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Qaphelani Ngulube, a first-generation student from Zimbabwe, faces unique challenges as a graduate student.

FIRST-IN-FAMILY SCHOLARS BUST GENERATIONAL BARRIERS

First-generation students need better support when applying to, navigating and coping with graduate studies. **By Nikki Forrester**

"As a first-generation student, the challenges start before grad school," says Jisub Hwang, a PhD candidate at the Korea Polar Research Institute in Incheon, South Korea. Hwang is the first person in his family to attend university. "It's tough to help my family understand the long journey of getting a PhD. They want me to earn money at a company."

Hwang says South Korean undergraduates typically secure industry jobs after earning their degrees, but he realized this path wasn't

for him, given his passion for polar research. In a conversation with his parents about his career plans, Hwang explained why going to graduate school makes him happy and is necessary to achieve his long-term career goal of becoming an independent researcher. "The more they understand about graduate-school life, the more they support me and respect my decision," he says.

Having difficult conversations with family members is just one of many challenges first-generation graduate students can face. For example, parents are often proud of their

children's undergraduate achievements, but they might worry about the financial instability that comes with more years of study. Students who are the first in their families to attend university might struggle with imposter syndrome and feel guilty for leaving their families or not financially contributing enough to them. Although many first-generation students are interested in pursuing graduate degrees, they might not have the financial resources or guidance to navigate applying to graduate school and to thrive in the academic environment¹.

Despite the challenges, first-generation

students make up a large portion of undergraduate and graduate students. In 2016, 56% of undergraduate students at US institutions were first-generation, and approximately 30% of US PhD recipients are first-generation². In England, two-thirds of graduates are the first in their families to attend university³.

“That’s a tremendous amount of students,” says Sarah Whitley, assistant vice-president of the Center for First-generation Student Success, an initiative based in Washington DC that provides information about advancing the success of first-generation students and practices for doing so. “But institutions are such complex bureaucratic and jargon-filled entities that we are making it difficult for first-generation students to access the support and resources imperative to their success.”

Opening doors

First-generation students, who are more likely to come from lower income families and to belong to under-represented groups in science², often lack the financial resources, research opportunities and mentorship needed to make graduate school a viable option. “If you’re the first in your family, you may not have the cultural capital to understand how to navigate graduate education,” says Whitley.

“The biggest challenge is the lack of awareness,” says Arnaldo Díaz Vázquez, assistant dean for diversity inclusion at the University of Texas Southwestern Medical Center in Dallas. It can be difficult for students to determine how to pick the right graduate programmes, apply and advocate for themselves if they don’t know someone who’s gone through the process, he says.

Some first-generation students are even discouraged from pursuing university degrees after they graduate from high school. Natalia Jagielska, who moved with her parents from Poland to Bolton, UK, during the 2007 economic crisis, recalls career advisers and teachers telling her that she wouldn’t be competitive for a place at a research university after attending a state, rather than private, secondary school. “My grades were lower than my colleagues’,” says Jagielska. But that didn’t prevent her from pursuing an integrated bachelor’s and master’s programme in geochemistry and palaeobiology at the University of Manchester, UK.

“My priority was finding an integrated master’s, otherwise I wasn’t able to afford it,” says Jagielska, now a PhD candidate studying Jurassic pterosaur evolution at the University of Edinburgh, UK. Because her master’s programme was integrated, it took only eight months, and she could use a government student loan to cover both degrees. To save money at university, she lived at home with her parents and worked part-time. She also received support through the Manchester

Access Programme, which helps to prepare local secondary-school students for university.

Along with funding, the access programme helped Jagielska to develop the knowledge and skills she needed to be successful as an undergraduate student. “They showed us how to read research papers, do referencing, write essays and get to know what university life looks like,” she says.

Although she’s grateful for the programme’s support, she thinks universities could do more to support first-generation students. For instance, university administrators could account for discrepancies in the quality of secondary education that students receive: state and private schools can vary greatly in their resources and staff. “We are competing on the same exam board but coming from very different starting points,” she says. “Universities have resources to help you, but the issue is that people don’t access them.”

The cost of graduate education is another significant barrier. “I waited 15 years to get my master’s degree,” says Qaphelani Ngulube, who graduated from university in 2005.

“If we do everything with first-gen students in mind, every graduate student is going to benefit.”

Despite years of effort, he didn’t receive a scholarship until 2020 to pursue a master’s degree in chemistry at Uppsala University in Sweden. Ngulube says many students from his home country, Zimbabwe, aren’t fully aware of the available opportunities, or they don’t apply for scholarships because they don’t feel that their achievements are competitive enough for them to receive funding for studying abroad. “If they don’t get a scholarship, they can’t pay the graduate-school fees because many people don’t have that much saved,” he says.

Since starting his master’s programme, Ngulube has supported students from Zimbabwe and other countries who are interested in pursuing graduate degrees. He points them to a variety of scholarship, university and study-abroad websites to find funding opportunities, such as Studyportals’ global scholarships portal. Talking to people who have secured scholarships can help first-generation students to understand the application process and build confidence in their ability to earn financial support, says Ngulube.

Graduate application fees can also be expensive. Although many institutions offer waivers, fellowships, scholarships and other forms of financial aid, some students might not be aware that they’re available. “It’s the issue of exposure,” he adds.

At an institutional level, undergraduate programmes can do more to help first-generation

students determine whether graduate studies are right for them, says Whitley. “More institutions are growing their academic-aid funds, particularly for first-generation students, where students can apply for support to take graduate school standardized tests, visit an institution that they are interested in and get study materials or books,” she says. “Some even help them get clothing for a graduate school interview.”

Staying on track

Once first-generation students start graduate studies, they must navigate the academic responsibilities of their programmes. Although the overall adjustments to graduate school aren’t necessarily unique for first-generation students, they can be compounded by external factors, such as being far from home and not having a support system of people who understand academia. “Non-first-generation students can get expert guidance both on campus and at home, but I can only get that from campus and outsourcing,” says Ngulube.

Undergraduate training doesn’t necessarily groom first-generation students to excel in graduate programmes. “I wasn’t prepared for graduate school at all,” says Silindile Maphosa, who is from Zimbabwe and is currently pursuing a PhD in biotechnology at the University of Pretoria in South Africa. “I couldn’t go back to my family to ask, ‘Can you please tell me how this works?’,” she describes. Instead, she advises new students to quickly find their own network of people to help them navigate university systems.

After months of struggling to manage a new e-mail system, coursework expectations, meetings and research, Maphosa reached out to a more senior graduate student in her laboratory, who was also a first-generation student, for help. “I decided to open up to her about how stressed I was without anyone to help me. Then I realized that she’d gone through the same thing.”

Maphosa wishes she had turned to her peers earlier for help and to share her anxieties about starting graduate school in a new environment. “Ask questions of those who have gone through the process. They can be our guides.”

“We also need faculty and staff to be proactive,” says Díaz Vázquez. He says faculty members should not assume that a quiet first-generation student is not engaged or not struggling. Graduate advisers should check in with students and ask what hurdles they’re facing, so they can provide support or recommend other mentors. “I don’t know how to navigate the health-care system, but I can put students in contact with someone who does. That’s why, as a mentor, I have to keep building my network,” says Díaz Vázquez.

Whitley encourages institutions to be more transparent about graduate-school expectations and requirements. “If we do everything



Natalia Jagielska, a first-generation PhD student, studies a pterosaur fossil.

with first-gen students in mind, everyone benefits. If you make institutional navigation easier, if you make policies and procedures more clear, if you make jargon less complicated, every graduate student is going to benefit," she says.

Coping with pressure

Perhaps some of the biggest struggles that first-generation graduate students face are emotional and mental: dealing with fear of failure or guilt for moving away from their families or not contributing enough money to them, and an intense pressure to succeed. For example, first-generation students and those with family members who've completed university experience similar degrees of imposter syndrome, but it is more strongly associated with stress among those who are first generation⁴.

"The anxiety of being first-gen is just a lot," says Nicole Schroeder, a postdoctoral researcher in history at Kean University in Union, New Jersey. Throughout university, Schroeder felt hesitant to speak up in class if she didn't have specific questions or comments. "I felt like I was underprepared, even if that wasn't necessarily the case."

To build her confidence, Schroeder wrote out prepared answers to discussion questions before class. "Even when I made comments that were off the mark, my educators would often gently correct me or use it as an opportunity to clarify," she says. In time, she learnt that nothing bad was going to happen, and that bringing up topics that she was confused about probably helped other students, too.

Now, in her teaching-intensive postdoc position, Schroeder supports first-generation undergraduates in the classroom. "I can tell they struggle with some of the same things, such as whether their perspective matters," she

says. To ease the anxieties of these students, Schroeder provides multiple avenues for students to demonstrate their participation: she evaluates their notes on course readings, and breaks the class into smaller discussion groups so it's easier for everyone to speak up.

Many students experience another burden – the guilt of pursuing a different path. Díaz Vázquez struggled to support his parents financially during his graduate studies. "I felt pressure to help because I was making more money than my parents – but, at the same time, I was not making enough to survive myself," he says.

Maphosa left her three-year-old son in Zimbabwe to obtain her graduate degree in South Africa. Although her parents support her decision, she says they struggle to understand her graduate-school obligations. "It was as though I had abandoned my duties. I was anxious, ashamed, and felt like an imposter. It felt like I had to choose between being a mother or a student," she says.

In time, Maphosa realized that this perception wasn't accurate and that she was serving as a role model for her son. "Put yourself first sometimes. Your children will be proud of you," she says. "If you fail, that's also OK, pick yourself up and try again."

Guilt is often coupled with an intense drive to succeed. "My family has sacrificed a lot for me to study at the graduate level – I'm away for long periods of time and they have to make do with my limited income," says Ngulube. "I feel a drive to perform because not performing will be like wasting precious time."

Ngulube's family is supportive because they see his graduate experience as an example for the next generation. "I call it positive pressure," he says. If he pushes the boundaries in his career, then his younger family members will

broaden their own career aspirations.

Although the feelings of guilt and pressure to succeed might not go away, first-generation students can cope by building a community and support network that understands them. "Finding your people is the most important thing," says Schroeder, noting that this group doesn't have to be limited to other first-generation students.

When Schroeder began her postdoctoral position, she was assigned a faculty mentor. But it wasn't a perfect match – Schroeder has Ehlers-Danlos syndrome, an incurable connective-tissue disorder, and had brain surgery before starting her PhD programme. "My mentor is not disabled, is older and is not a woman. I am dealing with problems in the academy that my mentor cannot help with," she says. Instead, she has relied on her peers for support. "When I didn't find a community around me, I built it," says Schroeder, who founded the Disabled Academic Collective, a blog and support network.

"Networking can be incredibly intimidating," she says. At conferences, Schroeder seeks out other early-career researchers who are in PhD, postdoc and tenure-track positions. "They are going to be your best bet because they are the most invested in bringing new light into the academy."

She openly identifies as first-generation and disabled but notes that these topics are rarely, if ever, addressed in formal conference and networking events. Instead, she focuses on networking with peers online through her website, Twitter and Zoom. She also meets with two to four early-career scholars from her PhD programme over Zoom every other day or so, to work together, share resources and give presentations as practise for job interviews. "That has been my anchor," says Schroeder.

Some departments and institutions have first-generation and identity-based organizations, as well as mental-health, physical-health and spiritual resources, that students can tap into as soon as they start graduate programmes. Connecting with other first-generation students early in graduate studies and openly sharing experiences is immensely important, says Díaz Vázquez. "We have to share the challenges because the challenges that you have as a first-gen undergraduate just escalate in intensity as grad students and then as a faculty. But by sharing and being vulnerable, we can empower each other."

Nikki Forrester is a freelance science journalist based in Davis, West Virginia.

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