A Qualitative Investigation Into Chinese International Doctoral Students’ Navigation of a Disrupted Study Trajectory During COVID-19

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Abstract
This study delves into emic perceptions of Chinese international doctoral students’ navigation of a disrupted study trajectory during the 2019 coronavirus pandemic. Drawing on semi-structured interviews with students and the conceptual framework of bioecological systems theory and needs-response agency, the article reveals a nuanced picture of how activities, relations and roles nested in a PhD study trajectory are impacted by and respond to the crisis. Specifically, the pandemic has instigated a ripple effect upon PhD study that is embedded within a complex system of person—environment factors in the microsystem, mesosystem, exosystem and macrosystem. Confronting these changes and challenges, the students enact needs—response agency to cope with these impacts so as to restore stability. The study concludes with some practical implications for related stakeholders in the bioecological system to generate conditions and support for students to harness possibilities for growth amidst and beyond the health crisis.

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Introduction

The pernicious health crisis of coronavirus disease 2019 (COVID-19) has disrupted every facet of the world we live in on an unprecedented scale and with an appalling speed. Undoubtedly, the knock-on effects also take a heavy toll on higher education (HE), proving something of a watershed that necessitates a radical reshaping of how universities operate and how staff and students manage their work and study (Green et al., 2020). HE scholars have responded quickly to the global risk, engaging in a heated discussion about the status quo, ramifications and prospects of HE in a new conceptual and operational context where old norms may not be applicable. Common themes emerging from the body of literature cover many shared educational experiences. Some research adopted a macro lens, focusing on ideology, organization and governance that have long underpinned different approaches to HE in countries that are laid bare amidst the pandemic. A salient case is Australia, whose commercially driven HE system has been warned as precarious and fragile (Jayasuriya, 2021). In stark contrast to Australia is China, the general tone on whose HE response to the pandemic is much more positive (Yang, 2020).

At a meso level, emerging research highlights institutional practices to cope with the pandemic, centering around the massive and abrupt move to online teaching, learning, and research due to the social distancing norms across the globe. Singhal et al. (2020) investigated how a digital device-based active learning approach using virtual community classroom improves the quality of teaching and student performance during the pandemic in India. In England, a study on educators’ initial “pedagogic discomfort” to “pedagogic agility” in digital spaces or “disembodied spaces” confirmed pedagogical innovations brought about by alternative pedagogies and technologies to facilitate learning when practicum is missing (Kidd & Murray, 2020). Nevertheless, distance education is not ubiquitously applauded as a panacea to the pedagogic challenge facing universities today. Baggaley (2020) noted problems such as teachers’ lack of aptitude or interest and institutions’ inadequate support in delivering courses online.

From a micro perspective, a number of studies delved into students’ lived experiences of COVID-19. A widely analyzed topic is psychological stress faced by students, especially international students due to more impediments to maintaining their mental health and navigating COVID-19-related challenges such as finance and job loss, lack of accommodation, changes in visa conditions and transitions to online learning while being away from their family support networks (Chen et al., 2020; Ma & Miller, 2020). A particular stressor has been stigma in relation to mask-wearing experienced by Chinese overseas students (Ma & Zhan, 2020) and emerging forms of COVID-19 racism against students of Asian appearance and Chinese students...
in particular, intensified by the right wing media. Mosanya (2020) argued that to buffer stress, positive psychology constructs of grit and growth mindset may serve protective factors. Other studies analyzed how online ethnic communities served as a virtual hub for information dissemination and emotional support (Jang & Choi, 2020) and how transnational family relationships rendered visible the intimate fabrics that contribute to transnational (im)mobilities during the pandemic for Chinese overseas students (Hu et al., 2020).

As has been teased out above, the pertinent literature offers a perceptive analysis into issues at the interface between HE and the global health risk drawing from different theoretical lenses such as psychology, sociology, cultural studies and education, as well as incorporating diverse subjects, including governments, institutions, staff, students and their families. Insightful as the scholarship is, there remains a scarcity of a nuanced probe into how international students perceive their navigation of an overseas study journey that has been holistically disrupted. It is not yet clear whether and how this cohort enacts agency during this navigation. Despite emerging studies, they either were based on the staff’s point of view (de Boer, 2021; Siczek, 2020) or mainly shared students’ anecdotal reflections whose engagement with theoretical underpinnings is limited (Wang & DeLaquil, 2020). Bearing these gaps in mind, this study recruited a group of international Chinese doctoral students (ICDS) to share their emic perceptions, given the salient status of the cohort in the international education as the biggest group of international PhD students since the 1990s (Shen et al., 2016). Aiming to be a timely empirical contribution to international HE, the study focused on unpacking two research questions: 1. How has the COVID-19 pandemic impacted the PhD study trajectory that is embedded within a complex system of person–environment factors? 2. How have the ICDS coped with these impacts? The following sections delineated the conceptual framework and methodology, followed by findings and implications for international HE.

**Conceptual Framework**

To facilitate data analysis, this study brought together two theories—bioecological systems theory and needs–response agency. The first theory is suitable for probing into how the COVID-19 breakout as a global risk has a ripple effect on a doctoral student’s study trajectory that is constructed within a constellation of persons, settings, relations and objects, all of which are subject to change due to the pandemic. The second theory is of particular relevance to investigate how international students perceive and respond to situated needs arising out of the unprecedented context. Combining these two branches of theoretical underpinnings into the conceptual framework (Figure 1), this study teased out a full picture of international doctoral students’ navigation of a disrupted study trajectory at the interface of person–environment factors.

According to Bronfenbrenner (1979), each individual’s development is shaped by one’s bioecological environment that constitutes a set of nested systems,
encompassing the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The microsystem is the innermost layer, referring to interactions occurring in one’s immediate surroundings. Next to it is the mesosystem, constituting the connections between those immediate components in the microsystem. The exosystem consists of an environment which is external to one’s experience, but affects an individual without his/her direct function. The macrosystem is described as the broader sociocultural and national context that one is enveloped in. The last system is the chronosystem, referring to some significant external or internal events and changes throughout an individual’s life course.

Previous research (e.g., Xu et al., 2020a, 2020b) indicated that for international doctoral students, supervisory relationship remains one of the most salient constituents of the microsystem. Also, significant others in one’s personal and social communities such as family and friends are lasting elements in the microsystem that continue to impact a student’s study trajectory (Weidman & DeAngelo, 2020). For mesosystem,
it refers to linkages of researchers such as faculty and peers within one’s institutional contexts and collegiality of professional communities beyond one’s higher education institution. The exosystem constitutes regulatory policies underpinning an organizational culture of a situated institution in terms of how research, teaching and service should be governed (Baker, 2020). The macrosystem manifests as belief systems that mirrored in sociocultural factors such as societal attitudes, values and political institutions at work within the broad milieu that doctoral students walk into (Phelps-Ward, 2020). With the fluid and reciprocal interactions between these systems, each layer is interconnected with one another. Thus a change of activities, relationships, and roles in a layer may instigate ripples throughout other systems as the elements in any given system are constantly intertwined with other systems’ elements. By virtue of that process, an individual’s bioecological system is subject to constant transformation. In the context of international doctoral education, the COVID-19 pandemic represents an influential external upheaval happening on the chronosystem that potentially destabilizes other subsystems, which engenders challenges and/or opportunities. Serving as part of the theoretical framework, the bioecological systems theory contributed to deepening our understanding of a nuanced picture of how activities, relations, roles and aspirations within a PhD study trajectory were impacted by the crisis.

Apart from a multi-layered environment, Bronfenbrenner and Morris (2006) also noted that with different dispositions and resources, an individual sits at the core of his/her development. Agency as a state of being active in interacting with environment has been widely recognized to contribute to doctoral students’ development. Jazvac-Martek et al. (2011) posited that students enact negotiated agency to seek out interactions positively influencing their sense of progress. Nguyen and Robertson (2020) distinguished typologies of agency utilized for different purposes, thus disentangling multifaceted dynamics negotiated between doctoral students and their operational contexts. In a similar nuanced fashion, Xu’s (2021) study further illuminated that agency influences how international doctoral students judge, produce and imagine relations, symbols and activities in the in-between space, which in turn gives shape to their diverse approaches to agency enactment. Amidst a plethora of conceptualizations of agency employed by doctoral students in international mobility, we found needs−response agency particularly relevant in addressing our research question. According to Hopwood (2010) and Tran and Vu (2018), this term underscores that given that international students navigate a study trajectory in a betwixt-and-between space that traverses home and host milieu, they are demanded intention and action to attend to structural and social context around them to realize specific needs in these conditions. This form of agency is of great significance to international students in the context of COVID-19 that makes the already steep learning curve even steeper with many adaptive strategies immediately required to address their new needs. Needs−response agency afforded a lens for entangling if and how the ICDS engaged themselves in mobilizing and creating resources to address extra structural needs that remain part of the new normal.
Methodology
To facilitate a deep investigation, this study employed a qualitative methodology. The recruitment was circulated with a purposive snowballing strategy to target ICDS who were either overseas or in China when the interview was conducted between late September 2020 and February 2021. The invitation to participants detailed the research objective and procedures. The researchers stopped recruiting more participants when the recruitment secured 16 participants, reaching a point of qualitative saturation in relation to the key research questions (Hu et al., 2020). While snowball sampling is helpful in allowing the researchers to access potential participants who meet the eligibility criteria through the nomination of people, it might not ensure a good representativeness of the sample. To mitigate this limitation, we tried purposefully to attend to the issue of diversity in the sample, demonstrated by the following aspects. First, the sample covered onshore and temporarily offshore ICDS, encompassing nine students who continued study in respective host universities and seven students who either have been stranded in China given the travel ban rejects the chance to return or chose to temporarily stay in China. Second, from a geographic point of view, the sample were sourced from major receiving countries of Chinese students such as the United States, the United Kingdom, Australia, New Zealand and other host countries in Europe such as Germany, Belgium and the Netherlands. Third, the ICDS studied diverse disciplines and were at different stages of doctoral candidatures. This multidimensional diversity exposed the data-set to more nuances and complexities, enabling a discovery of (dis)similarities across different trajectories. To protect the privacy of the participants, they were assigned pseudonyms. Table 1 shows their demographic information.

To overcome physical constraints, online one-on-one semi-structured interview was conducted, each lasting approximately 30−60 min. During this time, they were encouraged to share their lived experiences around open-ended questions about how they navigated a disrupted PhD trajectory since the outbreak of the pandemic. In this study, mandarin was chosen to cater for the purpose of facilitating effective communication as a language shared by the researcher and the participants. Data analysis was performed in Mandarin. All transcripts were transported into NVivo 12 for a thematic analysis informed by the data and the theoretical underpinnings adopted by the study. The researcher started with reading and analyzing each participant’ text as an example, segmenting each sentence into basic meaning units, followed by a cross-examination of an iterative comparison and contrast of (dis)similarities between those examples. After that, a set of hierarchical themes were refined, reviewed and defined. It is worth mentioning that whereas the analysis was performed in Chinese, the excerpts used in the paper were translated by the first researcher to reach out to a wider English readership. To mitigate misinterpretation and boost credibility, translated transcripts were returned to some participants for member checks, based on which revisions were made where necessary, in order that the quotes were rendered accurate, impartial and complete. The findings are detailed in the next section.
Findings

The study cast light on the ripple effects of the pandemic on the bioecological system. As well, it highlighted how the ICDS have enacted needs—response agency to restore its stability.

**Microsystem: Distance PhD Supervision and Family Support Network**

According to the study, COVID-19 has impacted profoundly on the microsystem where the innermost circle of interactions happened between the ICDS and their immediate surroundings. The impact was most saliently embodied in the change of doctoral supervision and family relations.
First, doctoral supervision was mentioned by the majority being less effective as a result of being moved to an online space featuring a loss of in-person contact and entailing technical issues. As the most important dyad contributing to a doctoral students’ academic enculturation and functioning (Lee, 2008; McAlpine, 2013), supervisory relationship became precarious in the special historical context. William’s remarks encapsulated an unsatisfactory online supervisory experience:

During the pandemic, I use Zoom and emails to contact my supervisors. Previously, minor issues were handled face-to-face in their offices within five minutes. But now our physical contact has been cut off. Our communication is not as effective as before because I find it difficult to understand each other perfectly well online. At times, there are Internet connectivity issues, leading to audiovisual disasters. There is an eight-hour time zone difference between China and the U.K., so it’s also a problem to work out a schedule that fits my supervisors and me. (William)

There was a small number who found the online supervision more positive due to an increased frequency and convenient access of virtual meetings:

We still have regular meetings. The only difference is the mode. I used to go to their offices. Now we use videoconferencing which is more convenient since I don’t need to go to the campus regardless it’s too hot or too cold. (Sammi)

The good part is that our meetings are more frequent. We used to see each other once every two to three weeks before the pandemic. Now we have a weekly online meeting. My supervisors are very supportive. (Joseph)

As illustrated above, perceptions of change in relation to supervision were personally contingent and contextualized, subject to each individual’s lived experience and sense-making of their encounters with their supervisors embedded in different technical and operational contexts.

Second, staying at the core of the microsystem, the family plays an intricate part throughout one’s life span, and the pandemic has brought it to the fore. Similar to perceptions of supervision, the participants also expressed diverse opinions in terms of the impacts on changing family relations:

I have been living with my parents since I came back. I don’t need to worry about daily life, like grocery shopping, cooking, cleaning, etc. I used to spend much time on all the stuff when I was in Australia alone. Also, it’s the longest period that I have been with my family. Thanks to the pandemic, I get more time to feel family love. A blessing in disguise, I should say. (Dan)
My family has been very supportive materially and emotionally. They sent me face masks twice. My parents give me a video call every day, offering me a lot of comfort and support. (Emma)

Obviously, affective, financial and labor investment by the family have been beneficial in terms of diminishing the participants’ financial, emotional and health vulnerability and boosting their resilience to cope with repercussions incurred by the pandemic. Further, the involuntary lengthy stay in the home country turned out to serving an unexpected outcome of strengthening family bonding, adding a silver lining to the disappointing event. This is succinctly captured in Dan’s “a blessing in disguise” remark.

Concurrentiy, the pandemic has instigated relational tensions and role conflicts, the adverse impacts of which penetrated into their doctoral study:

At home, I need to make some adjustment to life style. I mean it’s been ten years since I lived with my parents. A lot of frictions happen between us, which consumes much energy. (Nancy)

It’s very easy to get distracted working from home, especially when you have a kid who stays home all day as you do during this difficult time. (Mia)

As shown in Nancy’s case, inter-generational frictions were intensified given that temporal and spatial restriction blocked many channels to release these tensions. It unavoidably took a toll on their study with more energy input to restore family relational harmony. Also, for those like Mia who needed to juggle the demands between roles as both a parent and a student, the struggle has been even more intense when a learn-from-home kid necessitates more time and care from a work-from-home PhD parent.

Mesosystem: Shrinking yet Expanding Research Community

Beyond the microsystem, the mesosystem that constitutes the interconnections of situations, events and relations within the ICDS’ immediate surroundings was also affected by COVID-19. For doctoral students, peer networks created among novice doctoral researchers and more seasoned scholars across institutions and disciplinary group associations is tantamount to a significant mesosystem where connectivity of research communities is negotiated and performed. This subsystem is of pivotal significance to academic socialization, thus impacting one’s identification with a legitimate academic membership (Rhoads et al., 2017). According to the study, the pandemic has disabled many formal and informal networking functions which used to be a key to cohesion of the research community and PhD students’ academic socialization. A massive and abrupt relocation of networking to virtual space was identified less engaging and attractive:
My original plan was to attend two international conferences this year. But one was canceled, another was transferred online, which has prevented me from having a close communication with peers. (Wendy)

We used to chat a lot having lunch at the common room, sharing information about conferences, research tips, literature, or just some silly jokes. But we now only use emails and videoconferencing apps to know what’s happening to each other. This kind of communication is ad hoc and less engaging because it’s like we each live in a separate reality. I feel like we are not as close as before. (Joseph)

I still keep in touch with my colleagues in the U.S., but much less frequent. Although I can still discuss with peers online, it’s unlike when we were together physically, feeling each other’s presence and engaging in some movements, etc. (Emma)

Putting aside technical issues disclosed in supervision, the virtuality has rendered distance networking problematic. As indicated above, despite interactions having been possible, peer communication in a virtual space was comparatively more disembodied without the lived experientiality of co-constructing a shared social reality that features the old norm when students can have a close communication with peers (Wendy), maintain a close liaison over a lunch (Joseph) and feel each other’s physical presence (Emma). With temporal–spatial demarcation and experiential asynchronicity, virtual networking appeared to be less functional in engaging the ICDS than was the face-to-face mechanism, which negatively affected the connectivity of a research community.

Despite loosening strong relations that used to make the ICDS’ academic mesosystem humane and compact, COVID-19 served to expand this mesosystem as it stimulated the establishment of new linkages and networking resources in a virtual space that transcends exclusion. Mia’s experience exemplified this view:

I found a research center closely aligned with my research area. Because of COVID-19, it introduced a series of weekly Webinars that invite scholars worldwide to give a presentation. It’s free to join in. That’s very good. It has expanded my research vision and lessened my feeling of powerlessness, letting me know that I am not fighting a battle alone. Also, many WeChat learning groups emerged online, where doctoral students cheer each other up and share some articles on research methodologies. I think it kind of made up for the absence of a real academic community. (Mia)

Against the backdrop of COVID-19, more equitable and accessible networking resources and opportunities such as free Webinars and WeChat learning groups and free virtual conferences were open to doctoral students. The virtual connection counterbalanced physical and financial restrictions in real-world networking, by virtue of which not only “made up for the absence of a real academic community” (Mia) but
also benefited the connectivity of an expanded community albeit the fact that it might not be as close as the core community the students used to have.

**Exosystem: Institutional Initiatives on Crisis Management**

The study manifested that the exosystem incorporating policy-designing and decision-making processes which although were executed at the institution/faculty level and did not involve the ICDS directly have yet had tremendous impacts on their doctoral study. These processes were mainly orientated toward crisis management, about which the ICDS’ perceptions varied.

An urgent implementation of crisis support policies by institutions was illustrative of how the exosystem has made corresponding changes to alleviate adverse impacts incurred by the chronosystem. In general, their usefulness, manifested in the distribution of safety kits and instructional advices on the virus prevention, was supported by the onshore participants:

My university has distributed personal safety kits to us, containing face masks, hand sanitizer, tissues, etc. It also set up online courses for prevention of the virus. I am very grateful for the efforts made by my university and faculty. (Matt)

My university has distributed masks and mailed some gifts and greeting cards. It also investigated into international students’ challenges and appeals, sharing their updates via online reports. My faculty organized staff meetings regarding how to facilitate supervision for international doctoral students. The International Office also timely updated measures taken by governments and offered personal suggestions on prevention of the virus. (Emma)

In contrast, those who went back to China for fieldwork, holiday, and other purposes prior to the outbreak, or fled back to be with their family during the pandemic were less optimistic about these policies:

My university has sent several mass emails, saying there would be financial hardship support and psychological consultation for students. But none of them were for international students only. It surveyed our intention to be back to Australia, saying that there was a lobby for the opportunity for HDR students to return in December. But nothing practical happened yet. (Dan)

A lot of emotional support poured in… although there has been no substantial progress. Not much practical support, especially for international students stranded home…I did not expect too much from the university. I think I need to endure most of the difficulty myself. (Nancy)
For Dan and Nancy who are in China where the pandemic has been under better control since March 2020 and different types of social support are more readily available in the home context, their priority is a possible permission to return to the host institution before a prolonged delay exacerbates the disruption to their doctoral study. Given the institution is not the decision-maker in this regard, it is not surprising that the ICDS commented the return initiative as not practical, although they also showed understanding towards the powerless situation.

**Macrosystem: Adverse Sociopolitical Effects of COVID-19**

Finally, COVID-19 has intensified existing sociopolitical conflicts, distorting belief and value systems in relation to international Chinese students, which enclosed this cohort in a macrosystem less favorable than it was before the outbreak of the pandemic. This tension was saliently manifested in the United States context with the U.S.–China relations hitting the lowest point by mid-year 2020 since 1972 (Boylan et al., 2021). For one thing, Chinese students were negatively impacted, feeling stressed over personal safety and the rise of Sinophobia. This was encapsulated in Jessica’s words:

> I didn’t go anywhere except going grocery shopping. I was afraid of being infected. You know, the situation has been really bad here. The media criticized Wuhan virus…I felt discrimination against China and Chinese is deteriorating. A friend of mine was once verbally abused by a white guy and was hopelessly devastated at that time. (Jessica)

Obviously, Chinese students in the United States bore the brunt of anger toward China that increased dramatically following the misinformation manipulated by the Trump administration that China mismanaged the outbreak and spread of COVID-19. As well, they suffered from a high level of health risk given that the United States is the worst-hit country so far.

Furthermore, COVID-19 heightened geopolitical tensions that penetrated into academy, manifested by the U.S.’s crackdown on Chinese students and scholars, which threatened their research prospects. Leo shared his experience of fleeing a hostile environment where he conducted research for years:

> Sino-US relations plummeted last year, including expelling Chinese graduates in STEM. Many of my friends chose to leave America. It took me several months to get flight tickets for my whole family back. I remembered I was questioned at the XX Airport on my departure day. We barely caught our plane! Luckily, I am finally back. (Leo)

Leo miniaturated many Chinese researchers who fell into victim to Trump’s “painted as spies” allegation and his subsequent extra scrutiny for fear that they stole intellectual property. For Leo and many others, COVID-19 destabilized the macrosystem and redirected their academic trajectories.
The above analysis sheds light on the large-scale disruption triggered by COVID-19 on various subsystems. However, each individual is the creator of his or her own development (Bronfenbrenner & Morris, 2006). As autonomous and active agents, the ICDS explored and mobilized resources to mitigate the damage, sparing no efforts to restore the stability of the bioecological system. Bearing in mind structural adjustments in response to the risk, they enacted needs–response agency to deal with the specific demands rising from a gloomy context that however garnered latent force for empowering personal growth. Making full use of domestic and overseas, on-site and online resources, they practiced virtual internationalization at home, thus preserving immobile mobility, as revealed in some exemplary views below:

Webinars home and abroad just spread so quickly these days. I took part in all webinars that I found relevant to my research and have gained a lot. (Zoe)

Many initiatives were taken, such as attending a program of writing for publication and an online NVivo training course. (Sammi)

I asked some friends who are doing a PhD in China to borrow books that I need from their libraries...I also selected some interesting workshops from a list of available options offered by my faculty to attend. (Nancy)

With some peers in China, I have created an online research group where we update and discuss our learning progress by uploading our daily and weekly study reports. It’s a good way of mutual supervision. (Olivia)

As disclosed above, institutional and commercial initiatives have mushroomed to address the challenge posed to students. Nevertheless, it is the ICDS who as agentic actors identified, integrated and harnessed these resources such as online courses, webinars, and study groups, which brought their facilitative effect into full play. Mobilizing social capital such as borrowing books from domestic peers, the ICDS maintained the virtual mobility of international education despite being stranded in a physically immobile state due to border closures and lockdowns. With agility to adjust to challenges and agency to exploit assets brought by the new learning environment, they minimized the adverse effects and maximized the potentiality of transforming the risk into positive construction of a doctoral enterprise.

Furthermore, their agency transcended addressing needs in relation to their current doctoral study specifically requested by this pandemic, but incorporated a visionary orientation of preparing for future needs, as displayed by Wendy:

Because of staying home for almost a year since the outbreak of COVID-19, I have got plenty of time to think about my future research plan. The pandemic has led to many
limitations, especially for experiment-based research. My views on future research direction have changed. I am trying to look for areas which are more spatially boundless and less restricted by lab-based facilities. I have learnt some skills to prepare for that. That’s a good part of the risk. (Wendy)

During this pandemic, apart from continuing my own research, I also attended to job postings about postdoctoral vacancies and academic positions. Academia has been severely impacted by COVID-19 and I think it’s important for me to know what the market needs in new circumstances so that I can make preparations to be competitive in future job hunting. (Amelia)

The above views showed that the pandemic alerted Wendy to the fact that over-reliance of her current research on lab is prone to risks such as COVID-19. Being mindful of the structural restriction as a hindrance to addressing needs emerging from external events, she prepared herself cognitively and behaviorally, as indicated by her re-conceptualization of future research direction and purposeful skills accumulation, respectively. Relevant preparedness and awareness would help her become a more efficacious agent should similar needs arise in her upcoming research journey. In Amelia’s case, being aware of a reshaped academia in the post COVID-19 era, she made agentic efforts to familiarize herself with the academic job market despite being early into her doctoral candidature. Her preparedness in terms of responding to changing needs of the academia manifested her future-oriented agency.

**Discussion and Conclusion**

The study shed light on the emic perceptions of the ICDS’ navigation of the doctoral trajectory amidst COVID-19. Specifically, it centered around untangling how a global event occurring in the chronosystem instigated impacts on the whole bioecological system, as well as how needs–response agency was enacted by the students to restore stability of the bioecological system. Several insights can be gleaned from teasing out the two questions.

First, to the authors’ best knowledge, as one of the first studies applying bioecological systems theory into investigating international students’ perceptions of the doctoral study trajectory amidst COVID-19, it contributes to a nuanced disclosure of how the impacts of the pandemic penetrate into diverse layers of subsystems within which their doctoral study is nested. At the microsystem level, the global health risk necessitates distance PhD supervision, the perceptions of which manifest positive and negative inclinations, dependent upon the extent that the students feel impeded or facilitated by the new pedagogy in the supervisory context. As well, while the risk reinforces a family support network that assists the students in relieving stress and offering care, it foregrounds obtrusive forces such as inter-generational frictions and role conflicts that drain the students’ energy investment in doctoral study. In terms of mesosystem, the pandemic dwindles, due to lockdowns, offline interpersonal
and intellectual experiences and ties that used to nourish connectivity between research peers and support research productivity; concurrently, it feeds a boundless online research community that offers students a more equal and extensive access to networking. With regard to the exosystem, COVID-19 sets in motion some institutional initiatives to manage the crisis, the practical effects of which are less positively received among those who stay in China. Finally, the macrosystem deteriorates due to heightened geopolitical tensions in the wake of COVID-19, leaving students in stress and uncertainty. The findings deepen and enrich Wang and DeLaquil’s (2020) most recent study by articulating more settings, relationships and activities within the multilayered environmental context in shaping the personal doctoral study experience against the unprecedented pandemic.

Second, the study illuminates that confronting external challenges, the students enact needs−response agency to respond to and harness new structural conditions so that their doctoral study can survive and even thrive despite being caught in precarious circumstances. It echoes Tran et al. (2020) who contended that needs−response agency is achieved through active engagement with and mediation of the surrounding ecological system with the aim to realize specific needs. In the research, facing the current constraints of physical mobility, the students engage themselves in preserving virtual mobility that to a certain extent mitigates adverse impacts incurred by the deprivation of immersive educational experiences. Further, bearing in mind that structural needs necessitating response may arise in future doctoral study, they also make adaptive preparations in relation to research areas and methodologies so that doctoral research would be less vulnerable and more resistant to unexpected external events. As well, taking into account long-term impacts of COVID-19 on academia, they also display proactivity in terms of equipping themselves better for a precarious academic job market. These findings point to the notion that for the participants, the enactment of agency means more than an immediate response to meet needs “here and now” but also incorporates preparation for needs “there and then”. Resonating with other studies (Tran & Vu, 2018; Tran et al., 2020; Xu, 2021), the study elucidates that agency is not only bound to the present, but also subject to future beings embedded within one’s imagination of aspired self-positioning.

The study suggests some implications for facilitating a doctoral trajectory during a global health crisis. Given possibilities are high that the fallout may continue for a relatively lengthy period for international students, it requires concerted efforts from concerned parties to address these challenges and transform them into generative forces where possible. To begin with, in the spirit of empathy and professionalism, supervisors should sensitize themselves to extra difficulties faced by students, and make pedagogical adaptations to cater for students’ needs. As well, it is contingent upon host universities to protect students’ wellbeing, and provide more coherent and systemic support in order that students can better tap into the potential of online programs and activities, many of which are made readily available and free access during COVID-19. Further, more investment in educational technology should be enhanced to boost research connectivity so that the potential of virtual exchange can be
harnessed to provide an inclusive approach for intercultural learning (Jørgensen et al., 2020). Third, at the macrosystem level, some governments and social media should stop spreading hostile sentiments and practices that Chinese and other international students have been unjustifiably suffering. On top of that, as the core navigator of a doctoral journey, international students themselves need to take advantage of the benefits of transnational mobilities of research, ideas, knowledge and networks through various online channels. Having said that, we must admit that a fine-grained articulation of these efforts is neither the emphasis of the current study, nor can be succinctly elaborated in a piece of this length. We also acknowledge that our research is limited due to its qualitative nature. With a relative small number of sample, we have not delved into differences between students of diverse disciplines and host countries. Future research is encouraged to tease out nuanced differences and etiologies contributing to them based on a larger pool of student participants with heterogeneous background factors.

**Declaration of Conflicting Interests**
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**
The authors received no financial support for the research, authorship and/or publication of this article.

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