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RESEARCH ARTICLE

# Digital technologies and identity negotiation: a study of trilingual Uyghur university students' language learning experiences in intranational migrations

Xiaoya Ye
Capital Normal University, China (xiaoya.ye@cnu.edu.cn)

**Abstract**

This three-year longitudinal case study explored how trilingual Uyghur intranational migrant students utilized digital technologies to learn languages and negotiate their identities in Han-dominant environments during their internal migrations within China, a topic that has been scarcely researched before. Adopting a poststructuralist perspective of identity, the study traced four Uyghur students who migrated from underdeveloped southern Xinjiang to northern Xinjiang for junior high school education, and to more developed cities in eastern and southern China for senior high school education and higher education. A qualitative approach was adopted, utilizing semi-structured interviews, class and campus observations, daily conversations, WeChat conversations, participants' reflections, and assignments. Findings reveal that Uyghur minority students utilized digital technologies to bridge the English proficiency gap with Han students, negotiate their marginalized identities, integrate into the mainstream education system, and extend the empowerment to other ethnic minority students. This was in sharp contrast to the significant challenges and identity crises they faced when they did not have access to digital technologies to learn Mandarin in boarding secondary schools. An unprecedented finding is that, with digital empowerment, Uyghur minority students could achieve accomplishments that were even difficult for Han students to attain and gain upward social mobility by finding employment in Han-dominant first-tier cities. The implications of utilizing digital technologies to support intranational migrant ethnic minority students' language learning and identity development are discussed.

**Keywords:** digital technologies; identity; trilingual; intranational migrations; Uyghur students

## 1. Introduction

In the age of global migration, the rapid advancement of digital technologies has profoundly reshaped language learning. The intersection of migration, language learning, and information technology has become a burgeoning research focus that has garnered widespread attention from scholars and significantly necessitates further exploration (Bradley & Al-Sabbagh, 2022; Eilola & Lilja, 2021; Guichon, 2019; Kukulska-Hulme, 2019). It has been widely acknowledged that language learning involves identity reconstruction (Norton, 2013). Consequently, an increasing amount of research has delved into how migrant language learners negotiate and shape their identities while using information technology to acquire new languages and integrate into host communities (Chen, 2013; Darvin & Norton, 2014a; Lam, 2000, 2004, 2009). Nevertheless, these

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studies are primarily based in Western environments, and predominantly concentrate on the experiences of cross-border ethnic minorities. There is scarce research focusing on how intranational migrant ethnic minorities navigate their identities while using digital technologies to learn new languages when they move within their native country, such as Uyghur migrant students in China.

China, a multi-ethnic country, officially recognizes 55 ethnic minority groups (The State Council, The People's Republic of China, 2014) alongside the Han majority, which comprises 91.11% of the national population (Xinhua News Agency, 2021). Compared to the eastern coastal regions of China, the areas where ethnic minorities live are often behind in terms of economic and social development (Tsung & Cruickshank, 2009). Situated in the north-western border region of China, the Xinjiang Uyghur Autonomous Region (XUAR) is a vibrant tapestry of linguistic and ethnic diversity, with the Uyghur people forming the largest minority group (Statistic Bureau of Xinjiang Uyghur Autonomous Region, 2021). The Uyghur language is the mother tongue of the Uyghur ethnic group, and Chinese (Mandarin) is the national language. The economic underdevelopment of XUAR, in stark contrast to the more prosperous Han-dominant regions of Central and East China, has led to a scarcity of resources and a widening educational gap for Uyghur students (Cui & De Costa, 2024).

To address the educational disparities between the eastern and western regions of China, and to tackle the educational inequalities between ethnic minority and majority groups, the Chinese government initiated a program in 1990 called "*nei di gao xiao yuan jiang xie zuo ji hua*" ("Program of Improving Higher Education Among Minorities in Xinjiang by Admitting Them in Tertiary Institutions Located in China Proper"). The program aims to enhance the educational opportunities and outcomes for ethnic minority students and foster a sense of unity and solidarity among different ethnic groups within the country (Ministry of Education, 2010). More specifically, the Chinese government established *Neichu ban* (middle schools within Xinjiang) and *Neigao ban* (high schools outside Xinjiang) to offer increased access to quality education at no cost for academically outstanding Uyghur students, particularly those coming from peasant backgrounds (Han, De Costa & Cui, 2019). Therefore, an increasing number of Uyghur students from underdeveloped southern Xinjiang migrate to relatively developed northern Xinjiang to attend *Neichu ban*, and migrate from underdeveloped XUAR to more developed regions in eastern and southern China to attend *Neigao ban* and universities.

However, our understanding of how these Uyghur students navigate their identities while migrating across China and employing digital technologies to acquire Mandarin and English is limited. This knowledge gap is further exacerbated by the fact that ethnic minority students may encounter marginalization within the mainstream Chinese education system (Han, De Costa & Cui, 2016). This study is situated against this complex backdrop.

## 2. Literature review

Digital technologies have significantly changed language learning across micro (classroom), meso (institution), and macro (society) dimensions over the past three decades. Internet connectivity, mobile communication devices, and social media have made possible new ways of social participation (Darvin, 2016). In this digitally interconnected world, individuals seamlessly navigate between online and offline environments, obscuring the demarcations of time and space and changing concepts of public and private realms (Gee & Hayes, 2011). By transforming language learning, digital technologies also transform language learners' identities (Kern, 2021).

### *2.1 Digital technologies and identities of language learners*

In the age of pervasive social virtualities, which refers to the integration of real-world social connections and networks into virtual spaces, identity research in computer-assisted language learning has begun to explore the emergence of entirely new forms of subject positions known as

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"virtual subjectivities" (Klimanova, 2021: 194). These subjectivities reflect a poststructural comprehension of the self "expressed as fluid abstraction, reified through the individual association with a reality that may be equally flexible" (Papacharissi, 2012: 210). For example, Wu's (2018) study demonstrated that language learners' online positionings are multiple, emergent, and contested, and that language learners are not confined to predefined identities but negotiate fluid positions through discursive practices.

The convergence of technology and language learning unveils a realm where learners navigate a landscape of digital interactions to construct and negotiate their evolving identities. Through various virtual platforms, individuals transcend traditional boundaries, embracing autonomy and agency in shaping their linguistic journeys. This digital transformation not only changes how individuals learn but also encourages a dynamic interaction between how they see themselves and their relationships with others. As learners engage in diverse online spaces, the fusion of technology, identity construction, autonomy, and intercultural communication forms a rich web of interconnected themes, weaving a narrative of empowerment, self-discovery, and communicative fluidity in the digital age of language acquisition (e.g. Kohn & Hoffstaedter, 2017; Norton & Williams, 2012; Rahimi, 2023; Ros i Solé, Calic & Neijmann, 2010; Schreiber, 2015).

### 2.2 Digital technologies and identities of migrant language learners

Some researchers (e.g. Chen, 2013; Darvin & Norton, 2014a; Lam, 2000, 2004, 2009) have explored how migrant learners utilize digital platforms to navigate and shape their identities, with a central focus on the pivotal role of language in this transformative process. These migrant learners strategically adopt diverse discourses, code-switch between languages, and incorporate native languages to construct multifaceted identities. Empowered by the digital spaces, migrant learners gain confidence and agency in expressing themselves authentically. The narratives highlight a transnational dimension (Duff, 2015), illustrating how migrant learners transcend physical borders to connect with diverse communities, share migration experiences, and affirm their unique identities, fostering a sense of belonging and self-expression beyond conventional boundaries.

Among the scholars researching this area, Lam's research holds significance because it not only examines the influence of social contexts on language usage in online environments but also explores the impact of online communication on shaping social contexts and construction of participants' identities (Kern, 2021). For example, Lam (2000) examined how Almon, a Chinese immigrant teenager in the United States (US), constructed his textual identity in English through online correspondence with a transnational group of Japanese pop culture fans. Almon adopted various discourses to fashion an alternative self and social affiliations, overcoming alienation from standard English and gaining confidence in self-expression. Online involvement enabled Almon to cultivate a fresh identity previously inaccessible within his local community and school. Lam (2004) investigated how two Chinese immigrant teenagers in the US constructed a bilingual identity through participating in an English-Cantonese bilingual chatroom. They used a mixed English-Cantonese code to build rapport and solidarity with Chinese youth worldwide, creating a collective ethnic identity that challenged the racialized English language socialization imposed on them in US schools and gained confidence in speaking English.

In line with Lam's research, Darvin and Norton (2014a) argue that digital storytelling can affirm migrant learners' transnational identities and stimulate learners to fully invest themselves in the learning process. By creating multimodal narratives that incorporate their native languages and cultures, learners can share their migration experiences. This helps develop their "transnational literacies," bridging their backgrounds with classroom literacy. Through authoring their stories digitally, learners gain voice, agency, and ownership in the learning process. Digital storytelling provides a space for migrant identities and diverse knowledge to be recognized and valued. Darvin and Norton (2014a) discuss how this identity affirmation through digital storytelling encourages migrant learners' greater investment in acquiring the target language.

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Moreover, researchers also pay attention to the impact of digital technologies on the identity construction and foreign language learning of migrants from different socioeconomic classes (e.g. Darvin & Norton, 2014b; Lemphane & Prinsloo, 2014). The intersection of digital technologies, social class, and learner identity manifests as a complex web of opportunities and limitations. Socioeconomic disparities influence how individuals engage with digital tools, shaping their perceptions and paths toward identity formation. Understanding these dynamics is crucial for addressing educational inequalities and fostering inclusive learning environments that empower all learners to navigate the digital landscape with agency and equity.

### 2.3 Digital technologies and identity construction of trilingual intranational migrant learners

While current research explores the convergence of migration, information and communication technologies, and identity formation, the intersection of trilingual intranational migration, digital technologies, and identity construction has been scarcely studied. In the context of internal migration, only a handful of studies have investigated identity construction of internal migrant students (e.g. Cui, 2022; Cui & De Costa, 2022, 2024; Guo & Gu, 2016). However, almost none of them have focused on the impact of using digital technologies on internal migrants' identities. To address this research gap, this research conducts a three-year longitudinal case study exploring the intersection of trilingual intranational migration, digital technologies, and migrant learners' identity construction.

Enlightened by Weedon (1997) and Bourdieu (1991), Norton (2013) defines identity as "the way a person understands his or her relationship to the world, how that relationship is constructed across time and space, and how the person understands possibilities for the future" (p. 4). Taking on a poststructuralist approach, Norton (2013) argues that identity is "diverse, contradictory, dynamic, and changing over historical time and social space" rather than being static, fixed, essential, and coherent (p. 4). Numerous studies have explored the identities of language learners from a poststructuralist perspective (e.g. De Costa, 2016; Norton Peirce, 1995).

Adopting a poststructuralist perspective of identity (Norton, 2013), this study investigates how trilingual Uyghur intranational migrants utilize digital technologies to learn languages and how digital technologies assist them in negotiating and constructing identities in Han-dominant environments. The research questions are as follows:

1. To what extent did the trilingual Uyghur intranational migrants utilize digital technologies to learn Mandarin in boarding schools and to learn English at university?
2. How did their use of digital technologies assist them in negotiating and constructing identities in Han-dominant environments?

## 3. Methodology

### 3.1 Research site and participants

This study is part of a larger longitudinal qualitative project carried out at a comprehensive public university in Beijing, China, an internationally recognized first-tier city. The larger project, involving five Uyghur students, has been conducted for two years and will continue for one more year. It aims to explore the trajectory of English-major Uyghur students' language learning and identity negotiation as pre-service teachers and in-service teachers.

As a lecturer in the English education department at the university, I teach third-year undergraduate major courses, typically including about two ethnic minority students per class. Given my research focus on the experiences of ethnic minority students, I invited these students from my classes to participate in this project. I fully informed them of the study's purpose and procedures in Mandarin, a language in which participants had achieved native-like proficiency during their university years. To address potential power imbalances, I emphasized that their participation was

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**Table 1.** Participants' educational background and language learning trajectory

| Student participant | Educational stage | Type | Location | Medium of instruction |
|---|---|---|---|---|
| Lucy | Primary school | Ethnic school | Moyu County, Southern Xinjiang Uyghur Autonomous Region (XUAR) | Uyghur |
| | Middle school | *Neichu ban* | Karamay, Northern XUAR | Mandarin |
| | High school | *Neigao ban* | Weihai, Shandong Province, East China | Mandarin |
| | University | Public university | Beijing, East China | English (major courses) and Mandarin (non-major courses) |
| Jane | Primary school | Ethnic school | Luntai County, Southern XUAR | Uyghur |
| | Middle school | Bilingual school | Luntai County, Southern XUAR | Uyghur, Mandarin |
| | High school | *Neigao ban* | Tianjin, East China | Mandarin |
| | University | Public university | Beijing, East China | English (major courses) and Mandarin (non-major courses) |
| Betty | Primary school | Ethnic school | Kashi Bachu, Southern XUAR | Uyghur |
| | Middle school | *Neichu ban* | Urumqi, Northern XUAR | Mandarin |
| | High school | *Neigao ban* | Shanghai, East China | Mandarin |
| | University | Public university | Beijing, East China | English (major courses) and Mandarin (non-major courses) |
| Diana | Primary school | Ordinary school | Kuche, Southern XUAR | Uyghur |
| | Middle school | *Neichu ban* | Changji, Northern XUAR | Mandarin |
| | High school | *Neigao ban* | Shenzhen, South China | Mandarin |
| | University | Public university | Beijing, East China | English (major courses) and Mandarin (non-major courses) |

entirely voluntary and would not affect their academic scores. I explained that this project, expected to last two to three years, aims to explore their identity, emotions, and professional development. I ensured the study's timing would be flexible, to be conducted at their convenience when they were relaxed and not busy, and assured them that all information and data provided would be kept strictly confidential and used solely for research purposes. I made it clear that they had the freedom and right to withdraw from this project at any time without any negative consequences.

I sent official invitation letters to nine ethnic minority students across my classes. Five Uyghur students volunteered to take part, giving their approval and signing written consent forms that outlined their rights.

For the present study, I report on four Uyghur students: Lucy, Jane, Betty, and Diana (all names are pseudonyms). The fifth participant, who attended regular local secondary schools rather than *Neichu ban* or *Neigao ban*, was not included in this study. Based on participants' reflections, their basic information is listed in Table 1.

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### 3.2 Data collection and analysis

Data were collected between September 2021 and September 2024 through semi-structured interviews, class and campus observations, daily conversations, WeChat conversations, participants' reflections, and assignments. Semi-structured interviews were guided by questions about participants' usage of digital technologies, their language learning experiences, and their identities. The recorded interviews were conducted in Mandarin to avoid misunderstandings. Table S1 (see supplementary material) details the research data collected from each participant and includes unstructured participant observation details.

When analyzing the data set, I adopted the fundamental approaches to qualitative data analysis outlined by Miles, Huberman and Saldaña (2014). Four rounds of data analysis were conducted. First, I transcribed interviews and conversations verbatim, and read the transcripts, observation notes, participants' reflections, and relevant qualitative data multiple times in order to familiarize myself with the data and obtain a holistic and thorough understanding of it. Second, I conducted open coding by identifying and labeling categories and subcategories relevant to the research questions. I juxtaposed the categories from the data of interviews and conversations with those from observations and participants' reflections for triangulation and cross-analysis. I also revised, merged, and reorganized categorizations when necessary. Third, I sought to uncover the logical relationships among different categories (e.g. usage of digital technologies, language learning, intranational migrations, and identities). Fourth, I sent the transcribed data, coded categories, and identified logical relationships back to the participants to obtain their validation and ensure the accuracy of the analysis. Throughout the data analysis process, I consulted with two of my colleagues, who reviewed my interpretations and provided constructive feedback. These discussions played an important role in minimizing researcher bias and enhancing the credibility and validity of the data analysis.

## 4. Findings

In exploring how digital technologies supported language learning and identity negotiation, a detailed coding of participant experiences across different educational stages was conducted. Table S2 (see supplementary material) outlines the key themes that emerged from the data and informs the detailed analysis that follows.

### 4.1 Mandarin learning in boarding secondary schools in more developed cities

When participants were in primary schools, the language of instruction was Uyghur. Although they had Mandarin courses, their proficiency in Mandarin was quite limited upon graduating from primary schools. When they gained admission to *Neichu ban* in more developed cities in Northern XUAR, where Mandarin was the medium of instruction, they discovered their Mandarin proficiency was extremely limited:

> All subjects, including mathematics, were instructed in Mandarin, which I could not understand at all when I entered junior high school . . . I could not even understand simple daily instructions like "turn right," "turn left," or "turn off the light." (First interview with Lucy, May 22, 2023)

Because their Mandarin proficiency was extremely limited, their academic performance had plummeted. Lucy ranked second to last in her class in Grade 7, although she had been the top student in her primary school. Diana felt desperate, crying profusely every day. She even considered leaving *Neichu ban* and transferring to another ordinary junior high school, as several

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ethnic minority classmates had done. It was the encouragement and emotional support from Diana's parents and older sister that helped her persevere.

Although all participants faced significant Mandarin challenges, the school did not provide them with any special assistance in learning Mandarin. They were treated the same as other Han students or minority students whose Mandarin proficiency was native-like. As a result, they had to rely on themselves to overcome the language barriers.

Moreover, the school policy and regulations did not allow students to use cell phones in their daily life at school. Participants who had cell phones had to hand over their phones to the school for safekeeping. Schools only allowed students to use their cell phones for one day or half a day on weekends, and participants usually used their phones to contact their family and friends rather than for educational pursuits. Additionally, although schools had computer labs, students did not have regular access to the labs, and they did not have their own laptops. As a result, students had no regular access to computers or other digital technologies. Therefore, they could only use traditional methods to catch up on their Mandarin study:

> The best learning resource I could find at the time was the Xinhua Dictionary, one of the most authoritative and comprehensive Chinese language dictionaries in China. In seventh grade, I hand-copied the entire Xinhua Dictionary word for word. (First interview with Diana, June 9, 2023)

Participants just observed how others used Mandarin in the Mandarin-speaking environment, but they rarely communicated with their Han classmates in Mandarin to improve themselves:

> Those local Han students played together, while we rural Uyghur students played together. (First interview with Lucy, May 22, 2023)

Despite facing significant language challenges, the participants overcame difficulties through strenuous and extraordinary efforts:

> Basically, apart from eating, sleeping, doing laundry, taking showers, etc., I was in a constant state of studying. Even on weekends, I was studying all the time ... I know I am definitely not inferior. It is just a matter of time. (First interview with Lucy, May 22, 2023)

All four Uyghur participants in this study spent one to two years overcoming language barriers and reached native-level proficiency in Mandarin before attending university. They expressed that despite their great efforts, the most crucial factor in this process was the native Mandarin environment.

## 4.2 English learning at university in Beijing

### 4.2.1 Digital technologies: Bridging the English proficiency gap for ethnic minority students

After participants entered university, although their Mandarin proficiency was native-like, there was still a significant gap in their English proficiency compared to Han students. Table S3 (see supplementary material) outlines the comparison of English learning experiences between Uyghur and Han university students.

As a result of these differences, when participants started their first year of study in English major at university, they felt at a loss and encountered significant challenges with entirely English-medium instruction. They could barely understand professors' instructions and could hardly communicate in English:

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> From the beginning of freshman year, all major courses were taught in English, but I could neither understand nor speak. It is torture every day. (First interview with Jane, May 24, 2023)

However, unlike the situation in secondary schools, fortunately all participants had easy access to digital technologies at university, and therefore they could extensively and frequently use digital technologies to help them learn English.

For example, in an oral English course taught by a foreign instructor, assignments were sent to the class group on Enterprise WeChat either as audio or in English text form. Ethnic minority students who were new to university sometimes struggled to understand the audio, so they used the "convert to text" feature in Enterprise WeChat to transcribe the foreign teacher's audio into English text. If the text was still unclear, they consulted online English-Chinese dictionaries or online English-English dictionaries to aid their understanding. Moreover, before sending responses to the foreign instructor's comments, they wrote their replies in English and used the Youdao Online Dictionary's grammar correction function to check and correct errors.

Digital technologies help ethnic minority students overcome their weaknesses in English listening and speaking, gradually transforming them from being afraid to speak English in class to confidently expressing themselves:

> Initially, I lacked confidence and was afraid to speak English. Digital technologies helped me a lot in this regard. For example, Youdao Online Dictionary has an essay correction function. When preparing for English presentations in class, I typed out my script and put it there to check for grammatical errors. This increased my confidence in my English presentations. Gradually, I gained the courage to speak up in class, discuss topics with my classmates in English, and ask the teachers questions. (Second interview with Betty, December 27, 2023)

Based on classroom observations and conversations with students, almost no Han students write scripts and check for grammatical errors when preparing for English presentations because they consider it unnecessary, even though they make grammatical mistakes as well. This forms a stark contrast with ethnic minority students.

Not only did these ethnic minority students use digital technologies to assist with their learning after class, but they also actively employed these tools during class sessions. Based on my classroom observations in the courses I taught, participants used their smartphones to take pictures of PowerPoint slides they did not understand during class. From my daily conversations with participants, I learned that they used online dictionaries and internet resources after class to comprehend the content of the slides they captured:

> Taking pictures of slides that I didn't understand was very important to me. After class, I would use online English-Chinese dictionaries (such as Youdao, Baidu, Jinshanciba, etc.) to translate words or sentences I didn't recognize or comprehend into Chinese. I also consulted online English-English dictionaries for more precise definitions and contextual usage of the words and phrases, gradually grasping and memorizing them. It was through this method that I gradually caught up with my classmates' level. (Daily conversation with participants)

In the third-year writing class that I teach, I have students read excerpts from academic papers published in SSCI journals, which is challenging for them. During this process, the ethnic minority students are more proactive in using digital technologies to help them with reading comprehension. I observed that they used their laptops during class to copy and paste complex sentences or paragraphs they did not understand into Youdao Online Translate. This allowed them to translate the text into Chinese first, enhancing their understanding:

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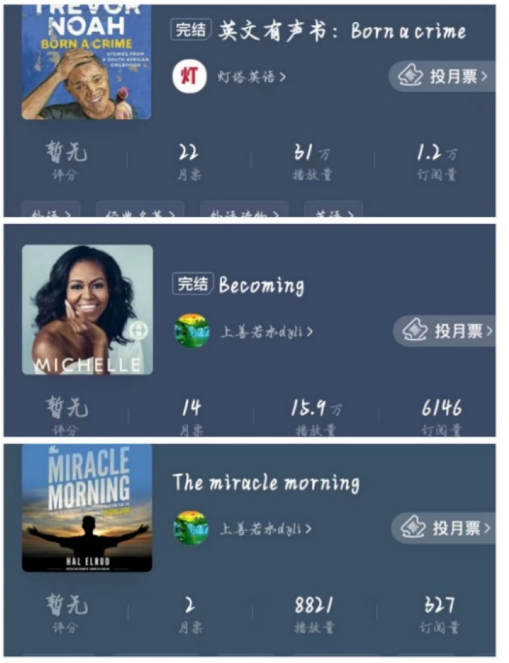


**Figure 1.** Sample of English audiobooks listened to by Lucy.

> This way, I can first understand the content in Chinese and then revisit the English parts I don't understand. It makes comprehension easier, and I can grasp the key points more quickly to keep up with the pace of the class. (Second interview with Diana, September 6, 2024)

Based on interview data, participants used various digital resources to enhance their English learning, as outlined in Table S2 (see supplementary material). More importantly, some participants not only used digital technologies to improve their English learning but also internalized this usage of digital technologies for language learning into their daily lives, such as playing English audiobooks while performing tasks like cleaning in their dorms. This practice is very rare among Han students, based on the author's interviews with Uyghur participants, her observations of Uyghur and Han students' discussions during class break times, and her daily conversations with Uyghur participants and Han students from the class:

> When I brush my teeth in the morning or do housework in the dorm, I always love to play some English audiobooks or podcasts as background audio … I enjoy listening to them while doing laundry … (Second interview with Lucy, December 23, 2023)

Figure 1 is a screenshot of some English audiobooks that Lucy has listened to, sent via WeChat conversation.

#### *4.2.2 Digital empowerment and identity negotiation at university*

Due to the significant gap in English proficiency, the ethnic participants felt they did not belong in this department during their freshman year, and two out of the four Uyghur students, Jane and

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Diana, considered changing their English education major. They formally expressed their serious intention to transfer to other majors to the department chair and the vice dean of the college:

> During my freshman year, I didn't feel like I belonged to the College of Foreign Languages. There was a small shop near the college that sold materials related to English learning. Once, as I was passing by, the shopkeeper invited me to come in and take a look. I instinctively blurted out, "I'm NOT a student of the College of Foreign Languages." (Second interview with Jane, December 24, 2023)

Despite the difficult situation, Jane and Diana were comforted and encouraged by the department chair and the vice dean to remain in the major for a period of time. Their English learning gradually underwent changes. Jane particularly enjoyed the instructors' use of PowerPoint and related videos in class, which greatly stimulated her interest in learning English. After class, she learned to use various digital resources to assist and extend her English studies. For example, after watching TED video clips shown by the professor in class, she downloaded the TED app after class. She watched numerous video lectures multiple times and, using the corresponding transcripts, studied each sentence meticulously and practiced reading aloud repeatedly. Moreover, she further explored certain topics in more depth (such as background and culture), searching for related resources online and engaging in extended learning.

Similar positive changes also occurred in Diana. In her freshman year, the department held an English dubbing competition that required all first-year students to participate. Diana was unsure how to prepare for the competition. Her Han classmates introduced her to the English Dubbing App, explaining its functions, advantages, and specific usage steps. She downloaded it out of curiosity and was attracted by the app's feedback and scoring features. She found a two-and-a-half-minute video clip from *Frozen* and practiced repeatedly for a long time. Eventually, she ranked among the top in the competition. When discussing why she was able to win even though Han students could also use this app and other digital technologies, Diana stated,

> We have the same access to digital technologies as our Han classmates, but we use them to assist our learning much more frequently and diligently. For instance, when I used the English Dubbing App to prepare for my dubbing, I practiced more than one hundred times before I recorded the submitted file. However, most Han classmates did not use the app or other digital resources. They just recorded once and submitted. (Second interview with Diana, September 6, 2024)

With the gradual improvement of their English proficiency, Jane and Diana abandoned the idea of changing their major; simultaneously, their identities within the department and class underwent a transformation. In their freshman year, Han students paid little attention to them; however, by their sophomore year, Han students began seeking Diana's advice on improving their oral English. For group assignments and activities assigned by professors, some Han students actively proposed joining Diana's group and nominated her as the group leader or spokesperson. Similarly, Jane expressed that in her sophomore year, she began to develop a strong sense of belonging to the department. Regarding this transformation, they emphasized that digital technologies played a crucial role. Diana elaborated on this point:

> Without digital technologies, through my own unremitting efforts, I might have eventually reached an average level in the class. However, with the assistance of digital technologies, coupled with my own dedication and effort, my performance now ranks among the top in the grade. I believe digital technologies accounted for about 70% of this progress. (Second interview with Diana, September 6, 2024)

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With the empowerment of digital technologies, Uyghur students gained more confidence to communicate and interact with Han students inside and outside the classroom and in their daily lives. Based on my observations in class and on campus, participants frequently interacted with Han students. They discussed together in class and often socialized with each other after class.

The boundary between ethnic groups was becoming increasingly blurred and diminishing. For example, Betty often went out to eat with her Han friends, and sometimes they went to non-halal restaurants together. Her Han friends were very respectful and considerate: they never ordered dishes with pork in them. During long holidays, a Han friend invited Betty to stay with her family for a week or even longer. Betty elaborated as follows:

> Although they usually eat pork almost every day, when I was at their home, her mother specifically bought beef and lamb to cook for us, and they did not eat pork either. . . . My Han friends jokingly said, "We have been 'halalized'." (First interview with Betty, May 19, 2023)

#### *4.2.3 Fostering learning and belonging: The Ethnic Minority Studio's digital initiatives*

Some participants in this study actively engaged in activities of the university's Ethnic Minority Studio, which is a student organization for ethnic minorities. In this study, Diana is the chair of the Ethnic Minority Studio, and Betty is a member. They used digital technologies and their expertise to organize and carry out activities for ethnic minority students throughout the university.

For example, College English Test-4 (CET-4) is a standardized English language test in China, designed to evaluate the English proficiency of undergraduate students at Chinese universities. At the university in this study, CET-4 was not very challenging for Han students, and thus they often prepared on their own and did not organize group preparation for that. However, CET-4 was very challenging for ethnic minority students, and therefore Betty used mini-programs on WeChat to organize English learning activities specifically for ethnic minority students.

Ethnic minority students participating in this activity included Uyghur, Kazakh, Kyrgyz, and Tibetan students. They used mini-programs on WeChat to check in. If they memorized a certain number of English words, engaged in English reading, or completed other forms of English learning that day, they could take screenshots and post them on the mini-program, as shown in Figure 2. They could also write and share their insights about English learning on the platform, where members could give a like and comment on each other's posts. The mini-program collected all the data and conducted analysis, with the top three participants receiving awards:

> This activity not only promoted the English learning of ethnic minority participants, but also gave us a greater sense of belonging to the university environment. I think it is very meaningful. (First interview with Betty, May 19, 2023)

#### *4.2.4 Navigating academia: Digital technologies and ethnic minority identity in Diana's success story*

Diana is ambitious and keen to showcase her abilities. After digital technologies empowered her to rank among the top in the English dubbing competition, she gained more confidence and began to challenge herself in English speech contests. She started with grade-level competitions and gradually progressed to university-level, city-level, and even national-level English speech contests.

Throughout this process, digital technologies played a very important role. For example, in the national English speech contest themed "Telling Chinese Stories in English," Diana chose the topic of the Chinese government's poverty alleviation policies in Xinjiang. During her preparation, she

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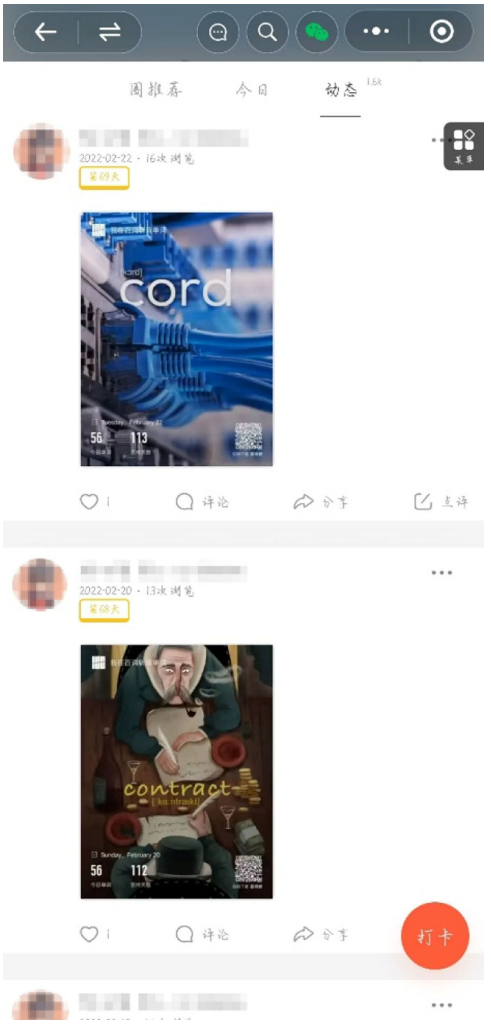


**Figure 2.** Screenshot of an ethnic minority student's vocabulary memorization on a day, sent via WeChat conversation.

first searched online for relevant government policy documents and studied them thoroughly. Since the topic involved many policy terms, writing it in English was quite challenging. Therefore, Diana chose to write the initial draft of her speech in Chinese, then used multiple online translation platforms to translate it into English, followed by repeatedly reading, checking, comparing, and revising it. After finalizing the draft, she repeatedly polished her PowerPoint presentation and added background music that matched the content to enhance the atmosphere. She ultimately achieved a top-three ranking in the North China regional competition.

Diana believed that digital technologies provided her with significant support, enabling her to achieve such outstanding results. Facing a high-level national English speech competition, Diana acknowledged that many other contestants (almost all Han university students) had superior English language abilities. However, she managed to bridge the gap and surpass her competitors through more diligent and effective use of digital technologies:

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> Many contestants were more capable than me, but with the empowerment of digital technologies, I could achieve a higher level than them. (Second interview with Diana, September 6, 2024)

Based on her outstanding achievements, Diana set a precedent as the first ethnic minority student in the college to be granted a university first-class scholarship. She also became the first ethnic minority student in the history of the college to be directly admitted to a master's program, due to her high academic performance, ranking in the top 5% of the department.

In light of her achievements, Diana once attended a university event as an outstanding student representative to receive an award. She recounted,

> As I sat down, a student volunteer approached me and said, "I'm sorry, but did you come to the wrong place? This is the seating area for outstanding student representatives." (First interview with Diana, June 9, 2023)

Subconsciously, people assumed that outstanding student representatives would be Han students rather than ethnic minority students.

#### *4.2.5 Digital facilitation and upward social mobility: Navigating identities in society*

When ethnic minority students step out of the campus and into society, they often need to exert more effort to prove themselves, and digital technologies can assist them in negotiating identities within society. For instance, university students majoring in English education commonly tutor primary and secondary school students off campus as a part-time job. The College of Foreign Languages in this university maintains relevant WeChat groups for part-time jobs, which frequently post job opportunities in areas near the university. Almost all students majoring in English education are members of these WeChat groups. Interested students add parents on WeChat using the contact information from the job postings, then further communicate and apply for the positions.

Initially, Diana found it challenging to apply for part-time jobs as an English tutor for off-campus Han students because many parents would directly screen out applicants upon seeing a minority name, without giving them a chance for a trial lesson. Faced with this situation, Diana sent her resume to the parents via WeChat, detailing her academic ranking, participation in various competitions, activities, and awards. After reviewing her resume, almost no parents declined to offer her a trial lesson:

> Without WeChat, it would have been very difficult for me to secure opportunities as a tutor. I couldn't possibly call the parents and tell them over the phone how I could be competent for the job. Even if I did make such phone calls, it would be hard for them to believe me. (Second interview with Diana, September 6, 2024)

The journey from part-time jobs to envisioning long-term careers in Beijing showcases the evolving professional goals of individuals like Diana and Lucy. Diana expressed that after completing her master's degree, she would continue to pursue a doctoral degree and then seek a teaching and research position at a university in Beijing:

> I like living in big cities, and I love doing hard work. I enjoy a life filled with striving and challenges. (Second interview with Diana, September 6, 2024)

Similarly, Lucy, another participant in this study, returned to Xinjiang after graduation and worked as a high school English teacher for six months. She then resolutely resigned and moved

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back to Beijing. Now she works at a translation company in Beijing, primarily engaging in manual editing post-machine translation. She really enjoys her current job and is very optimistic about her future prospects.

## 5. Discussion

This study explored how digital technologies empowered Uyghur minority students to learn languages and negotiate their identities in the host community during their intranational migration.

Without access to digital technologies, Uyghur minority students experienced significant identity challenges and even identity crises due to the language barrier when attending Mandarin boarding secondary schools (*Neichu ban*). The abrupt transition from Uyghur-medium instruction in primary school to Mandarin-only instruction in *Neichu ban* left them struggling to understand lessons, complete assignments, and communicate effectively. This linguistic disadvantage led to a sharp decline in academic performance and caused significant emotional distress, feelings of inferiority compared to their Han classmates, and isolation from Han students. Without the support of digital tools, it took the participants several years to overcome the identity crisis, catch up academically, and assert themselves as capable learners.

English was viewed as valuable linguistic and symbolic capital (Bourdieu, 1991), serving as a means to achieve academic success (Cui & De Costa, 2022, 2024; Guo & Gu, 2016). In this study, echoing previous research on information technology and identities of international migrant learners (e.g. Chen, 2013; Darvin & Norton, 2014a; Lam, 2000, 2004, 2009), digital technologies played a crucial role in empowering the Uyghur students' language learning and identity development at university, contrasting sharply with their experiences in *Neichu ban*. Compared with their Han classmates at university, the Uyghur students valued digital technologies much more and utilized them for language learning more diligently and intensively. Through their easy access to and frequent, extensive, and diverse use of digital technologies, the Uyghur minority students were enabled to bridge the English proficiency gap between themselves and their Han classmates and develop their identities as legitimate speakers of English (Norton, 2013). Some ethnic minority students even integrated digital technologies into their daily lives, like Lucy who regularly engaged with English audiobooks and podcasts during household tasks – a practice rare among her Han classmates. Consequently, the ethnic minority students not only improved their English proficiency but also developed identities as capable and natural English users.

Ethnic minority students may encounter marginalization within the mainstream Chinese education system (Han *et al.*, 2016). In this study, Uyghur students also experienced marginalization, like Jane and Diana who felt that they did not belong to their department and considered changing majors during their freshman year. Nevertheless, by utilizing digital resources such as TED videos, English dubbing apps, and online dictionaries, they significantly improved their English proficiency. This progress transformed their identities: by sophomore year, Diana found herself sought after by her Han classmates for advice on oral English and became their preferred collaborator and group leader, and Jane developed a strong sense of belonging to the department. Both of them attributed a substantial portion of their academic improvement and the development of positive and integrated identities to the use of digital technologies. These newly established identities extended beyond academic studies, with participants like Betty forming closer relationships with Han students in social settings, leading to greater integration into the Han-dominant environment.

Moreover, by utilizing digital technologies to coordinate English learning activities, Uyghur students extended empowerment to other ethnic minority students and cultivated a supportive environment for the entire minority student community at the university. The initiatives led by Betty to prepare for the CET-4 enhanced English proficiency and fostered a sense of belonging

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among ethnic minority students across the whole university, highlighting the transformative potential of digital tools in language learning and identity negotiation. This study corroborates the findings of Cui and De Costa (2022), in which an ethnic minority participant utilized her bilingual advantage to empower her fellow Uyghurs by teaching them Chinese. However, the present research extends further by demonstrating how digital platforms (e.g. WeChat mini-programs) facilitated university-wide language learning activities and fostered a sense of community among diverse ethnic minority groups.

Corroborating the findings of previous studies (Cui, 2022; Cui & De Costa, 2022; Guo & Gu, 2018) on Uyghur students' language learning and identity negotiation, this study further reveals how ethnic minority students can become exceptional individuals among all students, including Han students. Diana's journey exemplifies this transformation through digital empowerment. She extensively utilized online resources, translation platforms, presentation software, and background music to prepare for English speech contests, competing successfully against Han students with superior English skills. Her effective use of digital technologies not only enhanced her language proficiency but also played a crucial role in reconstructing her identity. By achieving unprecedented academic success, including winning a first-class scholarship and direct admission to a master's program, Diana challenged prevailing stereotypes about ethnic minority students' capabilities, fostering a more inclusive academic community and redefining minority students' positions in Han-dominant educational environments.

Moreover, when Uyghur students stepped off campus, they fought against prejudice regarding ethnic minority identities in society and negotiated their identities as legitimized and qualified English tutors for Han students with the assistance of digital platforms like WeChat, a phenomenon not found in prior studies. More importantly, previous studies (Cui & De Costa, 2024; Guo & Gu, 2018) indicated that when seeking employment after graduation, Uyghur minority students faced discrimination, societal constraints, and marginalization in metropolises in eastern China. As a result, they had to return to XUAR, even though they aspired to work and reside in cosmopolitan cities there. This study presents unprecedented findings that through accumulated digital empowerment, Uyghur minority students (e.g. Diana and Lucy) could break through this barrier and find a way to achieve upward social mobility by seeking decent professions in first-tier cities like Beijing.

## 6. Conclusion and implications

The limitation of this study is that although I observed and interviewed Uyghur students to gain an in-depth understanding of the in-class and after-class interactions between Uyghur and Han students, I did not interview Han students for their perspectives on this matter.

Despite the limitation of the study, its findings carry important implications for utilizing digital technologies to support intranational migrant ethnic minority students' language learning and identity development. While boarding secondary schools restrict digital technology use to promote study focus, it is suggested that supervised access periods be offered for boarders. This would enable ethnic minority students to use digital resources to bridge linguistic gaps, succeed academically, and foster positive identities. It is advised that boarding secondary schools allocate funding and teachers for additional language assistance, such as extra Mandarin training courses, to help ethnic minority students better adapt to secondary school life. Furthermore, it is crucial for educators and policymakers to recognize the potential of minority students to excel academically, become leaders in their communities, and contribute to society. To combat discrimination and stereotypes, efforts could focus on promoting ethnic minority students' success stories, highlighting their academic achievements, and supporting minority students' organizations. By implementing these measures, China can create a more inclusive and equitable educational environment that enables all students, regardless of their ethnic background, to thrive and achieve their full potential.

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To conclude, this research contributes to the understanding of identity and transnationalism (Duff, 2015) by incorporating intranational migration into the wider academic discourse. It fills the gap on how intranational ethnic minority migrant students utilize digital technologies to learn languages and negotiate their identities in the host community. To further enhance our knowledge of the intricate interplay among digital technologies usage, multilingual growth, internal migration, and identity development, additional research involving ethnic minority students at various institutions in different geographical contexts is necessary.

**Supplementary material.** To view supplementary material for this article, please visit https://doi.org/10.1017/S0958344024000296

**Data availability statement.** Data available within the article or its supplementary materials.

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## About the author

**Xiaoya Ye** is a lecturer in English education at the College of Foreign Languages, Capital Normal University, China. Her research interests include English teachers' identities, language teaching and learning, and teachers' professional development. Her publications include articles in *Journal of Language, Identity & Education* and *Cambridge Journal of China Studies*.