addresses the question of how transnational gig platforms developed outside of the West mediate relationships and interactions between Western workers and consumers in potentially productive and adverse ways.

Identity has been studied from various perspectives [5, 6], conceptualized as a self-concept [7], a social construct derived from group membership [8], and an emergent product of interactions [5, 9, 10]. Erving Goffman demonstrated how individuals manage their identities by expressing or suppressing aspects of their selves based on the audience and the sociocultural context. This process often involves emotional labor or "the management of feeling to create a publicly observable facial and bodily display [11]." To explore what teachers express or suppress in the U.S. K–12 education system and gig education platforms, we draw on concepts of identity and emotional labor to understand how teachers regulate their emotions while interacting with various stakeholders, including students, parents, and family members. Additionally, it considers how such challenges influence their professional identity and well-being.

This work also explores the transnational gig economy by considering Chinese gig education platforms, which have recently migrated to Western contexts. Increasingly, traditional kindergarten through 12th grade (K–12) teachers in the United States are using these gig education platforms for extra income or as a career move. Teachers present a unique population to explore gig work. Teaching is often framed as a labor

of love that requires great sacrifice in the United States – teachers are poorly paid and expected to provide wide-ranging support services for their students outside of their job description. Teachers are expected to prioritize the needs of their students and the educational institutions they work for over their individual needs. This requires significant emotional labor, meaning teachers suppress their own emotions to ensure that others, such as students and parents, are appeased [11]. Teachers have to negotiate myriad social and bureaucratic demands that can make their teaching and personal lives a burden, ranging from resolving student behavioral issues to buying their own classroom supplies [12]. Moreover, K-12 teachers can be subjected to both physical and emotional abuse in educational environments [13] from a range of actors, including students, parents, and colleagues [14], with a potentially severe impact on their emotional well-being [15]. As such, in the U.S., eight percent of teachers are leaving the profession annually because of their dissatisfaction with teaching conditions [15] and incommensurate compensation [16][17].

Drawing on interviews with 24 U.S. K–12 teachers who do work via Chinese gig education platforms, this research aims to understand the difficulties teachers encounter in the U.S. educational system and how gig education platforms affect their everyday lives. We utilize a conceptual framework bringing together concepts of emotional labor [11] and postcolonial computing [18], to offer a situated and qualitative perspective on how gig platforms reconfigure participants' everyday emotional labor while creating new forms of emotional labor in the context of transnational knowledge-based gig work.

Our research confirms that in traditional environments, teachers perform excessive emotional labor that taxes their professional and personal lives. As their labor is reconfigured in positive ways through engagement with gig education platforms, teachers can reclaim their sense of purpose and identities as educators. Yet, we will show that teachers must also contend with emergent forms of emotional labor introduced by online gig education platforms. We also discuss the sociotechnical nature of the transnational gid education platform by introducing the concept of "transnational emotional computing," wherein computing systems invite questions that spur individuals to rebuild their relationships with themselves, other people, and societal systems (e.g. labor markets). We show how the underlying mechanisms of transnational gig education systems may reconfigure people's emotional labor and identity performances. Additionally, we engage with decolonial and postcolonial scholarship to discuss the politics of transnational gig education platforms. We challenge the prevailing design paradigm for computing systems by demonstrating how Chinese-designed gig platforms could normalize certain worldviews through education, perpetuate colonial mentalities, and establish a hegemonic platform identity. We conclude by advocating that researchers and designers prioritize the development of systems that resonate with workers' self-concept and their intrinsic motivations to engage in work, a concept we term "identity alignment." This, we argue, holds promise for fostering more generative working futures.



Fig. 1: The VIPKid Mobile Application Interface: (a) allows students and parents to select teachers based on categories such as gender (presented dichotomously), teaching experience, teaching style, personality, and availability; (b) shows how VIPKid uses self-determined metrics to quantify students' online class performance based on terms like concentration, expression, reactions, and interaction. (e.g. concentration levels are calculated based on how long the student's front face remains directed towards the camera); employing gamification tactics, (c) shows parents a highly quantifiable and automated report of students' performance.

1.1 Background

In recent years, a growing number of gig education platforms have emerged, several of which have been designed in China, such as GoGoKid, Whales English, and VIPKid. In 2013, Chinese businesswoman Cindy Mi founded VIPKid ¹, the biggest platform of its kind, with the goal of providing individualized English lessons for children aged 4 to 15 from qualified North American teachers. As of early 2020, the platform had a user population of around 800,000 students and 100,000 teachers. The platform offers Chinese K–12 students one-on-one English lessons in 25-minute sessions via live-streaming technology.

Teachers at VIPKid are hired as independent contractors and paid \$14–18 per hour per class. Chinese parents, along with support teams hired by these companies, serve as key actors in facilitating the online education process. The support teams, frequently undervalued and labeled as "AI," typically consist of migrant workers from

 $^{^1{\}rm If}$ the U.S. Won't Pay Its Teachers, China Will. https://www.bloomberg.com/news/articles/2016-12-19/if-the-u-s-won-t-pay-its-teachers-china-will

less-developed Chinese cities. These workers enhance the platforms' capabilities, fulfilling the promise of automation. For example, "firemen" (*jiaowu laoshi* 教务老师) are available to help teachers address issues that arise during classes. Learning partners were also hired to communicate with parents and address their needs, such as booking courses and recommending teachers.

Importantly, Chinese-developed gig education platforms are also influenced by geopolitical tensions between the U.S. and China China's domestic regulatory policies. For example, in 2021, several platforms, including VIPKid and GoGoKid, paused operations in China due to new government regulations that banned private tutoring lessons with foreign educators². It was a part of China's broader "double reduction" policy aimed at reducing academic pressure on students and financial pressure on families. The policy abruptly ended the ability of platforms to offer classes with foreign teachers based abroad, significantly impacting thousands of online teachers and creating financial uncertainty as they had to explore alternatives such as using VPNs or seeking other similar part- or full-time job opportunities outside of China. This incident also accelerated some companies' international expansion efforts. For instance, VIPKid began focusing more on forming partnerships with U.S. educational organizations like BookNook and even launched a "global platform" ³ to retain U.S. teachers and extend its reach to English-learning students in other Global South countries beyond China. These shifts underline the precarious nature of transnational gig work in education, highlighting the interplay between global geopolitics, national policy, and workers' livelihoods in the global digital economy.

2 Literature Review

This section is organized into three subsections. We begin with an explanation of identity and discuss the significance of the concept of emotional labor in identity performance for teachers. We then explore the relationship between gig platforms and education. Identifying the predominance of research on gig work in Western contexts, we emphasize the importance of researching gig education in a transnational context. The third subsection then highlights how transnational gig platforms affect the reconfiguration of emotional labor, the migration of values and politics, and emerging power tensions. The literature review thus introduces the concept of emotional labor, explores how this concept interacts with gig platforms and education, and then analyzes how transnational technology reconfigures these dynamics from a postcolonial perspective.

2.1 Emotional Labor in Performing Identity and Marginalization of K-12 Teachers in the U.S.

Researchers have conceptualized identity in multiple ways. [5, 6]; Gecas understood identity as self-concept, or, either the representation of a person that others believe them to be or how an individual sees themselves [7]. While identity is often an individuated concept [19] for many people, identity is a social construct generated through perceived membership in a social group [8]. Our self-identity can be defined across

 $^{{}^{2}\}rm{http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/202107/t20210724_546576.html}$

various intersections, such as occupation, social class, gender, sexuality, race, and ethnicity. Identity can also be viewed as an emergent product of interactions [5, 9, 10]. In his formative work, Erving Goffman [5] argued that identity is constructed in relation to the social settings in which we are embedded. He developed this view through a dramaturgical lens, arguing that people draw on extant rules and norms within their social settings to perform their self-identities. Thus, self-identity emerges as a learned and imitative behavior, based on cultural norms that can come to look natural and situate an individual within that culture [20, 21]. According to Goffman, in performing identity, an individual expresses and suppresses different aspects of their self-identities as mediated by their relationship with the audience and sociocultural settings.

When people perform their identities, they unconsciously foreground certain aspects of themselves while suppressing others. To explore the relationship between what people express or suppress, we draw on the work of Sociologist Arlie Hochschild [11] who defines the "silent work of evoking and suppressing feeling—in ourselves and in others" as emotional labor. More specifically, emotional labor is a kind of relational work whereby people regulate and suppress their personal emotions in order to sustain and ensure "the outward countenance that produces the proper state of mind in others." Hochschild draws on Goffman's work on the presentation of self [22] to explain the dramaturgical demands of front stage (visible to the audience) and backstage (invisible to the audience) behavior in the context of service sector jobs. She develops the idea of feeling rules, which are socially shared norms that guide how people "ought to feel" [11]. In addition to feeling rules, other key tenets of emotional labor include surface acting – deceiving others about "what we really feel" (but do not deceive oneself) - and deep acting, which involves "deceiving oneself as much as deceiving others [11]. Importantly, deep acting often involves a cognitive change where "the dissonance between experienced and expressed emotion is resolved [23]". In developing these notions, she focused on how members of organizations regulate their emotions while interacting with a range of stakeholders. For example, in the context of teaching, a teacher might engage in surface acting by pretending to be excited and hiding her frustrations about a student's unsatisfactory academic performance. Her job is thus to regulate and suppress their emotions – keeping their feelings and any performances related to their feelings backstage – to produce positive and professional emotions in front of their students. She can also engage in deep acting by intentionally shifting their emotional state to align with school expectations and embody the professional identity associated with her role as a teacher.

While people benefit from the sense of security that comes through their ability to routinely enact a self-identity that adheres to their sense of self [24], in many scenarios, people cannot outwardly perform their identity due to social norms or the possibility of harassment, exclusion, and discrimination. The experience of being prohibited from expressing oneself is described as marginalization, where individuals or social groups are pushed to the boundaries of society based on aspects of their identities including race, ethnicity, or occupation. In the context of the United States K–12 education system, poor working conditions, a lack of autonomy and administrative support, and policy issues [25], conspire to suppress teachers' ability to enact their identity as teachers. Emergent normative societal and cultural expectations for enacting an

identity as a teacher have become institutionalized in educational environments [26]. For example, prior works have highlighted the sudden and stark reality shock experienced by new teachers when they assume full responsibility for their roles due to the disparity between their idealistic expectations and the actual classroom environment, compounded by a lack of support and guidance [26, 27]. Education researchers have highlighted myriad challenges faced by teachers in the United States [28, 29]. They are often subjected to bullying, attacks, and verbal and physical harassment [13], by students, parents, and colleagues [14]. There are even news reports about homophobia in schools where teachers were forced to leave for expressing their LGBTQ+ identities. ⁴. Cumulatively, these various sources of pressure produce a pervasive sense of identity insecurity among teachers and marginalization of their identity [15, 30].

In the face of identity insecurity, teachers engage in the constant regulation of their emotions, or, emotional labor, to manage several aspects of their job. First, in addition to teaching, educators are asked to address a range of student behavioral issues [31, 32] as well as poor academic performances. Monitoring such disciplinary problems is a leading factor in teachers' dissatisfaction with their jobs [33]. Second, teachers regulate their emotions and engage in relational labor with parents. Parents often take for granted the efforts put forth by teachers, and treat teachers with a lack of respect [34]. Teachers also regulate their emotions with respect to their home lives. Teaching is a consuming job that often limits their ability to attend to their own needs or those of their families [35]. In a 2014 Pew Research Center survey of 2,531 U.S. public school K-12 teachers, 54% reported finding it challenging to balance work and their personal lives. Additionally, 52% of the teachers would discourage young people from pursuing a career in teaching ⁵. Techers working hours can extend up to 53 hours a week ⁶, and 67% of them report that feeling burned is a very serious problem ⁷. The emotional labor teachers engage in takes a severe toll; many teachers suffer from burnout and stress [36], resulting in a high attrition rate amongst teachers, with eight thousand leaving the profession annually (238,000 teachers in 2012) and two-thirds leaving before retirement [15] [16, 17]. During the COVID-19 pandemic, these numbers surged, resulting in a "teacher shortage. ⁸."

2.2 Transition to the Transnational Gig Economy via **Gig-education Platforms**

Due to financial insecurity and low pay, there has been a significant outflow of U.S. teachers into other work domains, alongside efforts by teachers to find supplemental work to sustain a living. Gig work, specifically gig education, presents a unique opportunity for teachers to identify and establish new work roles. Yet, it remains

⁴Kentucky's 2022 Teacher of the Year quits profession, citing homophobia https://www.nbcnews.com/

^{04/04/}whats-it-like-to-be-a-teacher-in-america-today

 $https://www.rand.org/pubs/research_reports/RRA1108-9.html\\$

 $^{^{7} \}rm https://www.nea.org/about-nea/media-center/press-releases/nea-survey-massive-staff-shortages-releases-rele$ schools-leading-educator-burnout-alarming-number-educators

The U.S. Department of Education Announces Partnerships Across States, School Districts, and Colleges of Education to Meet Secretary Cardona's Call to Action to Address the Teacher Shortage https://www ed.gov/coronavirus/factsheets/teacher-shortage

unclear how such platforms mediate how teachers view themselves or want others to see them. Given that the educational infrastructure has failed to support teachers and that teachers are engaged in emotional labor that suppresses their identity in traditional brick-and-mortar environments, we explored how and why teachers engage in the gig economy. Researchers have studied the gendered aspect of teaching in the United States for a long time and the circumstances of women entering into this profession[37, 38]. They have documented how women experience choosing teaching as a career, an absence of voice, a lack of autonomy, low status and salary, and a poor work-life balance.

As gig platforms unshackle people from normative work structures, granting additional flexibility and assigning work based on demand or availability [39], researchers have looked into how these platforms might affect work and its future. Gig work, facilitated through digital platforms, has profoundly impacted labor markets and has presented unique challenges for regulatory frameworks. Due to the transformation of the traditional employer-employee relationship, gig workers often face uncertain income streams, lack of employment benefits (e.g., health insurance, retirement plans, and paid leave), and limited employment protections [40, 41]. Questions have emerged, regarding different aspects of digital platforms-mediated gig works (e.g., classification of workers in the gig economy and their rights), leading to inconsistent rulings across different social, cultural, and judicial landscapes. For example, several U.S. states have implemented or proposed legislation (e.g., Assembly Bill 5 in California [42]) to address the classification of gig workers and their employment rights. European countries typically have stronger labor protections, and social safety nets have influenced their regulatory response to gig work. For example, Platform-to-Business Regulation and Platform Work Directive [43] by the EU [44], Royal Decree-Law in Spain [45], and the Good Work Plan in the UK [46] recognize app-based workers as employees, ensuring they receive benefits like minimum wage and holiday pay. Existing studies on the gig economy in HCI and CSCW have similarly focused on popular Western platforms, including TaskRabbit, Upwork, Uber, Lyft, and Amazon Mechanical Turk (MTurk) [47-51].

In addition, there is a rapidly growing body of research on platform work and gig economy in the Global South countries [52–55]. This research includes but is not limited to Soriano and Cabañes' study on "entrepreneurial solidarities" among online freelance workers in the Philippines [52], Chen' research on how Chinese taxi drivers adapt to and resist the rise of ride-hailing platforms [54], and Abilio and colleagues' analysis of food delivery workers' working conditions during the pandemic in Brazil [53]. However, little work has focused on addressing the Global North-South dynamics, centering workers in the Global North, and clients in the Global South. This work contributes a new line of research by exploring these dynamics, focusing on knowledge workers in the Global North and clients in the Global South within the context of transnational gig education. Whereas scholarship exploring gig work has championed the opportunities and income potential created by gig platforms, describing such platforms as "boundaryless" [56, 57], studies exploring gig work in non-Western contexts have offered a critical perspective towards gig work. These studies have highlighted the negative implications of gig work as related to globalization, including problems with

wage structures [58], employment bias [59], surveillance [60], legal concerns [47, 57] and income disparity [61].

In these cross-cultural and globalized settings, gig platforms have what we dub a transnational character: whatever their country of origin, such platforms mediate relationships between people across diverse countries and cultural contexts. Yet, scholarship exploring the transnational character of gig platforms has been limited, notable exceptions include ([62, 63]). Work exploring gig platforms in the offshore IT industry has revealed an asymmetrical power relationship between Western clients and their vendor organizations in India, Brazil, and the Philippines [64–66]. Besides the burden of impression management shouldered by offshore workers [67], these studies have found that client preferences shape the coordination of schedules across different time zones, at the cost of workers' preferences and agency. Scholarly research on the transnational character of gig platforms helps us to understand how such platforms are embedded with the logics, or politics, of those who design them [68]. Important questions persist regarding how those logics, especially when developed in a specific cultural and country context, reconfigure emotional labor in other parts of the world.

2.3 Gigging as Reconfiguring Emotional Labor and Identity: A Postcolonial Lens

To address these questions and further develop research on transnational platform politics, we explore and capture the experiences of U.S.-based gig workers who work for clients in China through Chinese-based gig applications. In framing this exploration, we draw on world-system scholarship (e.g., [69]) and postcolonial literature (e.g., [18]) to interrogate how emergent transnational gig platforms shape and reshape emotional labor across global contexts.

As gig work expands trasnationally, labor becomes increasingly flexible and precarious, leading to worker instability and insecurity. Hardt and Negri attribute this precariousness to an economic shift that favors fragmented and contingent labor under the paradigms of globalization, neoliberalism, and digital capitalism [69]. In addition, crowdwork (e.g., Amazon Mechanical Turk) and online freelancing are often perceived as lacking materiality and disconnected from stable employment or concrete labor protections due to their transnational legal complexities [70]. This perception often leads to the neglect of immaterial labor, such as the emotional labor and the invisible labor that manages and sustains the the precarious nature of such work [71, 72]. In line with the transnational dynamics mediated by data-driven technologies [73], postcolonial computing scholars have highlighted how such technologies can impose certain cultural norms and values when introduced into new geographic locations [18]. This discussion is particularly relevant for understanding how certain pedagogies and epistemologies are prioritized and influence others. For example, technologies designed with a Western hetero-normative conceptualization of gender and sexuality can impose these views on indigenous cultures that were previously more accepting of diverse identities [74]. While much work adopting a postcolonial computing perspective has looked at how Western platforms fail to accommodate cultural differences in the Global South [75–77], less attention has been paid to platforms designed outside of the West, e.g., considering India and China's computing relationship with many African countries through the lens of digital colonialism [78]). Irani and colleagues point out that "postcolonial conditions affect China and Sweden as much as they do India, Britain, Australia, or Kenya" [79]. Therefore, while some countries (e.g., India and China) outside of the Western hemisphere were not colonizers between the 14th and 20th centuries, a postcolonial computing framing can help to elucidate the power-laden nature of technology and design in culturally diverse contexts. Building on Irani and colleagues' seminal work, Dourish and Mainwaring identified similarities in the practices that under-girded both computing and coloniality underscoring the colonial impulses of technology [80]. They revealed tendencies in the culture of computing toward reductive representations of human knowledge and identities, alongside assumptions about the universality of sociocultural realities.

Transnational gig education platforms have the potential to reshape emotional labor in myriad ways. Chinese cultural values, such as "wishing for dragon children" (wangzi chenglong 望子成龙) 9 and "respecting teachers" (zun shi 尊师) allow teachers to reclaim aspects of their identity and help them find meaning and purpose in teaching. Moreover, platforms reshape emotional labor through algorithmic logics. In addition to conceptualizing identity as self-concept and performance, HCI and social computing scholars have also examined how an individual's identity is constructed through interactions with various sociotechnical systems, or, the algorithmic construction of identity [81]. With the goal of turning complex human phenomena into "something a microchip can understand" [82], technologies create the idea of an algorithmic identity—a datafied version of self and how others perceive us, using near-real-time interpretation of our data [81]. Based on our interaction with the system and other individuals using the system, algorithms use measurable types, or data templates, to classify and categorize us. As systems collect more data about us, the algorithmic interpretations evolve [81]. Categorical identity or membership is determined based on algorithmic fit-how well someone's measurable types resemble pre-defined algorithmic constructs. In the context of transnational gig education, algorithmic mediation (e.g., rating systems) can create new forms of emotional labor for teachers as they contend with different cultural definitions of what it means to be a successful teacher.

Transnational gig education platforms can also introduce new forms of emotional labor shapedthrough different cultural logics of algorithmic surveillance [83]. A growing body of research on the gig economy focuses on algorithmic control and hegemony to understand how algorithms exert power and control over our routine experiences in adverse and often problematic ways [84, 85]. For example, researchers have conceptualized Uber as a totalitarian system as it utilizes algorithmic-based management [86] to discipline drivers' behaviors and practices [87]. While these gig platforms rely on algorithmic recommendations that have been found to show identity-based biases [88], recent work by Munoz and colleagues [89] has highlighted how gig workers control and negotiate their identity with these algorithms on gig platforms. Studies of algorithmic

 $^{^9}$ The phrase wangzi chenglong 望子成龙, translated as "wishing for dragon children," reflects a traditional Chinese cultural aspiration where parents hope for "dragon children," who possess both moral integrity and ability, symbolized by dragons that represent excellence and success in Chinese mythology. Such values and expectations are deeply rooted in Confucianism.

surveillance in HCI and CSCW literature have shown that both platform companies and customers have been identified as perpetrators of unnecessary data collection and surveillance in cases of crowd work, freelancing, ride-sharing, and delivery. [75, 90]. Such algorithmic surveillance contributes to asymmetric power relationships and the politics of dyadic surveillance of an observer and an observee in traditional work-places; algorithmic systems rely on a digital reality conceived by captured data while neglecting the workers' embodied reality [91].

In this paper, we explore how transnational gig education platforms—in this case, platforms designed and implemented in China but used by teachers living in the United States—are reconfiguring emotional labor. We pursue this exploration through the personal histories of teachers who have taught or continue to teach in brick-and-mortar contexts but are using transnational gig education platforms. We highlight how emotional labor is reconfigured in both positive and negative ways.

3 Methods

3.1 Participants and Procedures

This paper is based on qualitative research conducted between February 2019 and February 2020. To address our research questions, we conducted semi-structured interviews with 24 American teachers recruited across different social media platforms. Those platforms include Facebook, Reddit, Quora, and Sina Weibo. Given the salience of Facebook and Reddit for gig worker populations, as identified in prior work (e.g., [92]) the first author also joined multiple online groups on these two platforms to recruit participants. No participants were individuals in our networks. Participant eligibility during our purposive sampling [93] was determined through the following criteria: Participants must (1) be current or former K-12 educators; (2) have participated in gig education work through at least one Chinese gig education platform; and (3) be U.S. citizens.

Our recruitment strategy was primarily centered around sending invites via social media platforms. After each interview, we used a snowball sampling approach [94] in which we asked participants to recommend people whom we could then recruit for our study. By identifying participants through multiple social media channels and through snowball sampling, our intent was to limit sampling bias. Other HCI and CSCW studies have utilized a similar approach [95].

3.2 Data Collection

We conducted individual, semi-structured, in-depth interviews with 24 participants. All of the participants in our study were female and well-educated, with 11 holding bachelor's degrees and 13 holding master's degrees. Hailing from 15 states in the U.S., 19 of them were identified as Caucasian, while 5 were racial/ethnic minorities, including African American (2), Asian (2), and Latina/o/e (1). Their ages ranged from 27 to 58 years old. We interviewed participants from diverse K-12 educational settings,

such as public schools, schools catering to students from disadvantaged and low socioe-conomic backgrounds, Title I schools ¹⁰, public charter schools, and private schools. Moreover, they specialized in a range of subjects, including special education, math, science, and art. Their time serving as educators in formal educational environments and on gig education platforms ranged from 2 to 26 years and 2 to 30 months, respectively. Amongst our participants, 4 are full-time gig educators, while the remaining 20 are part-time gig educators. See Tables 1 and 2 for a detailed breakdown. All names have been changed to protect the anonymity of participants in our study. This study received IRB approval from our university Institutional Review Board.

Table 1: Summary of participant demographics.

ID	Age	Race	State	Degree Earned	Marriage	Children
Olivia	30-39	White	NY	Master	Single	0
Emma	20-29	White	FL	Master	Married	0
Amelia	20-29	White	LA	Master	Married	0
Ava	30-39	White	CA	Bachelor	Separated	4
Sophia	30-39	White	NJ	Master	Married	2
Sade	30-39	Black	TX	Master	Single	1
Jennifer	30-39	Asian	KS	Bachelor	Married	2
Charlotte	40-49	White	TX	Bachelor	Married	2
Isabella	50-59	White	KS	Master	Married	0
Camilla	40-49	White	TX	Bachelor	Married	2
Naomi	50-59	Asian	FL	Bachelor	Married	3
Carmen	40-49	Hispanic	NM	Master	Married	2
Chloe	50-59	White	WA	Master	Divorced	2
Layla	40-49	White	NV	Master	Married	2
Hazel	50-59	White	PA	Bachelor	Married	2
Grace	30-39	White	AR	Bachelor	Married	2
Stella	40-49	White	TX	Bachelor	Married	4
Scarlett	30-39	White	SC	Bachelor	Married	0
Claire	50-59	White	FL	Bachelor	Married	2
Bella	40-49	White	OH	Master	Married	5
Allison	50-59	White	FL	Master	Married	1
Destiny	30-39	Black	FL	Master	Single	0
Jade	50-59	White	TX	Master	Married	2
Samantha	50-59	White	TX	Bachelor	Married	2

The interviews lasted between 40 minutes and 4.5 hours, and averaged approximately 90 minutes. Participation in the study was voluntary. Interviews were conducted using technology that was most comfortable to the participants, including phone, Skype, and Facebook video. Participation in the study was voluntary, and informants did not receive financial compensation. Although interviews were initially intended to last for one hour, all participants expressed a desire to continue beyond the designated time limit even after being reminded. During interviews, the first author actively listened, creating space for participants to discuss their own struggles and frustrations. Interviewing can be a reciprocal practice; speaking to someone who listens closely can be beneficial as "one's experience, through the process of being voiced

 $^{^{10} \}rm https://www2.ed.gov/programs/titleiparta/index.html$

Table 2: Summary of participant platform use and teaching experience.

ID	Gigging Status	Gigging (Months)	Teaching (Years)	Education Gig Platform Use
Olivia	Part-time	12	14	VIPKid
Emma	Part-time	5	6	VIPKid
Amelia	Part-time	14	8	VIPKid, Cambly
Ava	Part-time	30	6	VIPKid, GoGoKid
Sophia	Part-time	6	13	VIPKid
Sade	Part-time	25	7	VIPKid
Jennifer	Full-time	25	2	VIPKid
Charlotte	Part-time	4	4	VIPKid, GoGoKid, Whales English
Isabella	Full-time	24	17	VIPKid, GoGoKid
Camilla	Part-time	11	14	VIPKid
Naomi	Part-time	6	10	VIPKid
Carmen	Part-time	17	13	VIPKid, Magic Ears
Chloe	Full-time	12	12	VIPKid
Layla	Part-time	14	26	VIPKid, Canvas
Hazel	Part-time	14	21	VIPKid, GoGoKid, Whales English
Grace	Part-time	6	7	VIPKid
Stella	Full-time	12	6	VIPKid
Scarlett	Part-time	12	5	VIPKid
Claire	Part-time	4	17	VIPKid
Bella	Full-time	2	17	VIPKid
Allison	Part-time	14	31	VIPKid
Destiny	Part-time	8	15	VIPKid, ABC360
Jade	Part-time	12	20	Gogokid, Zibra English
Samantha	Part-time	11	8	VIPKid

and shared, is validated" [96]. Additionally, the first author shared preliminary findings with participants both to satisfy their curiosity about their peers' experiences and to facilitate a member check.

The interview questions were semi-structured to allow participants to guide us through their experiences as K-12 and gig educators. The interviews were designed as life histories [97]; we asked teachers about their lives, their experiences working as K-12 teachers, and their experiences as gig educators. When inquiring about their experiences with gig education platforms, we asked about their motivations for teaching and transitioning to gig education. We also asked them questions regarding their current routines, the challenges and obstacles they faced, and the pros and cons of gig work.

The interviews were audio-recorded and subsequently transcribed for analysis. At the end of each interview, the first author asked participants if they could add them to our social media networks or access their gig platform profiles for purposes of triangulation. They received consent from over half of the participants. These online traces served as a means to validate our participants' experiences. We also further triangulated our interview data with archival data, including news reports, social media posts, and forum messages.

3.3 Data Analysis

All recorded interviews were manually transcribed and checked for accuracy. We then inductively open coded our data using Atlas.ti, a qualitative data analysis software workbench to code the interview transcripts [98]. We conducted both interactive and inductive analysis of the 24 interview transcripts using open coding and memoing. All codes were discussed by the research team on a weekly basis and visualized using MindNote, a visual brainstorming application. Several codes emerged, related to motivations for becoming educators, challenging experiences as educators in traditional K-12 environments, and techniques for maintaining teaching practices. Codes like "natural choice" and "taking care of family" showed participants' motivations to be educators; "Financial struggles", "burnout", "glorified babysitter" and "student behavior issues" revealed teachers' challenges in brick-and-mortar settings. "feeling respected", "flexibility", and "autonomy", were codes generated around participants' experiences with gig platforms. After consolidating redundant codes and group codes, we generated the themes reported in the results section related to how gigging reconfigured teachers' emotional labor across their relationships with parents, students, and their families.

3.4 Author Reflexivity

The first author was born in China and received their K-12 education there. They received both an undergraduate degree and a master's degree in the United States. They also had experience working in Chinese education media before graduate school. They are fluent in both Chinese and English. Their identity and background drove them to pursue this project. They disclosed their personal background when speaking with participants. The second author, born and raised in Bangladesh, received his undergraduate education in his home country before pursuing graduate studies in the United States. While his experience of being educated in diverse cultural contexts significantly influenced his involvement in the project, he also contributed to the theoretical shaping of this study from his critical HCI background. The third author is an Iraqi-American who is a member of a marginalized minority group from Iraq. He served as the anchor author for this work, shepherding the research project from its inception through its written form.

4 Research Setting: The Emotional Toll and Financial Insecurity of Teaching in the U.S. Education System

In this section, we document participants' motivation and aspirations for being American K-12 teachers. We also highlight teaching as an emotional practice [23] and the emotional labor teachers have to contend with in traditional education systems and the economic challenges they face as knowledge workers.

Many participants chose to become teachers to work for the social good. Their motivations to teach were emotionally tied to and deeply embedded in their identities as teachers. Among our 24 participants, 17 perceived teaching as a "natural choice"

that suited their personalities. They enjoyed being around children and empowering future generations. This is best illustrated by Olivia, a 36-year-old Caucasian from a Title I public school that supports low-income students throughout Upstate New York:

I think who I am today is also because I'm a teacher. Honestly, I think I was probably always a teacher deep down... I really can't imagine myself doing anything different.

Additionally, 11 participants claimed that that their own former teachers inspired them to continue the work of mentoring students.

While their decision to become teachers was related to their interest in the social good, participants also described substantive issues with formal educational infrastructures that marginalized their identities as teachers. Indeed, effective teaching requires teachers to "modifying and controlling" their in ways that "support organizational goals and enhance student behavior and academic performance [99]." They found that the realities of teaching required constant emotional labor. They described routinely regulating their emotions to meet students' needs and goals instead of their own [36]. Such emotional labor includes spreading positive attitudes among students as a way to motivate them, despite being already tired and demotivated from long working hours and non-teaching duties such as cleaning classrooms and buying materials out of pocket for students. Sade, a 33-year-old African-American single mother from Texas, explains:

Your contract hours might be from 7:25 [am] to 3 [pm], but you're going to be there sooner or later. You might have to show up a lot early because a lot of teachers, like myself, have rotating morning duties and rotating after-school duties, things that are not explicitly spelled out in the contract... It doesn't turn off even when you get home.

Participants often juggle multiple roles and regulate their frustrations to meet students' various needs. For example, up to one in five children experience mental health problems [100] in the United States. Without trained psychologists on campus, teachers end up filling this critical gap. Most participants had only formal teaching training, but the normative expectations of the existing educational system required them to serve in other roles as well. Scarlett, for example, reported that she had to be a nurse and psychologist to meet her students' needs. Similarly, Amelia, a 29-year-old Caucasian teacher from Louisiana, describes these expectations:

I'm a little bit of everything in my role as a teacher. On any given day, you're a mom when they need a hug; you're the teacher because you're teaching lessons; you're fixing booboos when the kid has a cut, and the role changes as the kids change at any time of the day. I might have five different roles for my students.

Six participants teaching in Title I schools, where at least 40% of the student population is economically disadvantaged, described how their jobs require significant emotional investment. On the one hand, they had to meet students' basic needs, ensuring they were well-fed and cared for so they could be active learners. They also had to create a nurturing and loving environment and enact care practices for students from distressed environments. Participants were initially frustrated by students' poor academic performance. While recalling their economic situations, they perform deep acting, shifting their feelings to sympathetic. Participants described feelings of

guilt and sadness when they could not provide enough care for their students as they believed they were expected to enact care to foster students' academic development. According to Scarlett, a 30-year-old South Carolina teacher who attended college for free in exchange for working in a Title I public school for at least three years after graduation:

They were in high distress because of their economic status, so I had to work extra hard to help them meet their basic needs before we could even teach. After doing that for five years, I just burned out. I didn't have anything left.

Participants reported suffering from not only burnout but anxiety and depression. Participants revealed that they felt ill-prepared for their profession due to the stark realities of teaching. Their inability to cope with the emotional labor of their work limited their ability to enact their identities as teachers. Charlotte said:

Even though I got some experience in the classroom before student teaching and went through student teaching, I still wish there were a way to have a class that wasn't like throwing you to the wolves. I was still not prepared to deal with behavioral issues, the lack of respect, and a lack of support from the administration, so it kind of makes me wish that there was a way to change the education of teachers also.

Another source of major dissatisfaction was economic; twenty-one participants reported facing financial challenges. Ten lamented that their pay was not proportional to the amount of time, effort, and emotional labor they invested in their work. Sophia, a 36-year-old teacher from New Jersey, shared her perspective:

I don't think teachers make enough money. Most teachers that I know have a second job. There used to be a going joke when I was teaching in middle school that the New York City garbage collectors made more money than some of the teachers we knew. Not that there was anything wrong with a blue-collar job, it was that, you know, we were still paying our college loans.

Participants described the negative consequences of budget cuts in the educational system, resulting in lower salaries and reduced job security. In addition, they had learned to reconcile and become accustomed to relying on outdated funding models while still being expected to maintain high teaching quality with fewer resources. Layla, a 49-year-old public school principal from Nevada with 26 years of experience in teaching, expressed her frustration with these challenges:

The state I live in, we are still using the same funding formula from the 1950s. It's no longer the 1950s, so that has meant that education is being funded exactly the same, and life is very different, so that has meant that not as many teachers get hired, classroom sizes are bigger, and [we are] just trying to continue to provide a good quality service for parents, which they want with less resources.

Despite the shrinking resources, teachers felt they were expected to hide their frustrations to present themselves as competent professionals who effectively perform their duties in front of parents and students. Additionally, the grim economic prospects have led to an increased number of teachers quitting jobs that they were passionate about or participating in labor actions for better wages.

To make ends meet, participants described taking on one or more jobs, such as waiting tables and babysitting. In the United States, 16% of teachers take a second job ¹¹ and they are five times more likely to have side jobs than the average full-time U.S. worker, according to the U.S. Bureau of Labor Statistics. ¹² Beyond these conventional employment options, teachers have turned to transitional gig platforms like MTurk as a means of coping with economic insecurities and reclaiming their professional identities.

In this section, we explore the motivations of participants for pursuing careers in teaching, showing how their identities are deeply intertwined with their career choices and the challenges they face within the U.S. K-12 traditional education settings. We also highlight systemic issues such as low pay, lack of respect, and inadequate support – factors that compel teachers to constantly regulate their emotions and grapple with identity insecurity. These challenges drive some educators to seek out gig education platforms as viable alternatives. While emotional labor has long been recognized in traditional educational settings, gig education platforms present novel reconfigurations of this phenomenon. This section establishes a foundation for understanding how these platforms not only reconfigure emotional labor in traditional settings but also introduce new forms of emotional labor in the context of transnational gig education, which is central to the focus of this study.

5 RESULTS: RECONFIGURING EMOTIONAL LABOR THROUGH GIG EDUCATION

This section demonstrates how gig education platforms introduce new forms of emotional labor for teachers due to cultural differences and mechanisms such as datafication, algorithmic management, digital surveillance.

Whereas prior research on the gig economy shows that income generation is one of the primary motivations among gig workers [101–103], our findings reveal that another important motivation for teachers was the perceived reduction in emotional labor of gig education platforms. We found that the platforms allowed participants to rediscover their internal motivations for teaching. Their participation allowed them to regain a sense of fulfillment and freedom in their work and personal lives. Despite these benefits, these platforms also introduced new forms of emotional labor.

5.1 Reconfiguring Parent-Teacher Relationships and Emergent Emotional Labor through Datafication

In traditional educational environments, the fraught relationship between teachers and parents is characterized by a lack of respect for teachers[104]. Gig education platforms reconfigure this relationship: teachers are considered authorities and treated with respect in these contexts. However, such systems also introduced emergent emotional labor through datafication.

12https://www.bls.gov/cps/cpsaat36.htm

 $^{^{11}}_{--} https://www.nytimes.com/interactive/2018/09/06/magazine/teachers-america-second-jobs.html$

5.1.1 Gigging as shifting responsibility from teachers to parents: "glorified babysitters" no more.

Sixteen participants shared that they felt undervalued and disrespected in brick-and-mortar schools. Indeed, among teachers considering leaving their profession, common reasons include a lack of respect from the community, such as parents and students, and emotional factors like a lack of "fulfillment, boredom with daily routines, stress, and frustration [104, 105]." Five participants specifically described how they were considered to be "glorified babysitters" by parents who believe teaching primarily requires behavioral monitoring. As Amelia explained:

A parent actually told me that I was more of a "glorified babysitter." She told me that her child was still learning on his own and that I was just kind of there to see it happen and facilitate it. That was like a punch to the gut. It really hurt my feelings...Parents are definitely the biggest blow to my self-esteem as a teacher.

In addition to a lack of respect, ten participants disclosed the absence of accountability among parents, which further burdened teachers. They described how parents often offloaded disciplinary responsibility on them, as opposed to disciplining their children themselves. Participants also reported that they are typically blamed for poor academic performance, which is often beyond their control. Moreover, participants deliberately suppress their emotions due to false public perceptions about their financial situations and the teaching profession, which portrays teachers as "greedy" and teaching as a "second-rate profession": Hazel, who has been teaching for 21 years, lamented:

I often see things in the news or on social media, and when there's an article about teachers, people vent their frustrations against us. That surprises me; they say we make too much money, and all we are doing is babysitting and things like that.

The toxic combination of high expectations and lack of respect from parents created an untenable environment for participants that was emotionally taxing. Claire said: You deal so much with emotional issues and discipline issues during the day [that] you come home completely wiped out.

Gig platforms highlight cultural differences between the U.S. and China, which undercut the perception of teachers as "glorified babysitters' for participants.' We found that through their teaching on gig education platforms, teachers' relationships with parents was reconfigured; parents played an active role in their children's educational lives while also respecting and attending to the needs of those who are teaching their children—teachers.

Participants described feeling newly valued by parents on gig education platforms. This is best elaborated by Sade, who has been teaching online part-time for 25 months. She described experiencing "culture shock" when first engaging with Chinese parents through VIPKid:

Everyone [in the U.S.] likes to say that, you know, they value education. A lot of times people close doors and call us glorified babysitters. One of the beautiful things that I've seen, [on VIPKid] parents and other people actually value education; they value educators and that's huge. You don't notice that until you meet other people from other countries.

It's like, "wow you know what? We do care about our kids' education. We do care about the people who are educating them."

Most participants described feeling respected and appreciated by students and their parents from China. While teaching online, they felt they could be transparent and honest with parents when discussing their children's behavior and progress without being blamed.

Not only did participants feel more valued, but the responsibility for student success shifted from the teacher to the family. As described by Carmen, a teacher who has been teaching online for 17 months:

[In China] it's a student's responsibility and the family's responsibility, too, for that child to do well. So, parents put forth a lot of effort to make sure that their students have opportunities to learn, where American parents make excuses for their children not learning, but it's never the child's fault or the parent's... it's always the teacher's.

As per Chinese values, acquiring skills and education have long been considered virtues and critical life goals [106]. Many Chinese parents expect their children to learn as much as possible so that they can excel in society. Parents are responsible for supporting their children and putting them in a position to succeed. This value can be traced back to Confucianism, where certain idioms, such as "wishing for dragon children" (wangzi chenglong), are often used to mediate the relationship between parents and their children. Here, the dragon is a symbol of power and strength, and parents want their children to be powerful and successful; education is seen as a way to attain these qualities. Through close interactions with students and parents via gig education platforms, teachers can experience Chinese values, philosophy, and education cultures synchronously. For participants, emotional labor stemming from a lack of respect and accountability was reconfigured by Chinese values such as respect for teachers (zun shi).

The respect and support they received from Chinese parents via those platforms enabled them to re-enact a self-concept that gave them purpose as teachers. Participants were able to refocus their attention on students' learning rather than engage in the invisible emotional labor that made teaching a taxing endeavor.

5.1.2 Emergent emotional labor through datafication: Authenticity and managerial control.

Despite the positive aspects mentioned above, the technology and values underpinning those platforms sometimes mediate participants' experiences in adverse and problematic ways. Here, we document technical mechanisms such as quantification, tagging, classifying, and rating, together with new expectations from Chinese parents, which introduced emergent emotional labor among participants.

Participants believe that their background and identity as American teachers make them ideal candidates to teach "authentic" English via the gig systems, where parents could easily find them via the filtering features on the platforms. Camilla elaborated:

[Chinese students and parents] are paying for a human experience; they're paying to hear English spoken out of my mouth. I'm able to use my expertise as a teacher to teach them

content, teach the language, and provide a great living example of someone who speaks English with an American accent.

Similarly, Sophia believes that the idea of having an authentic American teacher with a "traditional" accent teach their children English is highly valued by Chinese parents. Teachers like Sophia and Camilla equated adhering to these implicit expectations and values with "acting professionally" while teaching online. Sophia added:

I have a very thick Jersey accent, which I try to hide as much as I possibly can. When I'm teaching online, I try to have as much of that...traditional American television accent as I can.

Sophia's pursuit of a "traditional American accent" demonstrates that hiding her Jersey accent and adopting a "traditional" accent in response to the implicit expectations from the clients and platforms contributed to their conceptualization of what it means to "be" an authentic American teacher in the transnational gig education economy. Indeed, it requires additional labor, including performing deep acting, to exhibit professionalism and authenticity as well as maintain the perceived authenticity of an ideal American teacher based on such implicit expectations. Participants are aware that their accent and emotional presentation matter not only as a potential catalyst for five Apple reviews, but also for increasing their visibility by being classified desirably for the clients.

Gig education platforms provide participants some level of flexibility and autonomy, upheld by traditional Chinese values that respect teachers. However, these platforms still subject participants to prevalent contemporary Chinese cultural norms, such as the widespread acceptance of overwork [107, 108], exemplified by the 996 work culture in the technology sector [109]. As students' success is considered to be heavily reliant on teachers, Chinese parents who worked with participants in our study sought to establish long-term, stable relationships with the teachers. This desire is amplified by the prevailing overwork culture [107] and intense competition among peers[110] in contemporary China.

Platforms like VIPKid, therefore, designed features such as "priority booking," which allows parents or students to schedule book learning sessions based on a teacher's available time slots. Participants described that while teachers technically have the option to decline these requests, the system's design incentivizes teachers to accept these bookings and makes them feel a responsibility to do so. This often leads to teachers experiencing a loss of control over their schedules, impacting their sense of agency. Ava, a teacher and mother of four from California, shared her experience regarding how such features affect her ability to manage her teaching commitments:

This is the teacher's choices as far as what she agreed to work, or at least make herself available for. But the incentives and then, having one of your favorite students ask if you can teach them during a certain time, can be very enticing and have us working more than we necessarily planned to.

Additionally, through quantification of labor, U.S. teachers are incentivized to teach a high number of courses in a given period, especially during Chinese holidays. Such a mechanism has been adopted by other gig platforms, such as Uber [85], with

the goal of profit maximization. In this context, teachers are encouraged to prioritize Chinese students' education needs and work around the Chinese calendar.

Additionally, the Chinese parents in our study aspire to seek out teachers who are more likely to support their children to be successful. Yet, as expressed by participants, parents and teachers in China and the U.S. often have conflicting evaluative criteria for what makes a "good teacher." The gig education platforms allow parents to tag and classify teachers based on system-level categories using eighteen personality characteristics, six teaching styles, and other categories, including education, binary gender categories, and availability. Through this evaluation, the system presents digital identities for teachers to help parents select which teachers they want for their children. For example, parents can assign tags such as "patient," "positive encouragement," and "serious" to teachers. However, some teachers disagree with how they are being tagged, thus creating identity conflict and emergent emotional labor. Stella expressed a feeling of being commodified:

When it comes down to it, I'm kind of a product... They're looking for something very specific for their child and it helps them navigate through to find what they need.

Because of tagging, classifying, and cultural differences, teachers often altered their teaching styles and deliberately suppressed their discomfort to conform to the expectations of what makes a good teacher in China. As described by Carmen:

I would think any kind of evaluation would change your behavior regardless if it was online or not, because if I was at work and I was told that I was too rigid and that I needed to be more personable, well, then I would have to change my behavior to become more personable.

In addition, as with other professionals in the gig economy, teachers are assigned ratings on a five-star system, based on their teaching quality. This creates emergent emotional labor among the teachers, who have to ctively reshape their inner emotional life to conform to the client's expectations to get good reviews. As noted by Newlands and colleagues, rating mechanisms promote emotional labor by conditioning consumers to exhibit socially desirable behaviors [111]. In our study, participants revealed that they struggled to maintain near-perfect ratings and ended up performing outsize amounts of emotional labor. Camilla described the process as emotionally taxing:

I started with a four Apple review...it was like 4.87 for a while, it's now at 4.99 and I think I have to get like 50 more five Apple reviews to get to a five. I think it's ridiculous. A lot of teachers stress when they go below a five, and they freak out.

Indeed, gig education platforms transform the teaching experience in multiple ways. Although there is a strong cultural respect for teachers and an emphasis on valuing education in China, the remoteness of clients and their socioeconomic status, along with platform affordances resulting from online teaching, also affect teachers' experiences and their perceptions of respect and value. For instance, due to physical remoteness, issues such as physical attacks against teachers are no longer possible. The higher socioeconomic background of students' families likely contributes to higher parental expectations, involvement, and better support. The affordances of the platform, including the complex classification system mentioned earlier, not only

standardize the teaching process but also shape teachers' professional identity and reconfigure their emotional labor.

In summary, gig education platforms are reconfiguring emotional labor in such a way that teachers are able to reclaim a positive self-concept. However, as participants further engage with such systems, they are rendered as high-resolution [112] commodities through datafication and are more likely subjected to managerial control, which introduces new forms of emotional labor.

5.2 Reconfiguring Teacher-student Relationships and Emergent Emotional Labor through Algorithmic Management and Surveillance

In this section, we first highlight the emotional labor of managing in-person behavioral issues in the classroom experienced by participants. We then document how such emotional labor was reconfigured through human and machine mediation when participants interacted with online gig education systems. We conclude by showing the emergence of new forms of emotional labor due to algorithmic management and surveillance.

5.2.1 Human-machine collaboration: mediating student behavioral issue through gig education platforms

Thirteen participants described the emotional labor required to constantly deal with student behavioral issues in brick-and-mortar schools. Most participants reported encountering behavioral issues regularly. Students were often distressed, throwing chairs, slamming doors, pushing their peers, and disrupting the rhythm and flow of teaching in other problematic ways. Scarlett, who taught in a public school for five years, described encountering and mediating behavioral issues every day. Disheartened, she ultimately decided to leave her school. She said:

I had stayed at school the night before until 5:30 or 6:00 pm, putting together something thought out; I couldn't even do the lesson without any disruptions... And you never knew when they would be triggered...As a teacher, I always had to be ready for the worst.

Participants often felt that students did not value education or the work of teachers; one of their primary challenges was getting students to pay attention in class and value the learning experience. Charlotte, a 43-year-old public school Spanish teacher, described this struggle. Moreover, students mocked her Spanish accent, making teaching an anxiety-inducing endeavor.

Behavioral issues also manifest as physical attacks, as four participants noted. As elaborated by Destiny:

Over the years, I've had students who have thrown chairs and trays and tossed desks over. I've had a kick, bite, scratch, and pinch.

Importantly, participants reported that the current system not only enables behavior issues but also creates hurdles for teachers to address emergent issues and threats to their physical and emotional well-being. In online gig education platforms, the taxing

labor of classroom management was delegated to the platforms through both human and machine mediation.

Human mediation is a critical part of Chinese classroom settings. Teachers in Chinese brick-and-mortar schools often work in conjunction with human behavioral aids (banzhuren), who mediate classroom-related behavior so teachers can perform their jobs without taking on additional emotional burdens [113]. Gig education platforms are designed around this norm. For instance, at VIPKid, both "learning partners" and "firemen" work as human mediators to support students and teachers. These people are often migrant workers working in big cities like Beijing. They are responsible for promoting a positive classroom culture that encourages student learning and effective collaboration between parents and teachers [113]. This form of collaboration between teachers and parents differs from that in U.S. K-12 education and ESL (English as a second language) programs, where parental involvement takes a more hands-off approach [114, 115]. Learning partners often serve a primary role centered on communicating with parents and enabling effective collaboration among students, parents, and teachers.

Firemen assist teachers with issues during classes, including classroom behavior management. Eleven participants described how firemen help them troubleshoot a variety of urgent and disruptive behavioral issues. Apart from addressing students' behavior issues, they also support students and teachers with technical failures during interactions with the so-called "AI systems." Allison, who has been teaching through VIPKid part-time for over a year, shared her experience working with firemen:

The firemen are very, very kind. So, if I'm having an issue in class where I can't hear the student...they will help me...There's a button that I could press to address behavior issues. And the firemen will come and contact the parents.

Beyond human mediation, these online platforms were designed to address behavioral issues through machine mediation. Specifically, the systems use AI technologies to further alleviate the emotional labor of managing student behavioral issues. For example, VIPkid employs voice and emotion recognition to detect and report students' attention and concentration levels during learning sessions; this data is used to autogenerate feedback that is sent to parents so that they can support teachers. In turn, participants felt they could focus their energy on teaching.

According to participants, AI is also being used to personalize teaching. Algorithms are designed to assign students to participants, to ensure that teachers are paired with students that align well with their expertise and teaching style. As a result, participants are likely to spend less energy disciplining their students. As described by Isabella:

I had a much different type of student in the beginning...I have an arts-based master's degree; I started getting more students who had art-based interests...my undergrad degree is in creative writing, so I have many students interested in a writing career... I feel like it is their algorithm that they're finding students that go with my teaching style, whereas, in the brick-and-mortar, you get whoever is randomly assigned to you.

Due to the combination of human and machine mediation, most participants reported positive experiences working online compared with the brick-and-mortar setting. They expressed how their engagement with these systems enabled them to reignite their passion as teachers and thus reenact their teaching identity. As Sade elaborated:

Honestly, how this is set up is how teaching is supposed to be... you should not have to deal with behavior problems; you should not have to deal with children who are physically aggressive. I think it's a perfect setup.

5.2.2 Emergent emotional labor through algorithmic management and digital surveillance: Quantifying Work and Teaching Approaches.

While the system shifted the emotional burden on teachers to both human and machine mediators, other issues emerged. Scholars in platform studies have shown that digital labor is often subjected to algorithmic management [87, 116]. Participants in our study reported similar forms of management. They also reported feeling scrutinized by pervasive digital surveillance, which often works in tandem with invisible algorithms.

Like several other participants, Amelia observed how algorithms were used to quantify her workload and evaluate her teaching performance based on abstracted data. This algorithmically curated data was used to make decisions such as whether or not she should receive a raise or get a contract extension. As someone who is still working hard to pay off student loans, Amelia explained:

One of the things that factor into [a pay raise] is how many classes you've taught, so for teachers who are doing this for the motivation of paying off a student loan, you're more likely to teach to make sure you get to that number so that you get that raise.

Digital surveillance functions as another key mechanism to introduce emergent emotional labor. Apart from human surveillance by the firemen, Jennifer explained the digital surveillance in the virtual classroom setting:

They're scanning your classrooms to see if you are using the correct curriculum and correct maps...

The pervasive surveillance in virtual classrooms requires teachers to reflect on their teaching behavior constantly and sometimes repress and manage their feelings, producing "emotional dissonance," a conflicting feeling between how participants really feel and the surface feelings they're expected to perform. Consistent with preliminary evidence suggesting that surveillance can have "chilling effects" and actively suppress individuals' behavioral intentions [117–119], our study underscores that pervasive surveillance in online classrooms can lead to the constant suppression of normative teaching practices and contribute to teachers performing emotional labor. For example, Hazel revealed an observation in relation to digital surveillance in the context of teaching specific subjects.

[VIPKid] has provided us with the map and would like us to use it, if we use a map. We can use another map, but it needs to match the map they gave us.

As described earlier, AI technologies such as image recognition, can quickly identify the maps used by geography participants. Hazel's remarks reveal that despite

participants having the agency to use their own maps, they need to align with China's standards. Here, the technologies we described serve as tools to reinforce such norms.

Carmen, a veteran teacher who has been teaching for 13 years, tried to justify such algorithmic surveillance from a professional perspective:

From a professional standpoint, teachers should use the maps of China that students are learning in school...if they use an Americanized Chinese map, it would look different than in the map that the students see at school, which could cause confusion, and I would think that it would be best practice to use what they are used to seeing.

The algorithmic surveillance implemented by gig platforms facilitates a pedagogical approach that focuses on the uni-directional delivery of lectures by teachers. This approach strongly differs from the collaborative and critique-oriented teaching methods common in brick-and-mortar U.S. K-12 education. Regardless of U.S. teachers' perceptions of the effectiveness of these methods, they are required to conform to the teaching styles supported by the Chinese gig platforms' technological scaffolds. In sum, through their engagement in gig education platforms, participants' emotional labor was reconfigured through both human and machine mediation. However, new forms of emotional labor were reintroduced as teachers were subjected to algorithmic management and digital surveillance while interacting with those systems.

5.3 Reconfiguring Familial Relationships and Emergent Emotional Labor through Cross-border Work Synchronization

In this final section, we consider how the emotional labor of teaching in traditional educational environments impacts teachers' personal lives and how emotional labor is reconfigured via gig platforms such that teachers are able to regain control and agency over their personal relationships and routines.

5.3.1 Gigging as regaining control: putting oneself and family first

Participants reported a lack of flexibility and work-life balance while teaching in brickand-mortar schools, which created additional emotional labor for them. As a femaledominated profession, ¹³ teaching has long been perceived as a career with the benefit of flexibility, allowing for work-life balance [120]. Eleven participants explicitly stated that they chose to become teachers because they believed this flexibility would enable them to be caring mothers and partners. However, this ideal was upended as they began teaching. Participants described how, rather than having flexibility and control over their work and personal lives, their personal lives felt like a burden due to the toll of the emotional labor required in their workplace.

When describing the rhythm and temporal flow of teaching, most participants elaborated on how teaching constantly invaded their personal lives and working beyond contracted hours was the norm.

Charlotte, 43, a mother, explicitly pointed out the non-stop, grueling nature of teaching in her institution compared with other professions:

 $^{^{13} \}rm https://www.theatlantic.com/education/archive/2019/02/the-explosion-of-women-teachers/58262/the-explosion-of-women-teachers/58262/the-explosion-of$

It's an emotionally involved profession. If any teacher says they're not emotionally involved, they're not really a teacher...I've worked as a secretary in customer service. [In] those jobs, most of the time, you come in, do your job, leave at the end of the day, and everything's left at the office, and you don't have to worry about it, but in teaching, you still worry. You carry it with you.

Participants also described how they often faced extreme difficulty creating boundaries between their work and personal lives. That is, it was difficult to separate their identity as teachers from the other aspects of their lives. Sade, an African-American single mother, shared her struggles. She was particularly cognizant of how she was often prioritizing the needs of her students over the needs of her children, which often made her feel guilty:

There is supposed to be a work/life separation. I think that's a myth; for most teachers, you spend a lot of your time on a weekend catching up with the stuff you're supposed to complete throughout the week. You try to turn it off and separate the two, but it's rare.

Maintaining healthy routines that balance work and personal life was particularly challenging among participants who work at Title I public schools. Amelia and Grace described feeling guilty about bringing work home, which impacted their ability to care for their own families.

Moreover, during major life events, such as having children or being diagnosed with chronic disease, the normative expectations manifest in the traditional education system do not offer much flexibility. The system particularly inhibits participants' ability to adapt to and manage new familial responsibilities. As illustrated by Layla:

When you have a newborn, you're exhausted and do not get a lot of sleep. You're still expected to go in and give a hundred percent every single day, with no excuses.

While the traditional education system inhibited participants' agency over their personal lives, their engagement with gig platforms allowed them to regain perceived control. Fourteen participants elaborated on how their work through gig education platforms alleviated the day-to-day stresses of teaching. Whereas participants are often expected to develop daily lesson plans that take away from their ability to attend to their student's needs, this additional burden is removed from their work. Before classes begin, teachers are offered pre-designed lesson plans created by a curriculum team, which alleviates the burden of creating and planning daily lessons. Eight participants reported that the pre-designed courses and one-on-one short teaching sessions allowed them to fully focus their energy on their students. As described by Sade:

It's all done for you; all you're doing is the teaching part, so there are not a lot of extras that I have to do.

Most participants reported that this additional support from those platforms significantly reduced their workload. As Grace explained:

There's no long drawn-out anything. There's no planning for the next class; I get to do the part that I love the most, which is just teaching and, you know, having fun.

Beyond shoring up their identities as teachers, their use of gig platforms also provided participants with more perceived autonomy in managing the rhythm of their

routine lives. Thus, some participants were able to regain control of their personal lives, allowing them to spend time with family and attend to the needs of their children and partners.

5.3.2 Emergent emotional labor working as transnational digital labor: Loss of Control and Autonomy

The use of gig platforms both reignited participants' passion for teaching and reconfigured emotional work such that they could reenact their identities as teachers and parents. However, online teaching mediated by transnational systems, also created new types of emotional labor that disrupted their personal lives in potentially problematic ways. For example, technical issues often ranged from intermittent Internet connections to application crashes. Participants were often blamed for these issues, and language barriers created additional challenges and emotional burdens. Hazel elaborated.

There are times when teachers are sometimes blamed for those IT issues, and we're fairly certain that, you know, it's not us, and it's hard to explain [with the] language barrier. It can sometimes be difficult...we have no recourse when things we feel are unfair.

In another challenge, all participants described working irregular hours to accommodate time zone differences and holidays. Participants taught early in the morning, late at night, and during major holidays in the U.S. Sophia told us that due to such irregular schedules, she had to adjust her lifestyle:

I wasn't a coffee drinker before this... Now I drink probably three-quarters of a pot every day.

Despite having perceived control and autonomy over their schedules, they felt the need to make compromises if they wanted to earn enough money, which was particularly difficult for participants facing pressing financial challenges. For example, Ava said for five months, she would only sleep two to three hours during weekdays and five to six hours during weekends to pay her bills. This unhealthy schedule led to fatigue, stress, and family tension.

Despite this emergent emotional labor and risky factors such as platform dependency and the precarity of such work, participants still see gigging online as a promising career option. Among twenty-four interviewees, five participants have transitioned to teaching online full-time by relying on their partners' health insurance, while seven teachers plan to make a similar transition soon. Notably, over half of the participants showed interest in transitioning to teaching online full-time if the online gig education platforms were to offer benefits such as health insurance and retirement.

6 Discussion

In the following section, we first draw on HCI scholarship on how technologies shape transnational experiences and cultural norms and develop the concept of "transnational emotional computing." We then use our case to challenge the Western-centric design paradigm, highlight the power and politics of transnational gig education platforms, and invite the HCI community to critically reflect on how contemporary power hierarchy and coloniality are mediated by factors such as economy and technology. We conclude by discussing the implications of this work for worker-centered design, arguing that shifting design from work-centered to worker-centered requires specific attention to what we call identity alignment.

6.1 Sociotechnical Re-configuration of Emotional Labor: Transnational Emotional Computing

Highlighting its sociotechnical nature, HCI and CSCW scholars have described work as "a web-like arrangement of the technological artifacts, people, and the social norms, practices, and rules" [121]. In the field of HCI, prior work focused on transnational contexts has also highlighted the interplay between technology and culture. Research has highlighted the crucial role of everyday technologies and infrastructures in shaping transnational practices. This includes emphasizing the importance of ordinary infrastructures in supporting transnational design [122], the influence of mobile technology on transnational migration [123], how ICTs mediate transnational interactions and cross-cultural imagination [124], and the importance of considering the diverse contexts and experiences of users across geographical and cultural boundaries [125].

Contributing to the existing scholarship, we introduce the concept of "transnational emotional computing," the phenomenon wherein computing systems put an individual's relationships into question, forcing them to rebuild their relationships with the self, other people, and societal systems (e.g. labor markets). Our empirical findings reveal that educators frequently engage in emotional labor. Beyond traditional teaching, they play multiple roles in brick-and-mortar institutions. Moreover, their routines are shaped by their self-perceived responsibilities to their families at home. Despite their efforts, they often feel undervalued by students' parents (e.g. being perceived as "glorified babysitters"), face challenging student behaviors, occasionally even contend with physical attacks, and struggle with work-life balance. Figure 2 shows the critical aspects of examining emotional labor across contexts as it highlights how emotional labor—both front and backstage—is reconfigured through migratory societal and cultural logic.

Our study shows how the underlying mechanisms of transnational gig education systems may reconfigure people's emotional labor and identity performances through a complex labor arrangement involving both human and non-human actors. For example, through their interaction with Chinese students and parents, our participants' relationships and expectations are transformed as they experience and adapt to a culture that values and appreciates educators (e.g. the Confucian value of "Zunshizhongdao"—respecting teachers and valuing education [126]). While systems embedding such respectful values could reconfigure emotional labor in a positive way, they could also misalign with participants' practices. For example, categorization and quantification of teaching through technical mechanisms designed with different cultural expectations blurs the lines between work and personal life, introducing a novel dimension to their emotional labor. Here, the technological aspects, including datafication, AI-based surveillance, and algorithmic management of the platform, and the

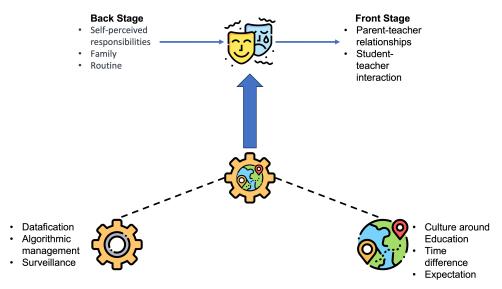


Fig. 2: Transnational sociotechnical systems mediating Perception and Performance of Identity

social aspects shaped by Chinese cultural and educational values and expectations form a complex sociotechnical arrangement (Figure 2).

6.2 The Politics of Gig Education Platforms: Locating Power and Coloniality

In addition, this work challenges and complicates the dominant paradigm where systems being designed in the West [127] subsequently migrate to Global South countries, where they are rapidly adopted [128]. Indeed, in critical HCI and social computing scholarship, decolonial and postcolonial researchers have argued that the prevailing design paradigm for computing systems is still primarily the Global North and Western-centric [79, 80]. Often used as an umbrella term, what and where is "the Global South?" Whereas the Oxford English Dictionary defines the Global South as "the countries of the world that are regarded as having a relatively low level of economic and industrial development, considered collectively, contrasted with the Global North" [129], researchers have critiqued such collective and monolithic views. In addition to using the U.S. South and Mediterranean and Eastern Europe as examples of Souths within the perceived North [130], they argued that BRICS¹⁴ nations, many of which historically were colonies, re-legitimize and replicate imperialist and capitalist hegemony [131]. Hence, we must critically reflect on how contemporary power hierarchies and coloniality are mediated by factors such as the economy and technology.

¹⁴Brazil, Russia, India, China, and South Africa

In our study, participants are from the United States, a well-established Global North location. But due to their financially constrained statuses, to understand their experiences and locate power in their engagement with Gig work on platforms designed and developed in China, one of the BRICS nations, we need to abandon the mainstream dichotomous narrative (e.g., developed vs. developing countries, the Global North vs. the Global South). Postcolonial computing scholars also encourage us to consider the ways "uneven power relations are enacted in design practice" irrespective of nations' and regions' historical conditions [79]. As computing systems harness "human experience as free raw material for translation into behavioral data," it leads to "unprecedented asymmetries in knowledge and the power" [83]. To locate the power and politics in the context of transnational gig education platforms, we reflect from three angles: normalizing certain worldviews through education, perpetuating a colonial mentality, and establishing a hegemonic platform identity.

Normalizing certain worldviews through education. First, as different cultures and political ideologies compete for influence in shaping the narratives in education, technology can play a pivotal role in normalizing the sociopolitical views of decision-makers and designers. Like the historical use of cartography and maps to embed political views, gig education platforms surveil online classrooms to ensure U.S. educators' conformity with China's geographic map standards, molding students' worldviews according to China's perspective. While nationally dominant political views are normalized through a country's educational standards, gig platforms, with the support of AI monitoring, enable their global dissemination.

Perpetuating colonial mentality. Second, gig education platforms can perpetuate a colonial mentality—the sense of cultural inferiority in relation to historic colonizers [132]. For example, the gig education platform VIPKid advertises English classes taught by certified teachers from the U.S. and Canada. ¹⁵ Such platform biases against linguistic accents, particularly those of racial minorities, reinforce a hierarchy that impedes cultural hybridity.

Establishing a hegemonic platform identity. Third, contrary to the preference toward Western linguistic practices congruent with globally embedded coloniality, these gig education platforms exhibit a platform identity. While users from various parts of the world can join, the majority are Chinese clients, which results in a default Chinese identity. While existing research on gig work highlights how Western companies dictate non-Western off-shore workers' schedules, we found that these platforms prioritize Chinese work hours and holiday patterns. The potential of a gig education platform like VIPKid to facilitate global connections between students and teachers for language learning is currently limited by its focus on primarily serving bilateral relationships between Chinese students and native English-speaking teachers from North America. This exclusivity shapes the platform's identity—who its clients and workers are and what purpose the platform serves.

¹⁵https://www.vipkid.com/en-us/

6.3 Toward Identity Alignment for Worker-centered Design in Gig Economy

Building on our empirical findings, in this section, we seek to explore how we could potentially create a more generative and fulfilling working environment in the gig economy through the concept of identity alignment. A growing body of research has uncovered moral and ethical dilemmas within the gig economy, where platform design often clashes with worker-centered principles [133]. In the landscape of platform capitalism [134], companies prioritize profit maximization by reducing product and labor costs, often at the expense of worker well-being. Previous studies have exposed various moral and ethical issues associated with gig work, such as problematic wage structures [58], employment bias [59], and income disparities [61]. Flexibility, though appealing, often brings managerial control and job insecurity. And gig platforms tend to prioritize work itself over worker well-being. In building on discourses critiquing user-centered design methods, writ broadly, Khovanskaya and colleagues [135] have argued that such methods affirm the status quo by typically designing around existing work routines. Therefore, expanding on the discourses around worker-centered design [133], which explore the design of sociotechnical systems to influence emerging and future work forms, we contribute to the HCI design agenda by introducing the concept of *Identity Alignment*. That is, researchers and designers should prioritize the development of systems that resonate with workers' self-concept and their intrinsic motivations to engage in work.

In this work, we show the transformative impact of transnational gig platforms on U.S. participants' perceptions of identity as educators across cultural contexts. Whereas the current U.S. K-12 education system presents challenges like parental disrespect and classroom disciplinary issues that undermine participants' identities as teachers, the gig education platforms, designed around respectful cultural and educational values, align with participants' self-perceptions as educators and caregivers. For instance, platforms such as VIPKid mediate student behavioral issues through a combination of human and non-human supports and allow participants to reclaim their professional identities as teachers rather than babysitters. Thus, the participants regain a sense of professional purpose.

Based on our findings, we argue that designing systems that prioritize identity alignment and match workers' identities on the platform with their self-concept can improve their work-life balance and make work meaningful for them. To achieve that objective, platforms could add features that pair workers with certain tasks that align better with their current or prior professional identities. For instance, MTurk could match teachers with tasks they do in their professional lives or tasks that could advance their professional careers, such as project management. Recognizing the capitalist constraints on social value-centric design [136], we recommend companies redesign their business models to prioritize digital workers' needs, in other words, design "a double bottom line-making the profit while pushing for social change" [92]. This approach can potentially improve workers' working environments, help them find meaning in their work, and lead to a more transformative outcome. Our findings also suggest that the reconfiguration of participants' lives through gig education platforms more closely

aligns with their internalized view of themselves and their identities. Thus, we contend that designing systems that prioritize identity alignment can enhance workers' work-life balance and overall quality of life while making work more meaningful for them.

Fully implementing identity alignment on gig platforms presents challenges, especially given the diverse motivations, values, and priorities of workers. Our study shows that, although all participants are committed to teaching, they engage with transnational gig education platforms under varying circumstances. Some show full-time commitment, whereas others participate on a part-time basis, viewing it as a secondary source of income. This diversity in interests and values poses challenges that may only be partially resolved through design. Designers should recognize that technical solutions for identity alignment have material benefits but can also be insufficient and temporal for platform workers, depending on their career stage and priorities. Nevertheless, designers can still prioritize identity alignment and implement fundamental design values such as human well-being, dignity, and justice [137] while also being sensitive to the context. In our case, promoting well-being, dignity, and respect involves paying careful attention to the personal and professional identities of the teachers, particularly those who are dedicated teachers, wives, and mothers.

We recognize that technology alone cannot and will not resolve challenges that are fundamentally social in nature [138]. Therefore, it is crucial that workers have the right and opportunities to achieve financial insecurity and job dissatisfaction without heavily relying on platform-based solutions. This leads to a call for new research and enhanced public support for alternative career pathways for workers. Additionally, drawing on recent emphasis in HCI on the parallel design of technology and policy [139], we also believe design implications could be more powerful when aligned with appropriate policy implications. Our findings have highlighted the transnational nature of gig work, and its associated challenges among knowledge workers. Apart from incorporating design considerations, future work could also advocate for policy interventions on at both domestic and international scales to increase institutional support and to further improve workers' labor conditions.

7 Limitations and Future Work

While our study makes both empirical and conceptual contributions, we acknowledge its limitations. Qualitative methods are powerful because of their situatedness, interpretative flexibility, and enabling researchers to capture the complexity of participants' experiences [140, 141]. Despite efforts to recruit a diverse group of participants, we did not secure any male online teachers, , even though they constitute 23% of the U.S. K-12 public school teaching workforce ¹⁶. Throughout our study, our observations indicate that female teachers are the predominant workforce on those gig education platforms. This paper primarily explores the experiences of female teachers' transitioning into the gig economy, including their motivations and the challenges they face

 $^{^{16}} Characteristics \quad of \quad Public \quad School \quad Teachers \quad https://nces.ed.gov/programs/coe/indicator/clr/public-school-teachers$

in both traditional and gig education settings. As such, our findings may not be generalizable to male teachers. We encourage future research to use alternative methods, such as surveys with large representative samples, to explore the gender differences and associated motivations and challenges to engage in transnational gig education work. Such methods could also help extend the current findings by quantitatively assessing the impact of data-driven and AI technologies in shaping workers' regimes and the associated emotional labor. Additionally, our study, which focuses on interviewing U.S. K-12 teachers, has provided initial insights into how geopolitics, national policies, and digital knowledge workers intersect within the global gig education market. However, to fully explore the complex power dynamics, especially against the backdrop of rising nationalism and evolving perceptions of Western culture in the current U.S.-China political climate, future research can potentially incorporate perspectives from Chinese parents, students, and platform designers. This approach could unveil more nuanced insights into the interplay between geopolitics, national identity, and how they influence digital education platforms and their stakeholders.

Funding

No funding was obtained for this study.

References

- [1] De Stefano, V.: The rise of the just-in-time workforce: On-demand work, crowdwork, and labor protection in the gig-economy. Comp. Lab. L. & Pol'y J. 37, 471 (2015)
- [2] Lampinen, A., Lutz, C., Newlands, G., Light, A., Immorlica, N.: Power struggles in the digital economy: platforms, workers, and markets. In: Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing, pp. 417–423 (2018)
- [3] Dillahunt, T.R., Wang, X., Wheeler, E., Cheng, H.F., Hecht, B., Zhu, H.: The sharing economy in computing: A systematic literature review. Proc. ACM Hum.-Comput. Interact. 1(CSCW) (2017) https://doi.org/10.1145/3134673
- [4] Wang, J., Xing Jiang, C.: Gig economy in chinese contemporary economy system. In: Proceedings of the 2022 13th International Conference on E-Education, E-Business, E-Management, and E-Learning, pp. 444–448 (2022)
- [5] Goffman, E.: The presentation of self. Life as theater: A dramaturgical sourcebook, 129–139 (2006)
- [6] Butler, J.: Gender trouble (2002)
- [7] Gecas, V.: The self-concept. Annual review of sociology 8(1), 1–33 (1982)

- [8] Tajfel, H.: Social identity and intergroup behaviour. Information (International Social Science Council) **13**(2), 65–93 (1974)
- [9] Bucholtz, M., Hall, K.: Identity and interaction: A sociocultural linguistic approach. Discourse studies **7**(4-5), 585–614 (2005)
- [10] Hotho, S.: Professional identity–product of structure, product of choice: linking changing professional identity and changing professions. Journal of Organizational Change Management **21**(6), 721–742 (2008)
- [11] Hochschild, A.R.: The managed heart: Commercialization of human feeling (2012)
- [12] Macdonald, D.: Teacher attrition: A review of literature. Teaching and teacher education 15(8), 835–848 (1999)
- [13] Espelage, D., Anderman, E.M., Brown, V.E., Jones, A., Lane, K.L., McMahon, S.D., Reddy, L.A., Reynolds, C.R.: Understanding and preventing violence directed against teachers: Recommendations for a national research, practice, and policy agenda. American Psychologist 68(2), 75 (2013)
- [14] Mcmahon, S.D., Martinez, A., Espelage, D., Rose, C., Reddy, L.A., Lane, K., Anderman, E.M., Reynolds, C.R., Jones, A., Brown, V.: Violence directed against teachers: Results from a national survey. Psychology in the Schools 51(7), 753–766 (2014)
- [15] Sutcher, L., Darling-Hammond, L., Carver-Thomas, D.: A coming crisis in teaching? Teacher supply, demand, and shortages in the US. Palo Alto, CA: Learning Policy Institute (2016)
- [16] Stinebrickner, T.R.: An empirical investigation of teacher attrition. Economics of education review 17(2), 127–136 (1998)
- [17] Shen, J.: Teacher retention and attrition in public schools: Evidence from sass91. The Journal of Educational Research **91**(2), 81–88 (1997)
- [18] Irani, L.C., Dourish, P.: Postcolonial interculturality. In: Proceedings of the 2009 International Workshop on Intercultural Collaboration, pp. 249–252 (2009)
- [19] Erikson, E.H.: Identity: Youth and crisis (7) (1968)
- [20] Halberstam, J.: Automating gender: Postmodern feminism in the age of the intelligent machine. Feminist studies 17(3), 439–460 (1991)
- [21] Butler, J.: Subjects of desire: Hegelian reflections in twentieth-century france (2012)
- [22] Goffman, E.: The nature of deference and demeanor. American Anthropologist

- **58**(3), 473–502 (1956)
- [23] Brown, E.L., Horner, C.G., Kerr, M.M., Scanlon, C.L.: United states teachers' emotional labor and professional identities. KEDI Journal of Educational Policy 11(2) (2014)
- [24] Ibarra, H., Petriglieri, J.L.: Identity work and play. Journal of Organizational Change Management 23(1), 10–25 (2010)
- [25] Darling-Hammond, L.: The challenge of staffing our schools. Educational leadership **58**(8), 12–17 (2001)
- [26] Flores, M.A., Day, C.: Contexts which shape and reshape new teachers' identities: A multi-perspective study. Teaching and teacher education **22**(2), 219–232 (2006)
- [27] Veenman, S.: Perceived problems of beginning teachers. Review of educational research **54**(2), 143–178 (1984)
- [28] Banks, J.A., Banks, C.A.M.: Multicultural education: Issues and perspectives (2019)
- [29] Nieto, S.: Multicultural education in the united states: Historical realities, ongoing challenges, and transformative possibilities. In: The Routledge International Companion to Multicultural Education, pp. 79–95. Routledge, ??? (2009)
- [30] Van Den Tillaart, S., Kurtz, D., Cash, P.: Powerlessness, marginalized identity, and silencing of health concerns: Voiced realities of women living with a mental health diagnosis. International journal of mental health nursing 18(3), 153–163 (2009)
- [31] Sutton, R.E., Mudrey-Camino, R., Knight, C.C.: Teachers' emotion regulation and classroom management. Theory into practice 48(2), 130–137 (2009)
- [32] Hargreaves, A.: Mixed emotions: Teachers' perceptions of their interactions with students. Teaching and teacher education **16**(8), 811–826 (2000)
- [33] Liu, X.S., Meyer, J.P.: Teachers' perceptions of their jobs: A multilevel analysis of the teacher follow-up survey for 1994-95. Teachers college record **107**(5), 985–1003 (2005)
- [34] Lasky, S.: The cultural and emotional politics of teacher–parent interactions. Teaching and Teacher Education **16**(8), 843–860 (2000)
- [35] Scott, J., et al.: Wellbeing and workload: What are our graduate teachers telling us? Independent Education 49(3), 14 (2019)
- [36] Garner, P.W.: Emotional competence and its influences on teaching and learning.

- Educational Psychology Review 22(3), 297–321 (2010)
- [37] Griffin, G.: Teaching as a gendered experience. Journal of Teacher Education 48(1), 7–18 (1997)
- [38] Apple, M.W.: Gendered teaching, gendered labor 1. In: Critical Studies in Teacher Education, pp. 57–83. Routledge, ??? (2018)
- [39] Grimshaw, D., Cooke, F.-L., Grugulis, I., Vincent, S.: New technology and changing organisational forms: implications for managerial control and skills. New Technology, Work and Employment 17(3), 186–203 (2002)
- [40] Donovan, S.A., Bradley, D.H., Shimabukuru, J.O.: What does the gig economy mean for workers? (2016)
- [41] Tran, M., Sokas, R.K.: The gig economy and contingent work: An occupational health assessment. Journal of occupational and environmental medicine **59**(4), 63 (2017)
- [42] Brown, B.A.: Your uber driver is here, but their benefits are not: The abc test, assembly bill 5, and regulating gig economy employers. Brook. J. Corp. Fin. & Com. L. **15**, 183 (2020)
- [43] De Stefano, V.: The eu commission's proposal for a directive on platform work: an overview. Osgoode Legal Studies Research Paper (4223721) (2022)
- [44] Cauffman, C.: New EU rules on business-to-consumer and platform-to-business relationships. SAGE Publications Sage UK: London, England (2019)
- [45] Cárdenas, L., Villanueva, P.: Labour policy in the face of the covid-19 socio-economic crisis in spain: institutional change and social pacts. Employee Relations: The International Journal 45(2), 437–456 (2023)
- [46] Government, H.: Good work plan. Department for Business, Energy and Industrial Strategy London (2018)
- [47] Prassl, J., Risak, M.: Uber, taskrabbit, and co.: Platforms as employersrethinking the legal analysis of crowdwork. Comp. Lab. L. & Pol'y J. 37, 619 (2015)
- [48] Hannák, A., Wagner, C., Garcia, D., Mislove, A., Strohmaier, M., Wilson, C.: Bias in online freelance marketplaces: Evidence from taskrabbit and fiverr. In: Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing, pp. 1914–1933 (2017). ACM
- [49] Ross, J., Irani, L., Silberman, M.S., Zaldivar, A., Tomlinson, B.: Who are the crowdworkers?: Shifting demographics in mechanical turk. In: CHI '10 Extended Abstracts on Human Factors in Computing Systems. CHI EA '10, pp. 2863–2872.

- [50] Burke, R., Broderick, J.: Navigating the gig: Rideshare drivers and mobile technologies in context. In: Proceedings of the 35th ACM International Conference on the Design of Communication. SIGDOC '17, pp. 34–1346. ACM, New York, NY, USA (2017). https://doi.org/10.1145/3121113.3121233
- [51] Ma, N.F., Yuan, C.W., Ghafurian, M., Hanrahan, B.V.: Using stakeholder theory to examine drivers' stake in uber. In: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems. CHI '18, pp. 83–18312. ACM, New York, NY, USA (2018). https://doi.org/10.1145/3173574.3173657
- [52] Soriano, C.R.R., Cabañes, J.V.A.: Entrepreneurial solidarities: Social media collectives and filipino digital platform workers. Social Media+ Society 6(2), 2056305120926484 (2020)
- [53] Abilio, L.C., Grohmann, R., Weiss, H.C.: Struggles of delivery workers in brazil: Working conditions and collective organization during the pandemic. Journal of Labor and Society 24(4), 598–616 (2021)
- [54] Chen, J.Y.: Thrown under the bus and outrunning it! the logic of didi and taxi drivers' labour and activism in the on-demand economy. New media & society **20**(8), 2691–2711 (2018)
- [55] Ahmed, S.I., Bidwell, N.J., Zade, H., Muralidhar, S.H., Dhareshwar, A., Karachiwala, B., Tandong, C.N., O'Neill, J.: Peer-to-peer in the workplace: A view from the road. In: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, pp. 5063–5075 (2016)
- [56] Popiel, P.: "boundaryless" in the creative economy: assessing freelancing on upwork. Critical Studies in Media Communication 34(3), 220–233 (2017)
- [57] Adams, A., Freedman, J., Prassl, J.: Rethinking legal taxonomies for the gig economy. Oxford Review of Economic Policy **34**(3), 475–494 (2018)
- [58] Hara, K., Adams, A., Milland, K., Savage, S., Callison-Burch, C., Bigham, J.P.: A data-driven analysis of workers' earnings on amazon mechanical turk. In: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, p. 449 (2018). ACM
- [59] Hannák, A., Wagner, C., Garcia, D., Mislove, A., Strohmaier, M., Wilson, C.: Bias in online freelance marketplaces: Evidence from taskrabbit and fiverr. In: Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing. CSCW '17, pp. 1914–1933. ACM, New York, NY, USA (2017). https://doi.org/10.1145/2998181.2998327 . http://doi.acm.org/10. 1145/2998181.2998327

- [60] Irani, L.C., Silberman, M.S.: Turkopticon: Interrupting worker invisibility in amazon mechanical turk. In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 611–620 (2013)
- [61] Cook, C., Diamond, R., Hall, J., List, J.A., Oyer, P.: The gender earnings gap in the gig economy: Evidence from over a million rideshare drivers. Technical report, National Bureau of Economic Research (2018)
- [62] Gray, M.L., Suri, S., Ali, S.S., Kulkarni, D.: The crowd is a collaborative network. In: Proceedings of the 19th ACM Conference on Computer-supported Cooperative Work & Social Computing, pp. 134–147 (2016)
- [63] Ross, J., Irani, L., Silberman, M.S., Zaldivar, A., Tomlinson, B.: Who are the crowdworkers? shifting demographics in mechanical turk. In: CHI'10 Extended Abstracts on Human Factors in Computing Systems, pp. 2863–2872 (2010)
- [64] Carmel, E., Tjia, P.: Offshoring information technology: Sourcing and outsourcing to a global workforce (2005)
- [65] Carmel, E.: Building your information systems from the other side of the world: How infosys manages time zone differences. MIS Quarterly Executive **5**(1) (2006)
- [66] Prikladnicki, R., Carmel, E.: Is time-zone proximity an advantage for software development? the case of the brazilian it industry. In: 2013 35th International Conference on Software Engineering (ICSE), pp. 973–981 (2013). IEEE
- [67] Ravishankar, M., Pan, S.L., Myers, M.D.: Information technology offshoring in india: a postcolonial perspective. European Journal of Information Systems 22, 387–402 (2013)
- [68] Winner, L.: Do artifacts have politics? Daedalus, 121–136 (1980)
- [69] Hardt, M., Negri, A.: Empire (2001)
- [70] Keulen, T.: Freedom in and out of work: platforms, precarity, and the democratization of work (2023)
- [71] Gill, R., Pratt, A.: In the social factory? immaterial labour, precariousness and cultural work. Theory, culture & society **25**(7-8), 1–30 (2008)
- [72] Baym, N.K.: Playing to the crowd: Musicians, audiences, and the intimate work of connection (2018)
- [73] Fuchs, C.: Labor in informational capitalism and on the internet. The Information Society **26**(3), 179–196 (2010)

- [74] Das, D., Semaan, B.: Collaborative identity decolonization as reclaiming narrative agency: Identity work of bengali communities on quora. In: Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems, pp. 1–23 (2022)
- [75] Kumar, N., Jafarinaimi, N., Bin Morshed, M.: Uber in bangladesh: The tangled web of mobility and justice. Proceedings of the ACM on Human-Computer Interaction 2(CSCW), 1–21 (2018)
- [76] Das, D., Østerlund, C., Semaan, B.: "jol" or "pani"?: How does governance shape a platform's identity? Proceedings of the ACM on Human-Computer Interaction 5(CSCW2), 1–25 (2021)
- [77] Philip, K., Irani, L., Dourish, P.: Postcolonial computing: A tactical survey. Science, Technology, & Human Values **37**(1), 3–29 (2012)
- [78] Mouton, M., Burns, R.: (digital) neo-colonialism in the smart city. Regional Studies 55(12), 1890–1901 (2021)
- [79] Irani, L., Vertesi, J., Dourish, P., Philip, K., Grinter, R.E.: Postcolonial computing: A lens on design and development. In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. CHI '10, pp. 1311–1320. ACM, New York, NY, USA (2010). https://doi.org/10.1145/1753326.1753522
- [80] Dourish, P., Mainwaring, S.D.: Ubicomp's colonial impulse. In: Proceedings of the 2012 ACM Conference on Ubiquitous Computing. UbiComp '12, pp. 133–142. ACM, New York, NY, USA (2012). https://doi.org/10.1145/2370216. 2370238
- [81] Cheney-Lippold, J.: We are data: Algorithms and the making of our digital selves (2018)
- [82] Rudder, C.: Inside OKCupid: The math of online dating. Retrieved from https://ed.ted.com/lessons/inside-okcupid-the-math-of-online-dating-christian-rudder. Last accessed: February 14, 2023 (2013)
- [83] Zuboff, S.: The age of surveillance capitalism: The fight for a human future at the new frontier of power (2019)
- [84] Wood, A.J., Graham, M., Lehdonvirta, V., Hjorth, I.: Good gig, bad gig: autonomy and algorithmic control in the global gig economy. Work, Employment and Society 33(1), 56–75 (2019)
- [85] Rosenblat, A.: Uberland: How algorithms are rewriting the rules of work (2018)
- [86] Mohlmann, M., Zalmanson, L.: Hands on the wheel: Navigating algorithmic management and uber drivers' autonomy (2017)

- [87] Rosenblat, A., Stark, L.: Algorithmic labor and information asymmetries: A case study of uber's drivers. International Journal of Communication 10, 27 (2016)
- [88] Munoz, I., Sawyer, S., Dunn, M.: New futures of work or continued marginalization? the rise of online freelance work and digital platforms. In: 2022 Symposium on Human-Computer Interaction for Work, pp. 1–7 (2022)
- [89] Munoz, I., Dunn, M., Sawyer, S., Michaels, E.: Platform-mediated markets, online freelance workers and deconstructed identities. Proceedings of the ACM on Human-Computer Interaction 6(CSCW2), 1–24 (2022)
- [90] Sannon, S., Sun, B., Cosley, D.: Privacy, surveillance, and power in the gig economy. In: Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems, pp. 1–15 (2022)
- [91] Newlands, G.: Algorithmic surveillance in the gig economy: The organization of work through lefebvrian conceived space. Organization Studies **42**(5), 719–737 (2021)
- [92] Gray, M.L., Suri, S.: Ghost work: how to stop silicon valley from building a new global underclass (2019)
- [93] Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., Walker, K.: Purposive sampling: complex or simple? research case examples. Journal of research in Nursing **25**(8), 652–661 (2020)
- [94] Biernacki, P., Waldorf, D.: Snowball sampling: Problems and techniques of chain referral sampling. Sociological methods & research **10**(2), 141–163 (1981)
- [95] Hagar, C., Haythornthwaite, C.: Crisis, farming and community. Journal of Community Informatics 3, 41 (2005)
- [96] Weiss, R.S.: Learning from strangers: The art and method of qualitative interview studies (1995)
- [97] Wengraf, T.: Qualitative research interviewing: Biographic narrative and semistructured methods (2001)
- [98] Corbin, J., Strauss, A.L., Strauss, A.: Basics of qualitative research (2015)
- [99] Garner, P.W., Moses, L.K., Waajid, B.: Prospective teachers'awareness and expression of emotions: Associations with proposed strategies for behavioral management in the classroom. Psychology in the Schools 50(5), 471–488 (2013)
- [100] O'Connell, M.E., Boat, T., Warner, K.E., et al.: Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities 7 (2009)

- [101] Martin, D., Hanrahan, B.V., O'Neill, J., Gupta, N.: Being a turker. In: Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work. CSCW '14, pp. 224–235. ACM, New York, NY, USA (2014). https://doi.org/10.1145/2531602.2531663
- [102] Berg, J.: Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers. Comp. Lab. L. & Pol'y J. **37**, 543 (2015)
- [103] Brewer, R., Morris, M.R., Piper, A.M.: Why would anybody do this?: Understanding older adults' motivations and challenges in crowd work. In: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, pp. 2246–2257 (2016). ACM
- [104] Marlow, L., et al.: Teacher job satisfaction. (1996)
- [105] Goldring, R., Taie, S., Riddles, M.: Teacher attrition and mobility: Results from the 2012-13 teacher follow-up survey. first look. nces 2014-077. National Center for Education Statistics (2014)
- [106] Wu, J., Singh, M.: 'wishing for dragon children': ironies and contradictions in china's education reform and the chinese diaspora's disappointments with australian education. The Australian Educational Researcher **31**(2), 29–44 (2004)
- [107] Huang, H., Xia, X., Zhao, W., Pan, X., Zhou, X.: Overwork, job embeddedness and turnover intention among chinese knowledge workers. Asia Pacific Journal of Human Resources **59**(3), 442–459 (2021)
- [108] Li, X.: Managerial technique and worker subjectivity in dialogue: Understanding overwork in china's internet industry. Work, Employment and Society 37(6), 1699–1716 (2023)
- [109] Wang, J.J.: How managers use culture and controls to impose a '996'work regime in china that constitutes modern slavery. Accounting & Finance 60(4), 4331– 4359 (2020)
- [110] Zhao, X.: Educating competitive students for a competitive nation: Why and how has the chinese discourse of competition in education rapidly changed within three decades? Berkeley Review of Education **6**(1) (2016)
- [111] Newlands, G., Lutz, C., Fieseler, C.: The conditioning function of rating mechanisms for consumers in the sharing economy. Internet Research 29(5), 1090–1108 (2019)
- [112] Singh, R., Jackson, S.: Seeing like an infrastructure: Low-resolution citizens and the aadhaar identification project. Proceedings of the ACM on Human-Computer Interaction 5(CSCW2), 1–26 (2021)

- [113] Liu, P., Liu, L., Xie, Y.: Leadership of class teachers (banzhuren) in improving student learning: Case studies of chinese primary schools. Frontiers of Education in China 13(1), 28–55 (2018)
- [114] Guo, Y.: Why didn't they show up? rethinking esl parent involvement in k-12 education. TESL Canada Journal, 80–95 (2006)
- [115] Cotton, K., Wikelund, K.R.: Parent involvement in education. School improvement research series **6**(3), 17–23 (1989)
- [116] Jhaver, S., Karpfen, Y., Antin, J.: Algorithmic anxiety and coping strategies of airbnb hosts. In: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, p. 421 (2018). ACM
- [117] Penney, J.W.: Chilling effects: Online surveillance and wikipedia use. Berkeley Tech. LJ 31, 117 (2016)
- [118] Stoycheff, E., Liu, J., Xu, K., Wibowo, K.: Privacy and the panopticon: Online mass surveillance's deterrence and chilling effects. New media & society **21**(3), 602–619 (2019)
- [119] Büchi, M., Festic, N., Latzer, M.: The chilling effects of digital dataveillance: A theoretical model and an empirical research agenda. Big Data & Society 9(1), 20539517211065368 (2022)
- [120] Hochschild, A., Machung, A.: The second shift: Working families and the revolution at home (2012)
- [121] Baym, N., Ellison, N.B.: Toward work's new futures: Editors' introduction to technology and the future of work special issue. Journal of Computer-Mediated Communication 28(4), 031 (2023)
- [122] Irani, L., Dourish, P., Mazmanian, M.: Shopping for sharpies in seattle: mundane infrastructures of transnational design. In: Proceedings of the 3rd International Conference on Intercultural Collaboration, pp. 39–48 (2010)
- [123] Williams, A., Anderson, K., Dourish, P.: Anchored mobilities: mobile technology and transnational migration. In: Proceedings of the 7th ACM Conference on Designing Interactive Systems, pp. 323–332 (2008)
- [124] Lindtner, S., Anderson, K., Dourish, P.: Cultural appropriation: information technologies as sites of transnational imagination. In: Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work, pp. 77–86 (2012)
- [125] Williams, A., Lindtner, S., Anderson, K., Dourish, P.: Multisited design: An analytical lens for transnational hci. Human-Computer Interaction 29(1), 78– 108 (2014)

- [126] Han, J., Han, Y.: Cultural concepts as powerful theoretical tools: Chinese teachers' perceptions of their relationship with students in a cross-cultural context. International Journal for the Scholarship of Teaching and Learning (2019)
- [127] Wyche, S., Dillahunt, T.R., Simiyu, N., Alaka, S.: "if god gives me the chance i will design my own phone": Exploring mobile phone repair and postcolonial approaches to design in rural kenya. In: Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing. UbiComp '15, pp. 463–473. ACM, New York, NY, USA (2015). https://doi.org/10.1145/ 2750858.2804249
- [128] Escobar, A.: Encountering development: The making and unmaking of the third world (2011)
- [129] Dictionary, O.E.: Global South. https://www.oed.com/dictionary/global-south_n. Last accessed: Sep 22, 2023 (1968)
- [130] López, A.J.: Introduction: The (post) global south. The Global South, 1–11 (2007)
- [131] Willems, W.: Beyond normative dewesternization: Examining media culture from the vantage point of the global south. The Global South 8(1), 7–23 (2014)
- [132] Nünning, V., Nünning, A.: Fictions of empire and the (un-) making of imperialist mentalities: colonial discourse and post-colonial criticism revisited. Foreign Literature Studies **37**(4), 22–38 (2015)
- [133] Fox, S.E., Khovanskaya, V., Crivellaro, C., Salehi, N., Dombrowski, L., Kulkarni, C., Irani, L., Forlizzi, J.: Worker-centered design: Expanding hci methods for supporting labor. In: Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems. CHI EA '20, pp. 1–8. Association for Computing Machinery, New York, NY, USA (2020). https://doi.org/10.1145/3334480.3375157
- [134] Srnicek, N.: Platform capitalism (2017)
- [135] Khovanskaya, V., Dombrowski, L., Harmon, E., Korn, M., Light, A., Stewart, M., Voida, A.: Designing against the status quo. Interactions 25(2), 64–67 (2018) https://doi.org/10.1145/3178560
- [136] Wolf, C.T., Asad, M., Dombrowski, L.S.: Designing within capitalism. In: Designing Interactive Systems Conference, pp. 439–453 (2022)
- [137] Friedman, B., Hendry, D.G.: Value sensitive design: Shaping technology with moral imagination (2019)
- [138] Madianou, M.: Smartphones as polymedia. Journal of Computer-Mediated

- Communication 19(3), 667–680 (2014)
- [139] Yang, Q., Wong, R.Y., Gilbert, T., Hagan, M.D., Jackson, S., Junginger, S., Zimmerman, J.: Designing Technology and Policy Simultaneously: Towards A Research Agenda and New Practice. In: Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems. CHI EA '23, pp. 1–6. Association for Computing Machinery, New York, NY, USA (2023). https://doi.org/10.1145/3544549.3573827 . https://dl.acm.org/doi/10.1145/3544549.3573827 Accessed 2023-05-30
- [140] Pinch, T.J., Bijker, W.E.: The Social Construction of Facts and Artefacts: or How the Sociology of Science and the Sociology of Technology might Benefit Each Other. Social Studies of Science 14(3), 399–441 (1984) https://doi.org/10. 1177/030631284014003004 . Publisher: SAGE Publications Ltd. Accessed 2023-09-13
- [141] Strauss, A., Corbin, J.: Basics of qualitative research (1990)