

# Lived Experiences of Filipino Chemistry Students in International Graduate Education

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## ABSTRACT

The increasing globalization of higher education has intensified student mobility, with many Filipino students pursuing advanced degrees abroad to access specialized programs, advanced research facilities, and global career opportunities. However, limited research has examined the lived experiences of Filipino students in scientific disciplines, particularly in chemistry, where gaps in laboratory training and research exposure remain evident. This study aimed to explore the motivations, challenges, coping strategies, and developmental outcomes of Filipino students studying abroad, as well as to assess how undergraduate preparation in the Philippines influences their readiness for international graduate education. Using a qualitative phenomenological approach, data were collected through semi-structured virtual interviews and analyzed via reflexive thematic analysis. Findings revealed that students are driven by local limitations in specialization and research infrastructure, while encountering socio-cultural and emotional challenges such as homesickness, language barriers, and cultural adaptation. An “instrumentation gap” in laboratory skills was identified despite strong theoretical foundations. Nevertheless, students demonstrated resilience through support systems and adaptive strategies, leading to transformative growth and a strong commitment to national contribution. These findings highlight the need for reforms in curriculum design, research infrastructure, and global engagement to enhance competitiveness and promote brain circulation.

**Keywords:** Filipino students; international student mobility; phenomenology; higher education; intercultural adaptation; research preparedness; brain circulation; student resilience.

## INTRODUCTION

The globalization of higher education has led to a steady increase in student mobility, with millions of students pursuing academic opportunities outside their home countries (UNESCO, 2021). This global trend has become particularly evident among Filipino students, who increasingly seek advanced degrees abroad to access high-quality education, advanced research facilities, specialized programs and broader career opportunities. In scientific disciplines such as chemistry, international education provides opportunities for exposure to modern laboratory instrumentation, research-intensive environments, and advanced scientific training that may not be readily available in local institutions.

Globally, increasing student mobility has also led to more culturally and linguistically diverse academic environments. However, this diversity introduces new challenges for international students. According to UNESCO, a significant proportion of learners worldwide do not receive education in a language they fully understand, highlighting the critical role of language in academic success and adaptation. In higher education settings, language barriers and cultural differences are consistently identified as major challenges affecting both academic performance and social integration among international students (Wilczewski & Alon, 2022).

Despite these global trends, the experiences of Filipino students in international graduate education remain underexplored, particularly within discipline-specific contexts. Much of the existing literature focuses on general international student experiences, with limited attention to challenges unique to scientific fields such as laboratory-intensive training, research immersion, and access to advanced analytical instrumentation. More

critically, there is a lack of empirical insight into how disparities in undergraduate preparation, especially in terms of research infrastructure, laboratory exposure, and technical skills, which shape Filipino students' readiness and adaptation to international graduate education. This gap is particularly important given the centrality of experimental competence in chemistry, where differences in training environments may significantly influence both confidence and academic performance (Jarar & Kurniawati, 2025).

These challenges point to broader systemic concerns in Philippine higher education, particularly in relation to limited research funding, constrained laboratory resources, and uneven access to advanced scientific equipment (Orbeta et al., 2020; Salazar-Clemeña & Almonte-Acosta, 2021). While Filipino students are recognized for their adaptability, resilience, and strong theoretical foundations, these systemic limitations may contribute to gaps in practical competencies, particularly in advanced instrumentation and research methodologies. At the same time, Glass et al. (2021) found that participation in global education enhances intercultural competence but also requires strong institutional support systems. Furthermore, more recent discussions (UNESCO, 2024) continue to highlight inequities in global education systems, reinforcing the importance of understanding how students from countries like the Philippines experience and respond to these disparities.

In response to this gap, this study adopts a qualitative phenomenological approach and investigates the lived experiences of Filipino chemistry students who pursue advanced degrees in foreign countries, aiming to understand their motivations, challenges, adaptation strategies, and developmental outcomes, as well as the role of undergraduate preparation in shaping their academic readiness. By documenting these narratives, the study seeks to provide insights that may inform curriculum development, institutional reforms, and policies aimed at strengthening global competitiveness in Philippine higher education.

### **Research Objectives**

This research explores the lived experiences of Filipino chemistry students pursuing advanced degrees in foreign countries and their adaptation to international academic environments. Specifically, this research aimed to:

1. Examine the motivations that drive Filipino students to pursue advanced degrees in foreign countries.
2. Explore the academic, socio-cultural, and emotional challenges encountered by Filipino students in international academic environments.
3. Analyze the coping strategies and adaptive mechanisms employed by students in navigating cross-cultural and academic transitions.
4. Evaluate how undergraduate chemistry education in the Philippines shapes students' preparedness for international graduate studies, particularly in terms of laboratory skills, research competencies, and exposure to advanced instrumentation.
5. Synthesize the insights, recommendations, and reflections of Filipino students to inform future aspirants and contribute to the improvement of higher education practices in the Philippines.

### **Research Questions**

This study explores the lived experiences of Filipino chemistry students pursuing advanced degrees in foreign countries and their adaptation to international academic environments. Specifically, it seeks to answer the following questions:

1. What motivations drive Filipino chemistry students to pursue advanced degrees in foreign countries?
2. What academic, socio-cultural, and emotional challenges do Filipino chemistry students encounter in international academic environments?
3. What coping strategies and adaptive mechanisms do Filipino chemistry students employ in navigating cross-cultural and academic transitions?

4. How does undergraduate chemistry education in the Philippines influence students' preparedness for international graduate studies, particularly in terms of laboratory skills, research competencies, and exposure to advanced instrumentation?

5. What insights, recommendations, and reflections do Filipino chemistry students offer to guide future aspirants and inform improvements in Philippine higher education?

## **METHODOLOGY**

### **Research Design**

This study adopted a qualitative phenomenological research design to explore the lived experiences of Filipino chemistry students pursuing advanced degrees in foreign countries. Phenomenology was chosen as it allows the researcher to capture and interpret students' subjective perspectives and the meanings they ascribe to their experiences within their personal, academic, and professional contexts (Creswell & Poth, 2018). This approach allows for an in-depth examination of students' perspectives, capturing the essence of their academic, socio-cultural, and personal transitions in foreign academic environments. Through these narratives, the study generates meaningful insights and practical recommendations that may guide future Filipino students pursuing advanced degrees in foreign countries.

### **Participants of the Study**

The study utilized purposive sampling to select Filipino chemistry students enrolled in graduate programs in foreign institutions, ensuring that participants possessed relevant and information-rich experiences. A total of 13 respondents were included in the study. Respondents were selected based on the following criteria: they must currently be enrolled in a foreign chemistry graduate program, have completed their undergraduate training in the Philippines, are full-time MS or PhD candidates, and are willing to share detailed accounts of their experiences. To expand participant recruitment, snowball sampling was also employed through professional networks and academic associations, with initial screening conducted to verify participants' eligibility prior to their inclusion in the study.

### **Locale of the Study**

The study focused on Filipino chemistry students who were pursuing advanced degrees in various foreign countries, particularly in Southeast Asia and Europe. These regions provide diverse academic and cultural contexts, offering valuable insights into the international experiences of Filipino graduate students. While the scope was limited to selected regions, it allowed for an in-depth exploration of participants' lived experiences within comparable educational and sociocultural environments.

### **Data Collection**

This study primarily collected data through semi-structured, in-depth interviews, allowing participants to freely express their experiences while ensuring alignment with the study objectives. An interview guide was developed based on the research questions, covering key areas such as motivations, academic challenges, cultural adaptation, coping strategies, and preparedness for international study. Interviews were conducted online via Zoom, based on respondents' availability. Each interview lasted approximately 30 to 60 minutes and was audio-recorded with participants' consent. Follow-up communication through Facebook Messenger was used solely to clarify interview responses and obtain additional information when necessary, and was not treated as a primary data collection method. Email communication was used exclusively for obtaining informed consent and coordinating participation. This format ensured coverage of the key research questions while allowing emergent ideas and insights to surface naturally during conversations. The approach proved especially effective for international participants across time zones, enabling thoughtful, detailed responses without rigid scheduling constraints.

## **Ethical Considerations**

This study adhered to standard ethical protocols. Participants provided informed written consent through email and Facebook Messenger, with additional confirmation obtained during the Zoom interview when necessary, and were explicitly notified of their right to withdraw at any time without consequences. All data were anonymized using pseudonyms to protect participants' identities and were stored securely to ensure confidentiality and data protection.

## **Data Analysis**

This study employed reflexive thematic analysis following the framework of Braun & Clarke (2022) to systematically analyze qualitative data derived from semi-structured interviews and follow-up communications conducted via Zoom. Follow-up communication through Facebook Messenger was used only for clarification purposes and was not included as a primary data source in the analysis. The analysis followed contemporary qualitative standards (Byrne, 2022), the responses were carefully reviewed to achieve data familiarization. Initial codes were generated inductively, allowing patterns of meaning to ensure coherence and alignment with the dataset. These codes focused on key areas such as socio-cultural challenges, academic differences, motivations, and support systems, and were subsequently grouped into themes through iterative comparison. To ensure rigor, peer debriefing (Nowell et al., 2017) and member checking (Birt et al., 2016) were employed. Themes were then interpreted in relation to the research questions and substantiated with relevant literature from 2015 to 2026 to strengthen credibility and contextual depth.

## **RESULTS AND DISCUSSION**

### **On the Students Motivation and Decision to Study Abroad**

#### **Emerging Theme: Bridging Local Limitations and Global Opportunities.**

The decision of Filipino students to pursue advanced degrees abroad reflects a strategic response to perceived limitations in local educational systems. Most of the respondents consistently cited push factors such as the absence of specialized programs and limited access to advanced laboratory infrastructure. Respondent 1 noted the availability of a “unique PhD program, not offered in the Philippines,” while others emphasized constraints such as outdated equipment, insufficient laboratory infrastructure, and bureaucratic inefficiencies that delay academic progress (Respondents 2, 5, 6, 9, 10, 11, 12, 13). These observations are consistent with prior research, including David et al. (2020) on structural limitations in developing countries and Orbeta et al. (2019) highlighted that Filipino students often migrate academically due to Philippine higher education gaps specialization and research capacity. Simultaneously, many respondents viewed international credentials as vital for career advancement, tenure, and competitiveness. Intrinsically, several sought personal growth, independence, and global exposure, with Respondents 3, 4, 7, and 12 emphasizing the chance to “step out of their comfort zone” and gain a “worldwide perspective” (Brooks & Waters, 2021). These findings suggest that the decision to study abroad is both pragmatic and aspirational, positioning international education as means of bridging local constraints with global opportunities.

### **On the Encountering Emotional and Socio-Cultural Challenges in the Process of Adapting to a Foreign Environment**

#### **Emerging Theme: Cultural Adaptation and Emotional Adjustment.**

The research highlights the profound emotional and socio-cultural challenges faced by Filipino students abroad, extending far beyond academic adjustment to shape their holistic experience. Most of the respondents described feelings of homesickness and emotional distress from family separation and cultural disconnection; Respondent 7 described “being away from family... is emotionally challenging,” while Respondent 3 conveyed a “strong sense of homesickness... missing familiar food, traditions, and the overall sense of belonging” (Datu et al., 2021). Language barriers also emerged as a recurring challenge, particularly in non-English-speaking contexts.

For instance, Respondent 2 noted “differences in accent can make communication difficult” and Respondent 6 feeling “alienated” by unfamiliar social norms. Such challenges resonate with Andrade (2020), who emphasized that language proficiency and cultural familiarity are critical factors influencing academic success and social integration among international students and Wu et al. (2021) found that students studying in culturally distant environments often experience communication anxiety and identity tension, which can hinder participation and confidence.

Cultural navigation demands mastery of unwritten social rules diverging from Filipino practices, as Respondent 2 illustrated through the need to learn gestures of respect, adapt social behaviors, and heed cultural taboos—echoing Berry’s (2019) Acculturation Theory, frames cross-cultural transitions as ongoing negotiations between heritage identity and host culture adaptation. Subtle biases and stereotypes compound these difficulties; Respondent 8 shared encountered “biases and preconceived notions... in Europe,” although these perceptions were often challenged once their academic competence was recognized, consistent with Lee and Rice (2019) on discrimination’s toll on belonging and confidence among international students. Collectively, these experiences portray international education as a transformative journey demanding emotional resilience and intercultural negotiation, profoundly molding the global Filipino scholar.

### **On the Comparative Academic Environments as a Lens for Understanding Differences in Educational Quality, Resources, and Learning Experiences.**

#### **Emerging Theme: Addressing the Instrumentation and Confidence Gap.**

This study uncovers stark contrasts between Philippine and foreign academic environments, particularly in curriculum structure, research orientation, and laboratory resources, as articulated by respondents. Several respondents characterized the Philippine chemistry curriculum as highly generalist and theory-driven, akin to undergraduate training with excessive requirements and deadlines. For instance, respondent 6 exemplified this as “highly generalist... similar to undergraduate training,” with “numerous requirements and deadlines that can feel excessive” (Respondents 2, 11, 12). In contrast, foreign programs were lauded for their specialization and research focus, enabling deeper disciplinary engagement, a distinction echoed by Altbach and de Wit (2020) on developed systems’ emphasis on research productivity. Compounding this, respondents decried limited access to laboratory equipment and research resources in the Philippines, causing delays and modification in research work, consistent with David and Ducanes (2020), who emphasize that inadequate research funding and infrastructure remain key challenges in Philippine higher education.

Despite robust theoretical foundations affirmed by respondents (2, 7, 8, 9, 10, 11, 12, 13), a skills gap in laboratory competence—especially advanced instrumentation and data analysis—emerged, signaling insufficient hands-on exposure in local undergraduate programs (Bernardo, 2019). Notably, most respondents expressed intellectual confidence, with Respondent 8 asserting they “did not feel inferior” and possessed a foundation “well enough to compete at a global level.” Yet, a confidence gap persisted among few respondents, fueled by institutional prestige disparities rather than ability (Tran, 2021). Ultimately, these structural divergences underscore the need for Philippine investments in infrastructure, curriculum reform, and experiential training to close the instrumentation gap and cultivate globally competitive scientists.

### **On the Adaptation Strategies and Support Systems as Mechanisms for Navigating and Thriving in a Foreign Academic Environment.**

#### **Emerging Theme: Cultivating Strategic Resilience through Community and Mentorship.**

The findings of this study highlighted that Filipino students abroad rely heavily on social, emotional, and institutional support systems to cope with the challenges of international mobility. For instance, several respondents relied on Filipino communities abroad for a “sense of belonging”, native-language communication, and guidance through academic and administrative hurdles. This aligns with social capital theory (Sawir et al., 2020), which explains reduced acculturative stress among international students. Additionally, supportive advisers’ play a key role in academic progress and emotional well-being. Respondent 2 noted that selecting the

right supervisor is “critical” to the overall graduate experience. This aligns with the findings of Curtin et al. (2021), who identified supervisory relationships as a major determinant of graduate student satisfaction, retention, and success.

Family ties endured transnationally, sustaining many participants through constant communication to alleviate stress, per Datu et al. (2021) found that family support significantly contributes to psychological well-being and resilience among Filipino students. Personal coping encompassed self-care via maintaining routines, recreation, or finding companionship through pets, and digital tools like AI to surmount language barriers and daily tasks (Glass et al., 2015). Proactive integration into local networks further exemplified active coping (Lazarus & Folkman, as cited in Zhang & Goodson, 2021). Collectively, these interwoven strategies; community, mentorship, family, and adaptive mechanisms interact to sustain well-being and academic success.

## **On Shaping Professional Identity and Future Aspirations Through International Academic Experiences**

### **Emerging Theme: Transformative Development and the "Return Mindset"**

The research highlighted that pursuing advanced degrees abroad leads to a profound transformation in Filipino students' personal, academic, and professional identities forged through advanced degrees abroad, yielding independence, global competence, and a purpose-oriented commitment to national contribution. The data showed many of respondents reported significant personal growth in independence, adaptability, and resilience, framing the experience as a “transformative journey” (Respondent 5) that “pushes you to your limit,” (Respondent 2). As per Transformative Learning Theory, which posits that exposure to unfamiliar environments leads to shifts in perspectives and identity (Kitchenham, 2020). Academic enhancements encompassing research skills, laboratory techniques, and critical thinking via advanced instrumentation and diverse research practices enabled them to gain expertise that was previously limited in their home country. This supports the findings of Marginson (2022), who emphasized that international education enhances human capital and research capability through exposure to global knowledge systems. Intercultural competence and broadened worldviews emerged as many respondents expressed that interacting with diverse cultures broadened their worldview and deepened their appreciation of both global and Filipino identities. Consistent with UNESCO (2023), which highlights that international education fosters global citizenship and intercultural understanding. Several respondents exhibited a "return mindset," aspiring to contribute as per Respondent 9: "Lagi't lagi, para sa bayan" and to serve as "good ambassador of the Philippines" through education reform, research advancement, and mentorship, evoking brain circulation (Asis & Battistella, 2021; Beine et al., 2020). Several respondents also demonstrated critical awareness of Philippine systemic flaws; like inadequate infrastructure and academic gatekeeping, spurred calls to "displace unqualified gatekeepers" and advocate for better governance and investment in education. Additionally, respondents emphasized the importance of representing Filipino identity positively in global spaces. Collectively, the transformative development thus encapsulates a journey of rising from challenges, emerging as globally competent individuals, and ultimately seeking to contribute to the advancement of their home country.

## **LIMITATIONS OF THE STUDY**

This study has several limitations that should be considered when interpreting the findings. First, the sample size was limited to thirteen participants, which is appropriate for phenomenological research but may restrict the transferability of the results to a broader population. Second, participants were drawn primarily from Southeast Asia and Europe, which may not fully represent the diversity of experiences in other international contexts. Third, the study relied on self-reported data collected through virtual interviews. Fourth, the focus on Filipino chemistry students limits the applicability of the findings to other academic disciplines with different educational structures and requirements. Despite these limitations, the study provides valuable insights into the lived experiences of Filipino students in international graduate education. Future research may expand the sample, include participants from a wider range of countries and disciplines, and incorporate additional perspectives to further strengthen and validate these findings.

## CONCLUSION

This study reveals that the lived experiences of Filipino students pursuing advanced degrees abroad are shaped by a mix of structural constraints, socio-cultural challenges, adaptive strategies, and transformative growth, positioning international education as both a response to local limitations and a pathway for global competence. Driven by gaps in specialization, research infrastructure, and academic opportunities in the Philippines, students make a strategic and transformative academic decision that exposes them to significant emotional and cultural adjustments, including homesickness, language barriers, and identity negotiation. Despite these challenges, they demonstrate resilience, supported by Filipino communities, strong family ties, and supportive mentors, which collectively sustain their well-being and academic persistence. The contrast between Philippine and foreign academic environments further highlights an “instrumentation gap” that affects confidence rather than capability, as students possess strong theoretical foundations but limited access to advanced research resources. Ultimately, international education fosters substantial personal, academic, and intercultural development, resulting in transformative growth, where students emerge as independent and globally competent individuals with a renewed sense of purpose. Notably, this transformation is anchored in a strong “return mindset,” reflecting their desire to contribute to national development, improve local systems, and represent Filipino identity on the global stage. This study contributes to the limited body of literature on discipline-specific international student experiences by highlighting the role of laboratory preparedness and structural inequalities in shaping academic adaptation. Thus, the experiences of Filipino scholars abroad extend beyond individual advancement, representing a broader contribution to national development through the integration of global knowledge and a deep and enduring commitment to “para sa bayan.”

## RECOMMENDATION

Based on the findings, Philippine higher education institutions, policymakers, and academic stakeholders should consider implementing targeted reforms to strengthen global competitiveness and student preparedness for international graduate studies. Universities should enhance curriculum design by shifting from a predominantly theory-driven and generalist approach to a more research-oriented and specialized framework, integrating hands-on laboratory training, advanced instrumentation exposure, and data analysis competencies at the undergraduate level. Increased government and institutional investment in research infrastructure, laboratory facilities, and funding support is also essential to address the identified “instrumentation gap” and reduce the need for students to seek such resources abroad. Alongside this, institutions should establish structured mentorship programs, international linkages, and exchange opportunities to provide early exposure to global academic environments and intercultural readiness. To support students’ well-being, both local and host institutions are encouraged to strengthen academic advising, peer support networks, and culturally responsive services that help students navigate emotional and socio-cultural challenges. Finally, policies that promote brain circulation rather than brain drain should be prioritized by creating incentives for returning scholars, fostering research collaboration, and ensuring transparent, merit-based academic systems. These recommendations collectively aim to strengthen the global competitiveness of Filipino students while ensuring that international education contributes meaningfully to national development.

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