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How UK PhD Programs Have Prepared International Students for Work: Perspectives of Chinese Doctoral Students in the Social Sciences

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ABSTRACT

International doctoral students are an indispensable part of the increasingly globalized Higher Education Institutions and play a vital role in continually refreshing the host country's research base and fostering cross-national research collaborations. Despite their contributions, most international student employability experiences have been centered on undergraduate and master's students, and fewer studies have been undertaken to explore the employability experiences of those who study for a doctoral degree. The research team conducted two focus groups with Chinese international doctoral students studying social sciences at two British universities. The focus groups examined the students' perceptions of their employability development within the PhD programs and identified areas for enhancing international doctoral student employability. Results highlight an urgent need for UK universities to develop effective channels to support Chinese doctoral student employability, focusing on supervisors as career mentors, developing graduate skills through fieldwork and teaching opportunities, and co-publications.

Keywords: career preparation; Chinese doctoral students; international doctoral student employability; academic career

INTRODUCTION

International doctoral students are an indispensable part of the increasingly globalized Higher Education Institutions (HEIs). These students play a vital role in continually refreshing the host country's research base and fostering cross-national research collaborations; the presence of these students is particularly essential for UK universities that understand the benefits of the internationalization agenda (Humfrey, 2011). To continuously recruit talented individuals to participate in doctoral programs, educational institutions need to offer robust academic programs as well as student support, which can be achieved by having a solid understanding of international doctoral student needs. Within the realm of student support, career preparation and employment opportunities are some of the key concerns for international doctoral students (Li et al., 2021; Young et al., 2020).

In this paper, the authors examine the results of two focus groups (n=13) conducted with Chinese international doctoral students, to learn how their PhD program prepared them in terms of career preparation. The specific research questions guiding this study were: RQ1: What are Chinese international doctoral students' experiences towards employability?; and RQ2: What aspects of a PhD program do Chinese international students value the most in regards to career preparation? The major themes described by the participants are discussed and recommendations are provided based on the themes and existing literature.

LITERATURE REVIEW

International doctoral student mobility

Internationalization has been on the rise in higher education globally and is especially evident when analyzing the origins of students. Student mobility has increased significantly from 1.3 million in 1990 to six million in 2020 over the last decade; if this trajectory continues, there may be over 10 million by 2030 (Liu, 2021). As one of the top study abroad destinations in the world, UK universities attract a large number of international students, among whom are doctoral students. Statistics indicate that international doctoral students constitute approximately 41% of all doctoral students in the UK (HESA, 2021), making significant diplomatic, cultural, and intellectual/academic contributions to the research agendas of the host universities (Humfrey, 2011).

Despite their contributions, research suggests that there seems to be a concealed extra layer of complexity stemming from sociocultural dimensions in doctoral programs that present major challenges for international doctoral students (Lazarte Elliot et al., 2016). Nevertheless, much of the current research has been largely centered on undergraduate and master's students (Quan et al., 2016; Brown & Holloway, 2008, Wu & Hammond; Zhao et al., 2022), and relatively fewer studies have been undertaken to explore the experience of doctoral students (Grant, 2010; Hutchinson et al, 2017; Kenway & Bullen 2003, Kidman et al, 2017; Manathunga, 2014) with even fewer studies focusing on the

employability of doctoral students (Beasy et al., 2022; Davis et al., 2019; Zhao & Kung, 2021).

Choosing to study abroad is a weighty decision for students, but studies indicate common motivating factors include career advancement, potential immigration opportunities, accumulation of scientific capital, high-quality research training, and cultural experiences in another country (Li, Shen, & Xie, 2021). As globalization evolves, many employers expect students to have international experiences and intercultural communication skills to meet the demands of the market (Qun, 2018).

Within the cohort of international doctoral students in the UK, Chinese students make up the largest group (HESA, 2021). Part of the reason for this is the increasing need to gain a competitive advantage over their peers in their job market when they return home (Yizhong et al., 2017); new graduates need to compete against domestic graduates as well as all the other graduates returning home with an international degree. Therefore, university rank, the reputation of the research centers, and potential supervisors' research profiles have a significant impact on Chinese doctoral students' decisions to study abroad (Qi & Li, 2021). The students strive to stand out in their field and obtain the best background and training in order to have the highest chances of being offered a job. Furthermore, Chinese international doctoral students are more susceptible to academic, financial, and psychological pressure during their time abroad (Qi & Li, 2021) as they often face high expectations to succeed from their family (Yang & Bai, 2020). Nevertheless, research suggests that the needs or support of this group have also been under-researched, particularly regarding career support (Edwards & Ye, 2018).

International doctoral student employability

The concept of employability is central to the learning outcomes of students in higher education, particularly for international students who pay high tuition fees. While employability and employment sometimes have differing definitions depending on context, employment is defined as having paid work, while the overall meaning of employability is "about work and fundamentally the ability to be employed" or gain meaningful employment (Finn, 2000, p.387; McQuaid & Lindsay, 2005). Some definitions of employability only consider the individual's skills and characteristics, while others argue that employability should include individual skills and labor market conditions (McQuaid & Lindsay, 2005). For example, Yorke and Knight (2006) define employability as a set of achievements that include skills, understandings, and personal attributes, which make individuals more likely to gain employment and be successful in their chosen occupations. This definition highlights the importance of personal attributes alongside skills and knowledge and also emphasizes the idea of longer-term success and satisfaction in an employment role as part of employability.

There is little doubt that employability has become one of the key drivers for studying abroad in the minds of international students, particularly when the experience is understood not merely in terms of skills and knowledge acquisition

but also in terms of personal development (Gu & Schweisfurth, 2015; Singh et al., 2021; Zhao & Cox, 2022). Research indicates that several obstacles exist for international students while studying in their host countries, leading to a negative effect on their employability (Gribble et al., 2017; Jackson, 2017; Huang & Turner, 2018; Goodwin & Mbah, 2019; Zhao & Xue, 2023).

International doctoral students are often faced with additional challenges of adjusting to a new academic culture and work environment (Pudelko & Tenzer, 2019; Ugwu & Adamuti-Trache, 2017). Research suggests that international doctoral students are more susceptible to financial hardship (Cornwall et al., 2019), psychosocial stress (Barry et al., 2018; Schmidt & Hansson, 2018), and academic isolation (Erichsen & Bolliger, 2011). These are all common factors that students face when completing an academic program. However, each challenge hinders the student, and the more challenges a student faces, the more likely their studies will suffer.

Furthermore, the provision of career support tends to be largely UK-centric; there is a lack of focus on the employability needs of international students (Huang & Turner, 2018; Goodwin & Mbah, 2019). Even less research has been conducted on the employability of international doctoral students, who are an important but often overlooked group of students (Edwards & Ye, 2018; Mason and Hickman, 2017). More studies are needed to provide a holistic view of ways to enhance the employability of international doctoral students (Duke & Denicolo, 2017).

A number of studies have called for investigations into how doctoral programs can be tailored for international students to meet the needs of global labor markets (Davis et al., 2019; Groen, 2016). For example, earlier research suggests that mentoring and coaching opportunities are effective strategies to support international doctoral students in gaining the skills and knowledge needed for employability both inside and outside academia (Mulle et al., 2010; Welton et al., 2014). Furthermore, international fieldwork is also identified as an essential opportunity for student soft skills development (Davis et al., 2019). International doctoral students may also benefit from international conferences and networking events (Nghia et al., 2020). However, there remains a gap in the literature regarding how international doctoral students perceive and appropriate employability opportunities within their doctoral programs. Understanding the perceptions and employment experiences of these students is vital for ensuring that PhD programs are designed more effectively to prepare them for a diverse range of careers (Beasy et al., 2022; Manathunga et al., 2009)

METHOD

The study adopts an interpretive paradigm by conducting semi-structured focus groups to gain a thorough understanding of the participants' experiences, attitudes, and perceptions; the focus group method enables both researchers and participants to exchange viewpoints and confirm insights to achieve a thoughtful discussion (Dilshad & Latif, 2013). This method creates a more natural environment, but more importantly, it allows for the collection of a rich and

detailed data set and provides an opportunity for marginalized segments of society to share their feelings and reasons for a particular pattern of thinking (Dilshad & Latif, 2013). In the case of this study, very specific groups of students were brought together to be interviewed.

In this study, researchers conducted two separate focus group studies to examine the participants' employability experiences while attending their university. The focus groups were held with doctoral students at different stages of their studies from two British universities of similar size and ranking with one focus group at each university. The study was approved by the university's ethics committee (ID: 044508). Informed consent was collected prior to interviews. All data were anonymized. Participants were reminded about the right to withdraw freely from the project.

Participants were recruited by emailing international doctoral students on a departmental mailing list and snowball sampling thereafter. Participation was entirely voluntary, and the researchers did not have any influence on the participants' grades or doctoral projects. In the first focus group, $n=6$ (male=4, female=2), and the second focus group was $n=7$ (male=3, female=4). After expressing interest in participating, the students were reminded that participation in the study would not result in any additional benefits or special treatment in their course, and participants were not coerced to join the study or penalized for leaving the study. The participants were not provided with any compensation but were given the opportunity to contact the researchers for the final report.

All names were anonymized in the final transcripts, and the digital data were encrypted while in use. The two focus groups were conducted in English by the researchers in conference rooms and audio recorded for later transcription. After the focus groups were completed, the interviews were transcribed and then manually coded following Braun and Clarke's (2006) six steps thematic analysis. The researchers looked at the transcripts together and coded several pages together to establish reliability and consistency. The transcripts were then coded by each researcher, shared and compared, and the codes were combined afterwards. The participants were then offered a chance to view the anonymized draft of the analysis and invited to submit feedback. Once the analysis was complete, all original data were erased.

RESULTS

To answer the research questions regarding the experiences of Chinese international doctoral students towards employability and to identify the most valued aspects of doctoral programs for their career preparation, we conducted two focus groups. The results section of our study presents the effective channels for enhancing employability skills, as identified by Chinese doctoral students. Three themes were identified: supervisors serving as career mentors, the development of graduate skills through fieldwork and teaching opportunities, and the enhancement of student employability through co-publications.

Overall, our data suggest that Chinese doctoral students highly appreciate their study experiences in the UK and believe their doctoral and postdoctoral

experiences will provide them with a competitive edge over their domestic counterparts if they need to return home for employment. As one of the participants (male, final year, Architecture and Civil Engineering) puts it:

The experience in the UK makes us more competitive...in China, especially if we want to pursue an academic career...if you have another two years postdoc experience it will be much easier to get good positions in universities in China.

Supervisors as career mentors

Based on our data, there is great potential for embedding employability discussions within the supervisory meetings between students and advisors. Advisors are well suited to teach necessary knowledge, provide resources and opportunities for students to learn new skills, and even give advice regarding current labor market conditions to make their students more employable. Participants in the focus group value the career experiences provided by their supervisors, suggesting that supervisors can be potential career mentors who provide guidance for doctoral students by sharing their own experiences and professional networks with their students. Many supervisors are PhD graduates (often early career) and have just recently gone through the academic recruitment process themselves, which makes their career experience especially valuable and relevant to students. For instance, one participant (female, first-year, Information Science) described her experience:

I think my supervisors are very friendly and kind, last time when we had a meeting about the research things, we talked about my future plan after I finish my PhD and they are really happy to help me with applications or CV.

The data also suggest that students who attend academic conferences, especially where supervisors are highly involved, develop more opportunities for effective networking. Students can further develop these contacts and networks and expand their social media communities, where they can often find career opportunities they would not otherwise have been aware of. One participant (male, first-year, Data Science) mentioned that, "I told my supervisor that I want to work in the industry after graduation so he gives me some chances to work on an internship in that area," while another (male, final year, Information Science) emphasized the importance of networking, when he said, "There's a misconception that's foreign countries don't care that much about personal connections...Here people just call it networking or professional connections." Another participant (male, first-year, Information Science) similarly described his experience as:

My supervisor encouraged me to present at conferences and doctorate consortiums where she was involved as chairs. I felt very supported by her and also got to know many professors of her network. We are all

Twitter friends now. They post many career opportunities through Twitter.

Given the essential role of supervisors, it is vital to raise students' awareness about how to manage their relationships with supervisors, such as how to ask for career support when they need it. Supervisors have a wealth of knowledge when it comes to career development and employment, which students can leverage to their advantage. According to our data, Chinese doctoral students are more likely to fear their supervisors than to see them as supportive mentors, particularly when they feel their PhD progress is unsatisfactory. For instance, one participant (male, final-year, Architecture and Civil Engineering) said, "[I] tried to avoid meeting my supervisor before I have some work done...every time I pass my supervisor's office, if I saw the door is closed I feel really happy." Similarly, another male final-year student from the Department of Electrical Engineering said, 'Agree, agree, agree, I couldn't agree more. The supervisor always seems to be very scary'. The hierarchical nature of educational systems in many countries may have an impact on the way students interact with their supervisors and their support-seeking behavior.

Our data show that students strive to maintain a positive impression of themselves in front of their supervisors by demonstrating independent problem-solving skills and diligence rather than revealing their vulnerability or burdening supervisors with personal issues or academic struggles. Students may perceive seeking help from their supervisor as a reflection of their weakness and dependence, which could negatively impact their perceived capabilities and independence. To create a positive impression on their supervisors, students may avoid actively seeking support, pretend to have everything under control, or even avoid seeing their supervisors altogether. However, such attitudes may cause unnecessary stress and anxiety when students are vulnerable, hindering their ability to receive timely support from supervisors or university services, which may damage their academic progress and mental health.

The strive for a positive impression, which often manifests as a fear towards supervisors, puts a strain on students' relationships with their supervisors because supervisors are unable to aid students who do not communicate their challenges with them. Many students suffer from poor mental health as they try to cope with the stress on their own without seeking any university support (Cardilini et al., 2021; Mackie & Bates, 2019). It could be argued that training workshops on relationship management and differences in academic cultures could be provided for Chinese doctoral students as part of their studies. This way, they could be more informed about the support and services that they are entitled to.

Developing graduate skills through fieldwork and teaching opportunities

Academic programs in the UK are often considered theory-driven and lack practical skills, particularly for research-based programs (Zhao & Kung, 2021). This has not gone unnoticed by students as our results suggest that students consider fieldwork and teaching opportunities a useful way of acquiring practical

skills not taught in the typical curriculum. According to our participants, PhD data collection or fieldwork can provide students with valuable employability skills, such as organizational skills, project management skills, teambuilding and communication skills, and practical experience, which are often seen as essential by employers (Fajaryati, Budiyo, & Wiranto, 2020). One female participant (second year, Information Science) explained, “I think whether you are in industrial or academia, people skills are quite important...as part of my PhD fieldwork, I have to build relationships with people from companies for data collection.” This demonstrates the student knows the value of practical skills (people skills, in this case) and was able to gain these skills when she was in the field collecting data and not from any lecture in the classroom.

Within the PhD program, there are also teaching opportunities, especially when a student is hired as a Teaching Assistant or Graduate Assistant. These opportunities can further help doctoral students develop useful employability soft skills (especially within academia) as well as enable them to reflect on how these skills could be valued in different contexts by different potential employers. As one participant (female, first-year, Information Science) put it, “I think a good thing about teaching is that it strengthens your communication skills...also helps us to gain a staff perspective on teaching,” while another (female, final year, Accounting and Finance) confirmed, “Having teaching opportunities not only helps us financially but also provides us opportunities to develop teaching skills...these skills are essential for academic jobs.” Similar to students with fieldwork experiences, students also recognized the importance of practical skills obtained from teaching and how the skills would benefit their future careers.

Enhancing student employability through co-publications

Finally, students expressed an interest in co-publishing articles with supervisors to improve their employability skills, particularly their academic skills. Our participants found that UK universities tend to focus on teaching students in-depth knowledge about their field of expertise through a research project and focus less on publications during the process. In contrast, Chinese universities place a high emphasis on the number of publications and set publication requirements for students to graduate (Cargill, Gao, Wang, & O'Connor, 2018); these publications are not necessarily related to the student’s projects or fields. One participant (male, final year, Architecture and Civil Engineering) summarized the differences:

The PhD studies in the UK focus on PhD projects only. That's our main focus for the entire four years. We might publish conference papers if we are lucky. Although this systematic process helps us to gain your knowledge in our field, we are often limited to one project. But in China...your PhD project itself is not really your focus. If you want to graduate, you need [publications]...if I go back to China without publications, it would be hard to find jobs.

There are pros and cons in both systems. For example, although our data suggest that participants appreciate that the UK supervision style provides a sound knowledge base for them, they believe that it can also work against them since they may have fewer publications when they graduate compared to other graduates in China. Similarly, while they believe that the Chinese supervision style may allow for multiple publications, it does not allow them to fully develop thorough expertise in a particular field. Recent policies from the Ministry of Education in China have emphasized the sustainability of research papers and criticized the short-term, quick-fire research projects approach (Mu, 2014). One participant (male, final year, Architecture and Civil Engineering) felt a bit conflicted as he described his situation:

I think Chinese supervisors will always encourage their students to do some more projects. But I got two [British] supervisors...they're just like, you can do everything you want, we are just here to give you some guidelines. I am in my final year, but I have no papers.

When asked what they would change if they could travel back in time to start over as new PhD students, most participants said they would like to publish more. This suggests that they recognize the significance of publications to their employability, especially if they return home.

One way to enhance PhD employability would be for research centers to place higher recognition on co-publications between supervisors and students. Our data suggest that doctoral students appreciate the opportunities to co-publish with supervisors, such as helping with supervisors' projects as Research Assistants or publishing conference proceedings. For example, a first-year participant in Management (male) described his concerns as:

I wish to have more publications on my CV. Currently, I have none. I know that my supervisors publish a lot...but I don't know how to express an interest to join. I am worried that if I ask them, they will just ask me to focus on my own PhD.

DISCUSSION

Chinese doctoral students are essential for the UK higher education system as they contribute to the knowledge base of the country and increase innovation, in addition to contributing to the economy and providing cultural and diplomatic benefits (Humfrey, 2011). The increasing demand for overseas doctoral degrees in the labor market of China highlights the significance of understanding the development needs of Chinese doctoral students. This comprehension is pivotal in the process of attracting, recruiting, and ultimately graduating more students who are seeking such degrees.

The research findings suggest that Chinese doctoral students hold a positive view of their study experiences in the UK and perceive that their doctoral and post-doctoral experiences provide them with an advantage over their counterparts in China if they choose to return home for employment. The study outcomes align

with research conducted by Zhao and Cox (2022), which examined Chinese international master's students who aspire to secure employment in China after obtaining a degree in the UK. The research findings also highlight how the role of supervisors is viewed as crucial in cultivating students' employability skills by acting as career mentors, offering guidance, and sharing their experiences and networks. Research has already pointed out the importance of career mentoring in enhancing international doctoral student employability (Mason & Hickman, 2019; Welton et al. 2014). Our results affirm Xu's (2022) finding, which highlights the role of supervisors as significant others in shaping the career perceptions and ambitions of doctoral students. It also aligns with the argument of Wilkins et al. (2021) that supervisors should assume a broader support role, addressing the developmental needs of students rather than solely focusing on the progress of their theses. Such support should be provided both within the doctoral program and beyond in order to equip doctoral students with the necessary skills, experiences, and networks to excel in their chosen career paths (Platow, 2012).

Specifically, our research shows that attending academic conferences, particularly those with highly involved supervisors, enhances networking opportunities, expands social media communities, and increases employment prospects. It is crucial for doctoral students to be aware of and effectively capitalize on the resources generated through networking events and institutional grants, as such awareness can significantly enhance their employability prospects (Jackson & Michelson, 2015). Our research also identifies an urgent need for supervisors to support doctoral students' employability through co-publications, offer research assistant opportunities, and encourage students to publish their work in conferences and journals, encompassing both their theses and collaboration projects. Publications before graduation can vastly place doctoral students in a favorable position compared to those without any publications. The idea of co-publications with supervisors as a means of enhancing the employability of doctoral students is further supported by other researchers (Wilkins et al. 2021; Lei & Hu, 2015). However, our research also points out that Chinese doctoral students need to acquire the relevant skills to manage their relationships with their supervisors and seek career support when required.

The hierarchical nature of educational systems in many countries is identified as a potential factor influencing students' interaction with their supervisors and their support-seeking behavior. Research suggests that fear appeals are often used as a strategy to motivate student behavioral engagement (i.e., participation) and thus increase exam performance, yet they are linked to student mental distress (Belcher et al., 2022). Our findings suggest that Chinese doctoral students often fear their supervisors, which may impede their ability to receive timely support from supervisors or university services, hampering their academic progress and mental well-being. These students often strive to maintain a positive image in front of their supervisors, which can strain their relationships since supervisors cannot provide assistance to students who fail to communicate their challenges. Thus, Chinese doctoral students need to be made aware of the resources and services available to them, and training workshops on relationship management and cultural differences in academic settings can be integrated into their studies.

The research also reveals that academic programs in the UK are commonly perceived as theory-driven and lacking in practical skills, particularly for research-based programs, which accords with the findings of Zhao and Kung (2021). Consistent with the literature (Davis et al., 2019), participants in this research consider fieldwork as an effective way of acquiring practical skills not typically included in the curriculum. Our findings further highlight that these opportunities provide students with important employability skills, such as organizational, project management, and communication skills, as well as practical experience, which are highly valued by employers from students' perspectives. Within the UK academic system, students can participate in teaching or seminar research chairing opportunities, which offer additional prospects for developing essential employability skills like time management, public speaking, and communication skills. These skills not only equip students for academic career pathways but also provide doctoral students with opportunities to pursue non-academic careers, as some individuals may opt to transition outside academia upon completing their studies (Neumann & Tan, 2011; Zhao & Kung, 2021).

Implications

The results of this research highlight an urgent need for UK universities to develop effective channels to support Chinese doctoral student employability in the UK, focusing on supervisors as career mentors, developing graduate skills through fieldwork and teaching opportunities, and enhancing student employability through co-publications. Results of this research suggest that UK universities place less emphasis on publications for doctoral students and more on knowledge development. This lack of publications may disadvantage international doctoral students when they seek employment outside the UK as universities outside the UK may place a higher emphasis on publications.

Nonetheless, the finding of the research will help higher education institutions to enhance the employability support of international doctoral students, including embedding employability discussion and opportunities through PhD training programs, particularly for students in social science majors. For example, universities could train supervisors as career mentors for doctoral students. Additionally, many universities have third space professional staff (such as career advisors, employability advisors, researcher development coaches, and mentors) that could be enlisted to help provide advice and support for international doctoral students in terms of practical career and job hunting advice, as these individuals can often provide a different perspective (Lazarte Elliot et al., 2016). Universities could also provide training for supervisors so that they can better signpost students to these valuable campus resources.

Despite this, our results suggest that international doctoral students often struggle with poor relationship management with their supervisors out of fear of academic judgment. This could demotivate them from discussing career-related issues with their supervisors. Universities can also offer training for both supervisors and international doctoral students on effective relationship

management to create a more positive supervision atmosphere where career discussion can be built in.

When it comes to developing skills and providing a teaching experience, supervisors can encourage doctoral students to serve as research or teaching assistants during their study program. While a paid assistantship position for every student may not be feasible, a comparable experience can be offered through other means, such as participating in an internship or leading a workshop series. The students can be encouraged to participate in the mentor's research or fieldwork to learn technical skills and gain valuable real-life experiences relating to research capabilities. To address teaching experiences, students can be encouraged to guest lecture or lead seminars to get a sense of what it is like to teach in class as well as improve their communication skills. These skills will be essential for students when they start seeking employment, especially for those who wish to pursue a career in academia.

Finally, universities can place a stronger emphasis on faculty co-publishing with their students and guiding them through the research process. For example, supervisors could encourage doctoral students to publish part of their PhD thesis through conference proceedings and academic journals. In addition, supervisors may be able to offer doctoral students the opportunity of helping out on their research projects, which are separate from their PhD studies, as long as they are able to balance their study and research assistant obligations. Working on additional research projects can provide more practical experience and knowledge, as well as more opportunities to publish; having more experiences and publications can only strengthen a student's application while searching for jobs.

Limitations and future studies

Qualitative research tends not to be generalizable, and the researchers acknowledge that certain limitations exist. The primary limitation is the sample, which was relatively small and limited to students from the social science disciplines from two universities. Therefore, caution should be taken when generalizing results to a wider UK context, since the results possibly provide a one-sided view. For instance, it is quite possible that the job market and employability requirements for STEM majors may be significantly different than those in social sciences. Nevertheless, the research findings add knowledge to the often underexplored, yet critical topic of international doctoral student employability in the UK. Expanding this study in the future to include more participants from additional disciplines (such as STEM) and other universities in the UK and even worldwide should provide an even more accurate and complete assessment of the needs of the international doctoral students.

Another consideration is that the interviews were conducted with international students and not actual graduates already working. A potential expansion for this study could be to interview the same participants after they have had some working experience to see how their views have changed. If the

results of this study are any indication, international doctoral students around the world are most likely facing similar struggles regarding finding employment after graduation, and this study could be expanded to examine other international student groups attending universities in different countries.

Finally, student supervisors may tend to be biased towards a career in academia and lacking in knowledge when providing career advice outside of academia. Examining the connections between career resource centers and faculty supervisors and career mentoring training could lead to an improved career advising network for international graduate students.

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