

Experiencing Global Perspectives: An Exploration Of Science Education In An International Baccalaureate School In Thailand

Daphne S. Nuñez¹, Dr. Arlene A. Justo¹
daphnie.nunez@perpetual.edu.ph

1 – University of Perpetual Help System DALTA

Publication Date: August 11, 2026

DOI: 10.5281/zenodo.21880159

Abstract

This study employed a qualitative descriptive approach to examine how science teachers' dispositions, resources, and institutional contexts shape their pedagogical practices in an International Baccalaureate (IB) school in Thailand. Conducted during the 2026 academic year at Udon Thani International School (UDIS), the study involved seven foreign science teachers who voluntarily participated in semi-structured interviews at their preferred schedules. Anchored on Bourdieu's Theory of Practice, the study explored how habitus, capital, and field interact to influence teachers' instructional decisions and professional experiences. The findings revealed that teachers continuously negotiated their cultural backgrounds, professional experiences, available resources, and institutional expectations while implementing inquiry-based science instruction. Teachers described drawing on their diverse international experiences and professional networks to adapt their pedagogical approaches, leveraging cultural, social, and linguistic capital to address the unique characteristics of their students. They also faced systemic and cultural challenges, including balancing safety regulations with experimental learning and addressing students' cultural attitudes toward risk-taking and public error. Despite these challenges, the IB framework promoted teacher autonomy and student-centered learning, with teachers exercising pedagogical freedom to design responsive, inquiry-driven lessons. The study concluded that the successful implementation of inquiry-based science education depends not only on teachers' competencies but also on sustained institutional support through adequate facilities, technological resources, collaborative professional networks, and culturally responsive learning environments to achieve high-quality and inclusive science education aligned with Sustainable Development Goal 4. A four-phase professional development implementation plan was proposed to strengthen IB teaching practices through targeted training, collaborative communities of practice, peer observation, and continuous evaluation, ensuring the effective embedding and sustainability of IB principles within the school community.

Keywords: baccalaureate school, global perspectives, science education

1. Introduction

The International Baccalaureate (IB) organization, established in 1968, has evolved into a globally recognized framework for international education, emphasizing holistic development, critical thinking, and intercultural understanding. With over 5,800 IB World Schools across 160 countries as of 2025, the program's core philosophy revolves around fostering "international-mindedness," where learners engage with diverse perspectives to address real-world challenges. In science education, the IB curriculum, spanning the Primary Years Programme (PYP), Middle Years Programme (MYP), and Diploma Programme (DP), integrates scientific inquiry with global issues, promoting conceptual understanding over rote memorization.

In Thailand, the expanding international education sector hosts 38 IB World Schools, reflecting a 15% growth in IB authorizations since 2020. This aligns with national education reforms under the Thailand 4.0 initiative, which prioritizes STEM competencies. However, Thai international schools, particularly in non-metropolitan areas like the Isan region, navigate unique tensions: blending Western-centric IB standards with local cultural norms while addressing resource constraints in science laboratories and teacher training. Udon Thani International School (UDIS), a fully authorized three-programme IB World School since 2015, exemplifies this dynamic, serving over 400 learners from 30 nationalities.

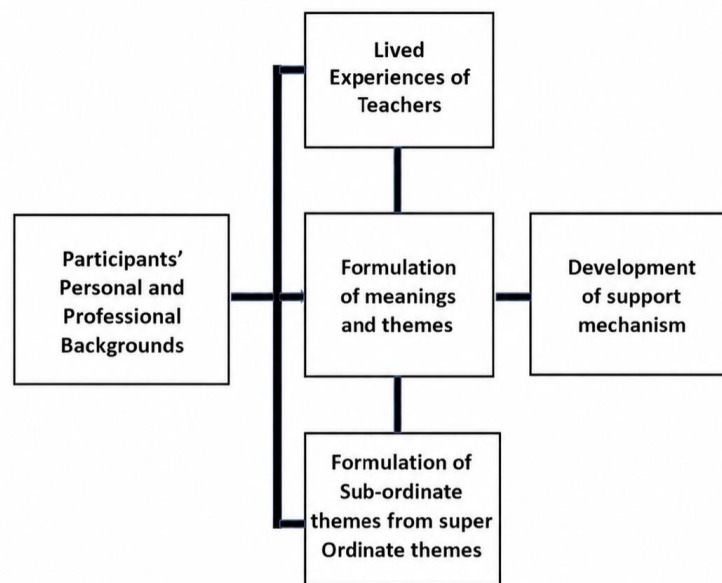


Figure 1. Conceptual Paradigm of the Study

The current study was anchored on Bourdieu's theory of practice, a sociological framework that investigates the dynamic interaction between social institutions and individual agency. Employing Bourdieu's framework, this study analyzed how teachers' habits, shaped by

their prior educational preparation, cultural background, and professional experiences, influences their approach to teaching science in Thailand's multicultural and multinational contexts.

Statement of the Problem

This study aims to determine how Science teachers in an International Baccalaureate (IB) School in Thailand make meaning of their significant teaching experiences, and what implications do these experiences have for the development of support mechanisms and strategies?

Specifically, this study sought to address the following specific corollary questions:

1. How do the participants describe their most significant experience in teaching Science in an International Baccalaureate School in Thailand?
2. What meanings may be formulated based on the significant experiences of the participants?
3. What themes may be formulated based on the formulated meanings of significant experiences of the participants?
4. What subordinate themes emerged from each of the predetermined super-ordinate themes?
5. Based on the findings of the study, what support mechanisms and strategies may be developed?

2. Materials and Methods

The current study was conducted using a qualitative interpretative research approach. This was a systematic way of analyzing social phenomena based on the meanings, experiences, and viewpoints of science teacher participants in UDIS. Before conducting the study, a permit to conduct the study was acquired from the school managers. It stresses data interpretation, which was typically based on participants' contexts and lifeworlds, in order to develop meaningful insights. The study explored how teachers' backgrounds and experiences shape their dispositions and actions. The research design is interpretative in nature, and it focuses to effectively investigate the intricate ways in which social fields, capitals (cultural, social, and economic), and habits influence individuals' actions and perceptions in this context, science teaching practices at Udon Thani International School.

Data generation in a qualitative interpretative research design investigating science education in an Udon Thani International School (UDIS) in Thailand focused on methodologies that produce rich, detailed, and contextualized insights into participants' experiences and

perspectives. Data collection primarily relied on in-depth, semi-structured interviews that encouraged participants to share their personal narratives, feelings, and reflections about their instructional practices, intercultural interactions, curriculum adaptations, and perceptions of student engagement. To encourage elaborate narratives, open-ended questions were used. Data recording through audio recording was implemented with the participant's consent to capture the exact words, tone, and emotion expressed during interviews.

The self-developed interview guide was subjected to expert evaluation, with two subject matter experts selected from a poll of professors at the University of Perpetual Help System-DALTA, to confirm its reliability, trustworthiness, and relevance to the study, and one school manager from the school where the study was conducted. Evaluation of the instrument for content validity, clarity, and relevance to the study environment aided in the refinement of the questions or prompts, ensuring that they accurately capture the phenomenon under inquiry. The interviews were conducted online via video conferencing platforms and audio-recorded with the participants' permission. Each interview lasted approximately 15 to 20 minutes, during which the researcher asked open-ended questions and used probes to elicit rich, detailed responses.

3. Results

Analysis of data from semi-structured interviews with seven international science educators at Udon Thani International School (UDIS), Thailand, revealed significant findings organized according to the research questions. To preserve confidentiality, participants were anonymized as Teacher 1 through Teacher 7.

Teacher 1, who had taught in Saudi Arabia, Germany, Dubai, and Thailand, emphasized the IB requirement for practical work that pushed them toward hands-on laboratory instruction. They identified student risk-aversion as a significant challenge and described enforcing laboratory safety protocols requiring closed-toed shoes, which challenged the local Thai practice of removing footwear before entering classrooms. Teacher 1 highlighted infrastructure investments in Vernier probes that expanded experimental capabilities and collaboration with a laboratory technician to minimize material waste.

Teacher 2, originally from Australia, described an adaptive habitus shaped by experiences in both resource-abundant and resource-constrained environments. They emphasized the importance of not letting students "lose face," describing how they use indirect affirmations to provide culturally sensitive feedback. Teacher 2 also described mobilizing intra-school social capital by building networks with laboratory technicians and community members to deliver complex science activities.

Teacher 3, from Germany with experience in France and the former German Democratic Republic, brought a highly structured yet empathetic approach shaped by caregiving experience with Alzheimer's patients. They described adapting abstract concepts for the tropical Thai climate using pictures, travel narratives, and books, and emphasized finding experts in areas

where they lacked expertise, researching alongside students and specialists. Teacher 3 noted the importance of adapting sensitive topics like puberty to remain within societal norms.

Teacher 4, from the United States, described an inhibited primary science habitus rooted in an early education that prioritized literacy and numeracy over scientific inquiry, admitting reluctance to teach science due to lack of understanding. To overcome this anxiety, they utilized hands-on experiments and drew on secondary science specialists to fill content gaps, emphasizing prioritizing hands-on experiments over terminology for English as an Additional Language (EAL) learners. Teacher 4 noted the limitations of geographic isolation from professional development hubs, relying primarily on online professional development.

Teacher 5, from India, described a transition away from a rigid, assessment-heavy educational background toward the flexible inquiry-based model of the IB program. They highlighted the linguistic capital advantage gained through English-medium instruction and expressed strong appreciation for the flexibility and agency provided by the IB framework. Teacher 5 described independently crowdsourcing learning engagements through LinkedIn and YouTube to compensate for local professional development limitations.

Teacher 6, with a background in environmental science and prior teaching experience in Singapore and Vietnam, described a strong commitment to inquiry-based learning and fieldwork. They noted that Thai cultural influences make some students hesitant to speak up publicly due to fear of making mistakes and emphasized building a classroom culture where mistakes are normalized. Teacher 6 identified structural friction between the extended time required for authentic student-led investigations and fixed assessment deadlines and reporting periods.

Teacher 7, from the United Kingdom with experience in UK public schools and a Malaysian international school, described a background in physics and engineering that naturally oriented their teaching toward problem-solving and experimentation. They structured lessons around small-group discussions to build student confidence before transitioning to whole-class debates. Teacher 7 emphasized that science teaching depends heavily on laboratory equipment and digital tools and noted that schools sometimes underestimate the importance of teacher training for innovation.

4. Discussion

Analysis revealed super-ordinate themes emerging from participants' significant experiences. Teacher 1 exemplified Institutional Tension through enforcing non-negotiable lab safety over local traditions and overcoming student risk-aversion. Teacher 2 demonstrated Capital Mobilization through axiological accommodation of face-saving dynamics and intra-school social capital mobilization. Teacher 3 exhibited Socio-Cultural Adaptation through creative supplementation for tropical realities and respecting societal boundaries on anatomical topics. Teacher 4 showed Habitus Transmutation through reconciling content anxiety via experiential self-efficacy and identity re-construction from worst subject to competency. Teacher

5 demonstrated Pedagogical Autonomy through shedding rigid assessment-heavy baselines and institutional agency. Teacher 6 experienced Structural Friction through balancing inductive exploration with rigid administrative deadlines. Teacher 7 utilized Strategic Scaffolding through scaffolding opinion sharing via small-group interactions and transitioning from monocultural lecturing to inquiry.

The lived experiences of international science educators at UDIS revealed a complex, dynamic relationship between their personal backgrounds (*habitus*), available resources (*capital*), and the unique environment of the international school (*field*). Teachers demonstrated that their choices and practices were shaped by ongoing negotiations between inherited traditions and daily classroom realities. The transition into an international school environment highlighted variations in cultural expectations, requiring teachers to manage administrative and physical friction. Teachers demonstrated capital mobilization by adjusting communication to protect student dignity within the Asian educational context, where public corrections can trigger the "losing face" phenomenon. Teachers regularly adapted lessons to ensure material was meaningful and relevant to students in Thailand, demonstrating socio-cultural adaptation where abstract concepts were translated to match local environmental and societal realities. Some teachers demonstrated profound *habitus* transmutation, actively reshaping long-standing anxieties through hands-on activities and collaboration with specialists. Others exercised significant pedagogical autonomy, transitioning from rigid, assessment-heavy backgrounds toward the flexible IB framework. Teachers also experienced structural friction, balancing the unpredictable pace of student-led discovery with fixed institutional timelines, while others utilized strategic scaffolding to help students navigate cultural aversions to risk-taking and public mistakes.

Based on the findings, an Implementation Plan for Professional Development & Training at Udon Thani International School was developed with the goal of strengthening IB teaching practices through targeted professional development. The plan consisted of four phases: Phase 1: Planning and Needs Assessment (Month 1-2) involving staff needs surveys, establishment of a PD Committee, and engagement with the IB Asia-Pacific Regional Office; Phase 2: Foundations and Orientation (Month 3-4) including IB Orientation Workshops and subject-specific IB Training; Phase 3: Skill Development and Practice (Month 5-8) encompassing Assessment and Reporting Workshops, Inquiry-based Teaching Strategies workshops, and Leadership and IB Coordinator Training; and Phase 4: Reflection, Collaboration, and Continuous Improvement (Month 9-12) including Peer Observation and Feedback, Communities of Practice, and Feedback and Evaluation Sessions. Resources included partnerships with IB Asia-Pacific, funding from school budget or external grants, technology utilization, and incorporation of Thai culture into training. Monitoring and evaluation were planned through regular review meetings, feedback surveys, tracking of teacher participation, and use of student learning outcomes as indicators of success.

5. Conclusion

This qualitative study explored the lived experiences of international science educators at an International Baccalaureate school in Thailand, investigating how their personal backgrounds, available resources, and institutional contexts shaped their pedagogical practices. The findings revealed that teachers continuously negotiated their cultural dispositions, professional experiences, and access to various forms of capital while implementing inquiry-based science instruction within the IB framework. Teachers demonstrated that their pedagogical decisions were rarely isolated actions but rather ongoing negotiations between inherited traditions and daily classroom realities, influenced by their habitus, mobilization of cultural, social, and linguistic capital, and navigation of institutional fields characterized by IB program requirements, school policies, and Thai cultural norms.

The study concluded that the successful implementation of inquiry-based science education depends not only on teachers' individual competencies and adaptability but also on sustained institutional support through adequate laboratory facilities, technological resources, collaborative professional networks, ongoing professional development, and culturally responsive learning environments that respect local cultural values while maintaining international educational standards. The proposed Implementation Plan for Professional Development & Training provides a structured, context-sensitive framework for strengthening IB teaching practices through targeted training, collaborative communities of practice, peer observation, and continuous evaluation, ensuring the effective embedding and sustainability of IB principles within the school community and ultimately contributing to high-quality, inclusive science education aligned with Sustainable Development Goal 4.

Based on these conclusions, the following recommendations are proposed: Teachers should regularly reflect on teaching practices and student outcomes to refine strategies, ensuring alignment with IB standards and responsiveness to student needs. School leaders of IB schools should provide ongoing professional development opportunities, resources, and mentorship to empower teachers to implement IB practices confidently. Stakeholders including parents, community members, and education authorities should assist in providing necessary resources, funding, and professional development opportunities that enable schools to sustain high-quality IB education. Future researchers are recommended to conduct comparative qualitative or mixed-methods studies analyzing how different international school curriculum frameworks influence the structural friction experienced by science educators, expand the geographic scope of this research design beyond UDIS to contrast rural international settings with major metropolitan hubs, and explore how the specific national, political, or cultural backgrounds of expatriate teachers correlate with their strategies for pedagogical adaptation and innovation.

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