

Global Competence in International Baccalaureate Programs: A Systematic Review of Empirical Evidence (2010–2025)

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ABSTRACT

Research on the International Baccalaureate (IB) and global competence has expanded; however, prior studies remain fragmented across programme levels and national contexts, and no systematic synthesis has clearly mapped which specific IB components are empirically associated with global competence outcomes and under what contextual conditions, highlighting the need for a systematic literature review. This review addresses two questions: which IB components and practices are associated with global competence development, and how the evidence varies across programme levels and national contexts. A Systematic Literature Review was conducted following PRISMA 2020 guidelines using two databases, Scopus and ERIC, complemented by manual reference searches. A total of 35 studies published between 2010 and 2025 met the inclusion criteria, representing Europe and the United Kingdom (n=9), Australia and New Zealand (n=6), East and Southeast Asia (n=8), multinational contexts (n=7), and five Global South settings. Twenty-four studies were empirical, predominantly qualitative case studies, survey-based quantitative research, and mixed methods, while eleven were conceptual or review-based. Findings suggest that the Learner Profile, inquiry-based pedagogy, Approaches to Learning, and Diploma Programme components such as Theory of Knowledge and Creativity, Activity, Service are generally associated with cognitive, dispositional, and ethical dimensions of global competence. Evidence is strongest at the Diploma Programme level, while the Career-related Programme and lower-income contexts remain under-researched. Variations in outcomes are frequently mediated by school leadership, teacher professional development, and institutional culture. Limitations include English-language restriction and database scope. This review contributes a thematic framework mapping core IB practices to global competence outcomes and outlines a longitudinal and comparative research agenda.

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1. INTRODUCTION

The rapid transformations in global social, economic, and cultural life have increased the policy and research emphasis on global competence, the ability of young people to navigate intercultural encounters, interpret global issues, and act responsibly in complex societies. Beyond academic achievement, many

education systems now treat cross-context adaptability, collaboration, and socio-ethical capacities as essential outcomes for twenty-first-century readiness (Di Battista et al., 2023). In this context, the International Baccalaureate (IB) occupies a strategic position as an international curriculum framework that combines academic rigor with a stated commitment to holistic learner development. Reflecting its global reach, IB was implemented in more than 5,600 schools across over 160 countries as of 2024 (Organization International Baccalaureate, 2024). Alongside this expansion, research on IB has grown rapidly across program levels and national settings, making systematic synthesis increasingly necessary.

In this review, global competence is conceptualised as a multidimensional construct encompassing knowledge, skills, attitudes, and values that enable individuals to understand global and intercultural issues, critically examine diverse perspectives, interact effectively across cultures, and act responsibly within interconnected societies. This framing aligns with UNESCO's global competence and global citizenship orientation (Education, 2015). And with broader twenty-first-century competency frameworks that foreground critical thinking, collaboration, creativity, and social responsibility, such as the OECD Learning Compass 2030 discussed by Shek et al. (2025). This conceptual lens fits IB because the IB mission and curriculum architecture explicitly emphasise international-mindedness and dispositions oriented to perspective-taking, reflection, and principled action.

A distinctive feature of IB is the Learner Profile, a set of attributes such as inquirer, thinker, communicator, principled, open-minded, caring, risk-taker, balanced, and reflective that functions as a normative framework linking academic learning to dispositions associated with global competence. The Learner Profile is often discussed as a curricular through-line that shapes pedagogical expectations and assessment cultures and may support outcomes such as intercultural understanding, social responsibility, and ethical orientation (Billig, 2017; Ponce & Intriago, 2022). In addition to this dispositional core, IB learning practices are frequently characterised by inquiry-oriented and reflective pedagogies intended to build transferable competencies across disciplines and contexts.

At the program level, particularly within the Diploma Program (DP), IB includes components that can plausibly operationalize global competence through reflective and experiential learning. Creativity, Activity, and Service (CAS) requires students to plan and participate in experiences beyond the classroom involving collaboration, sustained engagement, and structured reflection, conditions that may support interpersonal competence, civic awareness, and ethical action in real-world settings (Hayden & Mcintosh, 2018; Kosiosek & Dobińska, 2025). Theory of Knowledge (TOK) and interdisciplinary learning tasks can further cultivate epistemic reflection and perspective consciousness, which are frequently treated as foundations for global competence (Shukur, 2024).

Empirical and conceptual scholarship also suggests that IB pedagogies, such as inquiry-based learning and dialogic classroom practices, may be associated with the development of critical thinking, collaboration, creativity, and communication. Inquiry-based learning encourages students to evaluate information and consider multiple perspectives, while cross-cultural collaboration can strengthen dialogic skills and the synthesis of ideas through interaction and negotiation (Dickson, Perry, & Ledger, 2018; Hacking et al., 2018). However, these proposed links are not uniformly evidenced across studies, contexts, or program levels. Therefore, careful synthesis is required to clarify what the literature indicates, where evidence is strongest, and what remains uncertain.

Crucially, IB implementation is also situated within debates and tensions that shape how global competence is enacted. Research highlights concerns about equity and access, including program costs, language demands, and stratification, as well as critiques regarding the potential dominance of Western perspectives in international curricula, prompting calls for decentring the West and strengthening culturally responsive practice (Poonoosamy, 2018; Resnik, 2012). At the same time, localisation of IB requires negotiation between global standards and local values, teacher readiness, school leadership, and national policy constraints (Chernoff, 2022; Metli & Lane, 2020). These tensions position IB as both strategic and contested within global education, reinforcing the need to examine not only outcomes but also the contextual conditions under which outcomes vary.

Although the literature on IB continues to expand across diverse contexts and program levels, including the Primary Years Program (PYP), Middle Years Program (MYP), Diploma Program (DP), and Career-related Program (CP), existing studies remain dispersed and context-specific. To date, relatively few systematic literature reviews have comprehensively synthesized cross-national and cross-program empirical evidence regarding how IB components and practices are associated with the development of students' global competence.

To maintain conceptual consistency, this review treats constructs frequently discussed in the IB literature, such as teacher professional development, school leadership, and institutional culture, as contextual mediators or moderators that can strengthen or weaken implementation and global competence-related outcomes. Topics such as inclusion and edupreneurship are considered only when they are explicitly connected to IB implementation capacity, including resourcing, participation conditions, and innovation infrastructures, and to reported competence-related outcomes, rather than treated as standalone outcome domains.

Despite the growth of IB scholarship, evidence linking specific IB components and practices to global competence outcomes across program levels, including PYP, MYP, DP, and CP, and across diverse national contexts, remains dispersed and under-synthesized. This limitation constrains cumulative conclusions and evidence-informed implementation. Therefore, a systematic literature review is needed.

Accordingly, this study conducts a systematic literature review to map IB components and practices associated with global competence development, synthesize empirical evidence across contexts and program levels, and identify contextual mediators shaping variations in reported outcomes.

RQ1: What core components and practices within the International Baccalaureate program are identified in the educational literature as being associated with the development of students' global competence?

RQ2: How is empirical evidence regarding the development of global competence within the International Baccalaureate program reported across different national contexts and program levels, including PYP, MYP, DP, and CP?

RQ3: What contextual factors, such as school leadership, teacher professional development, and institutional context, are discussed in the literature as shaping variations in global competence development outcomes in IB implementation?

This set of research questions addresses fragmentation in prior work by synthesizing findings across contexts and program levels, enabling a more comprehensive and critical understanding of how IB may foster students' global competence and under what conditions outcomes are most likely to emerge.

2. METHODS

This study employed a Systematic Literature Review (SLR) design and was reported in accordance with the PRISMA 2020 guidelines (Page et al., 2021). The SLR approach was adopted to systematically identify, screen, appraise, and synthesize empirical and conceptual literature related to the International Baccalaureate (IB) and the development of students' global competence. The review aimed to map the IB components and practices examined in the literature, the distribution of evidence across program levels and educational contexts, and the contextual factors acting as mediating or moderating influences on reported outcomes. An a priori protocol was developed prior to the search process to ensure consistency in the search strategy, eligibility criteria, quality appraisal procedures, and synthesis plan.

The literature search was conducted in two primary bibliographic databases, Scopus and ERIC, and was complemented by backward citation searching of relevant reference lists. The search strategy was designed to capture terms associated with the International Baccalaureate program and global competence constructs, including global competence, international mindedness, intercultural competence, and global citizenship, together with core IB components such as Learner Profile, ATL, TOK, CAS, and inquiry. The search was limited to peer-reviewed journal articles published in English

between 2010 and 2025. The full database-specific search strings and applied filters are presented in Table 1.

Table 1. Database Search Strings and Filters

Database	Fields Searched	Exact Search String	Filters Applied
Scopus	TITLE-ABS-KEY	("International Baccalaureate" OR "IB" OR "IB programme" OR "IB curriculum" OR "IB World School") AND ("global competence" OR "international mindedness" OR "intercultural competence" OR "global citizenship") AND (student* OR curriculum OR pedagogy OR learning OR "learner profile" OR ATL OR "approaches to learning" OR TOK OR "theory of knowledge" OR CAS OR "creativity activity service" OR inquiry)	Years: 2010–2025; Document type: Journal article; Language: English; Peer-reviewed
ERIC	Title/Abstract/Descriptors	("International Baccalaureate" OR "IB") AND ("global competence" OR "international mindedness" OR "intercultural competence" OR "global citizenship") AND (student* OR curriculum OR pedagogy OR learning OR "learner profile" OR "approaches to learning" OR TOK OR CAS OR inquiry)	Years: 2010–2025; Publication type: Journal articles; Language: English

Eligibility criteria were established to ensure the relevance and methodological adequacy of the included literature, as summarised in Table 2.

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Peer-reviewed journal articles	Conference proceedings, dissertations, book chapters, reports, and non-peer-reviewed publications
Published in English between 2010–2025	Studies outside the specified year range or language
Explicitly focused on IB programmes (PYP, MYP, DP, CP, or IB implementation)	Not specifically related to IB
Examined global competence constructs or IB practices linked to such outcomes	Did not address global competence or lacked sufficient methodological clarity

The study selection process followed the PRISMA 2020 framework until 35 studies met the inclusion criteria. The full selection flow is illustrated in Figure 1, and the numerical distribution at each stage is summarised in Table 3.

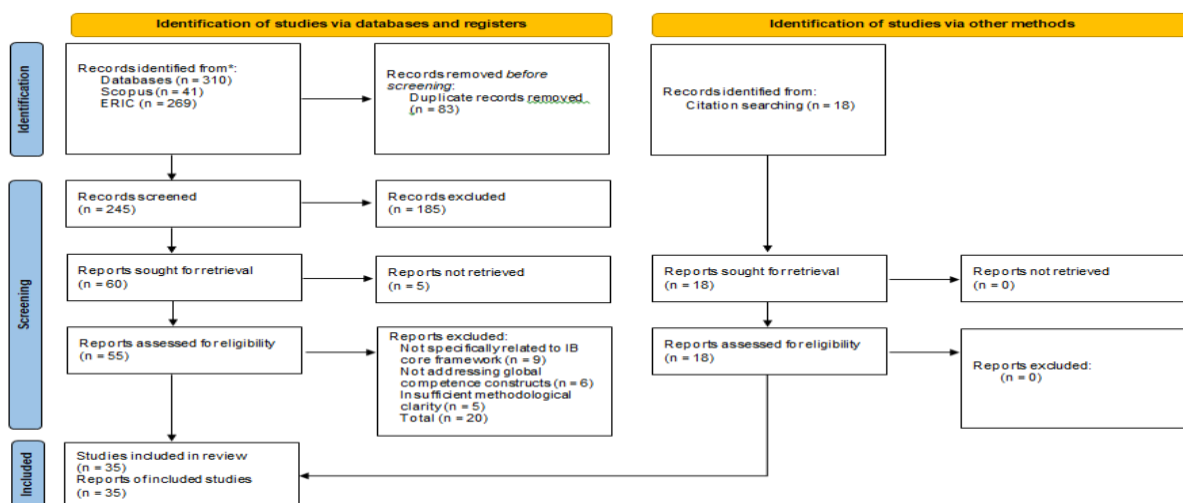


Figure 1. PRISMA 2020 flow diagram of the study selection process.

Table 3. Summary of Study Selection Process

PRISMA Stage	Count
Records identified from databases	310
Records identified through citation searching	18
Total records identified	328
Duplicate records removed	83
Records screened (title/abstract)	245
Records excluded	185
Reports sought for retrieval	60
Reports not retrieved	5
Full-text reports assessed for eligibility	55
Full-text reports excluded	20
Studies included in final synthesis	35

To minimize selection bias, title and abstract screening as well as full-text assessment were conducted independently by two reviewers using the same predefined inclusion and exclusion criteria. Inter-rater agreement was calculated using percentage agreement and Cohen's kappa coefficient. Any disagreements were resolved through discussion until a consensus was reached.

The methodological quality of included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal tools, adapted to each respective study design, including the JBI Checklist for Qualitative Research, the JBI Checklist for Analytical Cross-Sectional Studies, and the JBI Checklist for Quasi-Experimental Studies. Each study was evaluated based on the proportion of criteria met ("Yes/Met"), and a minimum eligibility threshold of $\geq 70\%$ was applied to ensure adequate methodological rigor and to minimize potential threats to validity. All studies included in the final synthesis met this threshold.

Data were extracted using a standardized form that captured bibliographic details (author and year), country or region and educational context, IB programme level (PYP, MYP, DP, or CP), research design and methods, participants or data sources, operationalization of the global competence construct, IB components or practices examined (such as the Learner Profile, inquiry-based pedagogy, Approaches to Learning, Theory of Knowledge, and Creativity, Activity, Service), key findings, and reported mediators or moderators including school leadership, teacher professional development, institutional culture, and policy or language context.

Data synthesis was conducted using a convergent integrated approach to combine qualitative and quantitative evidence at the interpretative level. Quantitative findings were transformed into qualitative summaries, such as outcome domains and direction of effects (supportive, neutral, or contradictory), and were integrated with qualitative and conceptual findings through thematic synthesis. Theme development followed a hybrid approach combining deductive codes aligned with the research questions and IB structural components, and inductive subthemes emerging from recurring patterns across included studies. To enhance transparency, an evidence matrix was developed to indicate the number of studies supporting each theme and their sources. Where relevant, simple directional counts were reported without implying causal certainty.

3. FINDINGS AND DISCUSSION

3.1. Findings

A total of 35 studies met the inclusion criteria and were analyzed in the final synthesis. These studies were published between 2010 and 2025, with a more noticeable increase in publication volume after 2018. Of the included studies, 24 were empirical investigations employing qualitative, quantitative, or mixed-methods approaches, while the remaining 11 were conceptual studies or

literature reviews. This composition indicates that scholarship on the International Baccalaureate (IB) and global competence has developed both theoretically and empirically.

In terms of program level distribution, the Diploma Program (DP) was the most dominant focus (14 studies), followed by multilevel or general IB studies (9 studies). The Middle Years Program (MYP) was examined in 6 studies, the Primary Years Program (PYP) in 4 studies, and the Career-related Program (CP) in 2 studies. Geographically, the studies were distributed across Europe and the United Kingdom (9 studies), Australia and New Zealand (6 studies), East and Southeast Asia (8 studies), and multinational or global contexts (7 studies). Only 5 studies explicitly represented contexts from developing countries or the Global South.

Regarding participant characteristics, the majority of empirical studies involved students as the primary subjects, particularly in research evaluating the impact of curriculum components such as Theory of Knowledge (TOK) and Creativity, Activity, and Service (CAS). Several studies focused on teachers and school leaders in relation to IB pedagogical implementation and leadership practices, while others relied on policy document analysis or curriculum framework analysis as primary data sources.

The complete characteristics of the included studies are presented in Table 4, and a summary of the main categorical distributions is provided in Table 5.

Table 4. Characteristics of Included Studies

Author(s) & Year	Country/Conte xt	IB Level	Study Type	Method	Participants	Main Focus
Billig (2017)	USA	DP	Empirical	Quantitative	Students	CAS & civic engagement
Bergeron & Rogers (2019)	Multinational	DP	Empirical	Qualitative	Students	Theory of Knowledge
Cole et al. (2015)	Australia	DP	Empirical	Quantitative	Students	Critical thinking
Ponce & Intriago (2022)	Ecuador	DP	Empirical	Quantitative	Students	IB impact on outcomes
Hayden et al. (2020)	Multinational	DP	Empirical	Longitudinal	Students	Global citizenship
Hatziconstantis & Kolympari (2016)	Europe	DP	Empirical	Mixed	Students	Service learning
Kamaruddin (2020)	Malaysia	General IB	Empirical	Qualitative	Students	Learner Profile
Kamaruddin & Matore (2021)	Malaysia	General IB	Empirical	Quantitative	Students	Learner Profile validation
Bores-García et al. (2023)	Europe	PYP	Review	Systematic Review	Documents	PYP implementation
Dix & Sniedze-Gregory (2020)	Australia	PYP	Empirical	Qualitative	Students	Wellbeing
Savage & Drake (2016)	Canada	PYP	Empirical	Qualitative	Teachers	Curriculum integration
Dickson et al. (2018)	Australia	Multilevel	Review	Literature Review	Mixed	IB impact
Dickson et al. (2021)	Australia	MYP	Empirical	Qualitative	Teachers	MYP challenges
Walker & Bunnell (2024)	UK	MYP	Empirical	Qualitative	Teachers	Implementation
Termaat (2024)	Europe	MYP	Conceptual	—	—	Metacognition
Wright & Keung (2025)	UK	MYP	Empirical	Qualitative	Students	Personal Project

Shukur (2024)	Iraq	Multilevel	Empirical	Qualitative	Students	Curriculum impact
Shukur (2025)	Multinational	Multilevel	Empirical	Qualitative	Teachers	Teacher perspectives
Whaley (2024)	UK	DP	Empirical	Qualitative	Teachers	Professional learning
Lubis et al. (2025)	Indonesia	Multilevel	Empirical	Quantitative	Teachers	Educator performance
Gardner-McTaggart (2019)	UK	Multilevel	Empirical	Qualitative	Leaders	Leadership
Calnin et al. (2018)	Multinational	Multilevel	Empirical	Qualitative	Leaders	School leadership
Hacking et al. (2018)	Multinational	Multilevel	Empirical	Quantitative	Students	International mindedness
Ferguson (2024)	Multinational	Multilevel	Empirical	Qualitative	Mixed	Interculturalism
Chernoff (2022)	Canada	Multilevel	Empirical	Qualitative	Documents	Localization
Resnik (2012)	Global	Multilevel	Conceptual	–	–	Globalization
Maire & Windle (2021)	Australia	DP	Empirical	Quantitative	Students	Inequality
Ida (2020)	Japan	Multilevel	Empirical	Policy analysis	Policy	Access
Hameed et al. (2025)	East Asia	Multilevel	Empirical	Policy analysis	Policy	Policy context
Hill (2012)	Global	Multilevel	Conceptual	–	–	IB model
Metli & Lane (2020)	Multinational	Multilevel	Conceptual	–	–	International mindedness
Lineham (2013)	UK	DP	Empirical	Quantitative	Students	DP effectiveness
Hayden et al. (2017)	Multinational	DP	Empirical	Quantitative	Students	CAS impact
Jackson & Wilton (2016)	UK	CP-relevant	Empirical	Quantitative	Students	Work-integrated learning
Strong et al. (2020)	Global	CP-relevant	Empirical	Quantitative	Students	Global competency

Table 5. Summary of Study Distribution

Category	Number of Studies
Empirical Studies	24
Conceptual / Review Studies	11
Primary Years Programme (PYP)	4
Middle Years Programme (MYP)	6
Diploma Programme (DP)	14
Career-related Programme (CP)	2
Multilevel / General IB	9
Europe & UK	9
Australia & New Zealand	6
East & Southeast Asia	8
Multinational / Global	7
Global South / Developing Contexts	5

The thematic synthesis indicates that 22 of the 35 studies explicitly link the development of global competence to core IB components such as the Learner Profile, inquiry-based pedagogy, Approaches to Learning, and Diploma Program components, including Theory of Knowledge and Creativity, Activity, and Service. Of these, 15 are empirical studies, and 7 are conceptual analyses or literature reviews. Empirical studies report enhancements in critical thinking, intercultural awareness, epistemic

reflection, and students' ethical engagement, while conceptual studies emphasize the integration of values and international orientation as foundational principles of IB education.

A total of 18 studies highlight differences in the development of global competence across program levels. The strongest concentration of empirical evidence is found at the Diploma Program level, whereas the PYP and MYP literature places greater emphasis on the formation of global dispositions and metacognitive reflection. Research on the Career-related Program remains limited, with only two studies explicitly focusing on CP that examine the connection between academic learning, work-related experiences, and preparedness for global professional environments. A small number of multilevel studies address career-oriented dimensions indirectly, but CP-specific empirical evidence remains comparatively scarce.

Seventeen studies identify contextual factors as key mediators of variation in implementation outcomes, including school leadership, teacher professional development, institutional culture, and national policy contexts. Studies addressing edupreneurship are situated within this framework as part of institutional dynamics influencing teachers' professional capacity, rather than as direct components of students' global competence.

Overall, the findings suggest that the development of global competence within the IB program results from the interaction between core curricular components and their implementation contexts, with the strongest empirical evidence emerging at the Diploma Program level.

3.2. Discussion

3.2.1 Core IB Components and Practices Linked to Global Competence

In global education literature, global competence is understood as an integrated capacity encompassing the ability to understand global and intercultural issues, evaluate and appreciate diverse perspectives, interact effectively across cultures, and act responsibly for collective well-being and sustainability (Education, 2015; Guo, Zhuang, & Hasan, 2024; oecd, 2018; Simpson & Dervin, 2019). The findings of this systematic literature review indicate that the International Baccalaureate (IB) program fosters global competence through the integration of interconnected values, pedagogical approaches, and learning experiences, rather than through a single, standalone curriculum element (Banks, 2017; Billig, 2017).

The component most consistently associated with the development of global competence is the IB Learner Profile, which functions as the normative and ethical framework of IB education. Attributes such as inquirers, open-minded, caring, principled, and communicators are positioned in the literature as key dispositions shaping the IB's value orientation and educational ethos toward diversity, social justice, and global responsibility (Gardner-McTaggart, 2019). Empirically, the Learner Profile has also been conceptualized as a clearly defined multidimensional construct with strong validity and reliability, reinforcing its position as a core component in IB program implementation (Kamaruddin & Matore, 2021). In this context, global competence is understood not merely as a set of cognitive skills, but as the formation of identity and values that guide students' ways of thinking, being, and acting in response to global complexity.

Beyond this value framework, the literature emphasizes the central role of inquiry-based pedagogy as the primary mechanism for translating global values into classroom practice. Within the International Baccalaureate context, inquiry is regarded as the core pedagogical approach that encourages students to explore complex issues, analyze evidence from multiple sources, and consider diverse perspectives in the learning process (oecd, 2018; Shukur, 2024). This process contributes to strengthening the cognitive dimensions of global competence, particularly critical thinking and intercultural understanding. Furthermore, when inquiry is combined with reflective dialogue and collaborative learning, IB practices not only promote conceptual understanding but also cultivate empathy, openness, and cultural sensitivity as integral aims of global citizenship education (Beamish, Hay, & Yuen, 2024; Bores-García, González-Calvo, Barba-Martín, García-Monge, & Hortigüela-Alcalá, 2023; Education, 2015).

The reviewed literature also identifies Approaches to Learning (ATL) as a key component bridging global competence goals with everyday learning behaviors. ATL encompasses thinking, communication, social, self-management, and research skills that are transferable across disciplines and contexts. The International Baccalaureate (2014) asserts that these skills enable students not only to understand global issues conceptually, but also to participate effectively in intercultural interactions, multicultural teamwork, and global problem-solving. In other words, ATL functions as a pedagogical infrastructure that operationalizes global competence within the learning process.

At the program level, particularly within the Diploma Programme (DP), the literature highlights the contributions of Theory of Knowledge (TOK) and Creativity, Activity, and Service (CAS) as platforms for strengthening global competence. TOK is understood as a space for epistemic reflection that encourages students to question assumptions about knowledge, authority, and cultural frameworks shaping human understanding of the world. Through such reflection, students develop awareness of the relativity of perspectives and the complexity of truth, which are key elements in understanding global and intercultural issues (Bergeron & Rogers, 2019; International Baccalaureate, 2020). Meanwhile, CAS serves as experiential learning that connects global understanding with concrete action. Through service activities and community engagement, students are encouraged to translate empathy and social concern into responsible action, thereby reinforcing the behavioral and ethical dimensions of global competence (Billig, 2017; Hayden, Hemmens, Mcintosh, Sandoval-Hernández, & Thompson, 2017).

Overall, the reviewed literature portrays the development of global competence in the International Baccalaureate program as systemic and integrative. The Learner Profile shapes students' global value orientation and identity; inquiry-based pedagogy strengthens critical understanding of global issues and perspectives; Approaches to Learning provide transferable skills for interaction and collaboration; and Theory of Knowledge together with Creativity, Activity, and Service deepen epistemic reflection while fostering ethical engagement through action. The integration of these components and practices underscores that global competence within IB does not emerge from isolated interventions, but is constructed through a curriculum and pedagogical design that consistently connects knowledge, values, and action within a global context.

3.2.2 Program Empirical Evidence Across Programme Levels and National Contexts

Empirical literature on the International Baccalaureate (IB) indicates that the development of global competence is consistently reported across various national contexts, although with differing characteristics and emphases at each program level (Ponce & Intriago, 2022; Resnik, 2012). This variation reflects the nature of IB as a flexible global educational framework that allows adaptation to cultural contexts, national education policies, and schools' institutional capacities (Hill, 2012). Accordingly, global competence within IB does not emerge through a uniform pattern, but rather through gradual and contextualized processes shaped by program level and implementation environment (Kamaruddin, 2020).

At the Primary Years Programme (PYP) level, the literature suggests that global competence development is primarily rooted in students' affective and dispositional dimensions. PYP is designed as a holistic, inquiry-based curriculum framework emphasizing whole-child development, well-being, and Learner Profile attributes such as caring and open-mindedness. Consequently, global orientation at this stage is expressed more through the cultivation of attitudes, empathy, and awareness of diversity than through complex analytical abilities (Dix & Sniedze-Gregory, 2020; Savage & Drake, 2016). Cross-national systematic reviews indicate that PYP implementation is highly contextual, with emphases on international-mindedness and intercultural understanding mediated by socio-cultural backgrounds and school-level education policies (Bores-García et al., 2023). Thus, global competence at the PYP stage develops as a contextual dispositional foundation before being strengthened at subsequent levels.

In contrast, at the Middle Years Programme (MYP) level, the literature points to a more explicit shift toward strengthening higher-order cognitive skills and structured social competencies. The MYP

curriculum design incorporates interdisciplinary units, global contexts, and the Personal Project as integrative spaces linking global issues with students' personal experiences while fostering metacognitive reflection and the capacity for learning how to learn (Termaat, 2024; Walker & Bunnell, 2024). national empirical evidence shows that MYP students demonstrate higher levels of critical thinking compared to students in national curricula, reinforcing MYP's explicit orientation toward classroom practices that support analysis, argumentation, and reflective reasoning (Johnston et al., 2023). Additionally, the strengthening of intercultural communication and collaboration largely depends on teachers' capacity to consistently facilitate reflective dialogue and problem-based learning (Wright & Keung, 2025). However, the literature also emphasizes that the realization of MYP's potential is not automatic; the complexity of curriculum integration, the need for cross-subject coordination, and strong school leadership are key factors contributing to variations in implementation quality and outcomes across institutions and national contexts (Dickson, Perry, & Ledger, 2021).

The most consistent empirical evidence is found at the Diploma Programme (DP) level, which has been widely examined through quantitative and mixed-methods studies. The literature demonstrates that core DP components Theory of Knowledge (TOK), the Extended Essay (EE), and Creativity, Activity, and Service (CAS) support the cognitive, affective, and behavioral dimensions of global competence. Studies on TOK highlight its contribution to enhanced critical thinking and epistemic awareness through reflection on the nature of knowledge and the diversity of perspectives (Cole, Ullman, Gannon, & Rooney, 2015). Meanwhile, CAS is understood as an experiential element that bridges understanding and social action, fostering empathy, ethical responsibility, and engagement (Hatziconstantis & Kolympari, 2016; Hayden & McIntosh, 2018). Longitudinal research further indicates that participation in the international DP curriculum correlates with strengthened global orientation and shifts in students' worldviews (Hayden, McIntosh, Sandoval-Hernández, & Thompson, 2020), although the expression of these outcomes remains influenced by institutional context and school culture (Lineham, 2013).

Empirical evidence concerning IB, including the Career-related Programme (CP), remains relatively limited and is largely dominated by perception-based studies, although findings suggest contributions to global awareness and cross-cultural appreciation (Dickson et al., 2018). CP facilitates contextually grounded global competence development by linking academic learning with work-related experiences, aligning with research emphasizing the importance of work-integrated learning and industry partnerships for employability and global work readiness (Jackson & Wilton, 2016; Naseer, Tariq, Alshahrani, Alruwais, & Al-Wesabi, 2025). Global competencies relevant to career contexts include intercultural communication skills, adaptability, and preparedness for international work environments (Strong et al., 2020). Variations in CP implementation quality across national contexts indicate that program design and school-level institutional support significantly influence achieved outcomes.

Across national contexts, empirical studies show that although the IB framework is global in scope, the implementation and outcomes of global competence development are strongly shaped by local factors such as national education policies, cultural values, and teachers' professional capacity. In some contexts, IB is viewed as a vehicle for expanding global perspectives and innovative pedagogical practices, while in others tensions emerge concerning curriculum localization and the dominance of particular perspectives. These variations underscore that global competence within IB cannot be understood as a direct outcome of curriculum adoption alone, but rather as the product of interaction between the IB's global framework and the local realities of schools.

Overall, the literature suggests that the development of global competence within the IB program follows a differentiated developmental trajectory across educational levels. In PYP, global orientation centers on foundational attitudes and values; in MYP, it develops through strengthened cognitive and social skills within interdisciplinary frameworks; in DP, it is deepened through more complex epistemic reflection and ethical action; and in CP, it is linked to professional readiness and workplace contexts.

This differentiation confirms that global competence within IB is not a static construct, but a progressive developmental process shaped by implementation dynamics across diverse national contexts.

3.2.3 Contextual Mediators of Global Competence Development in IB

The reviewed literature indicates that the development of global competence within the International Baccalaureate (IB) program is not determined solely by curriculum design and program components, but is also strongly influenced by contextual factors framing its implementation at the school level. These factors include school leadership, teacher professional development, institutional culture, and the alignment between the IB's global framework and local policy contexts and cultural values (Lubis, Hanafi, & Hidayat, 2025; Whaley, 2024). Studies examining the introduction and adaptation of IB across countries further emphasize that the curriculum is continuously negotiated between internationalization demands and localization needs, resulting in variations in implementation practices and student outcomes across schools and national contexts (Yu Fang, 2025). Differences in the configuration of these contextual factors help explain why global competence outcomes are not uniform, even when schools adopt the same IB framework.

One of the most prominent contextual factors highlighted in the literature is school leadership. Empirical studies demonstrate that leadership aligned with IB values, particularly ethical and transformational leadership, plays a crucial role in cultivating a school culture supportive of global competence development (Gardner-McTaggart, 2018; Hacking et al., 2018). School leaders who emphasize international vision, social justice, and student-centered learning are more likely to integrate global values consistently into school policies, pedagogical practices, and institutional climate (Calnin, Waterson, Richards, & Fisher, 2018; Gardner-McTaggart, 2020). Conversely, when leadership is primarily administrative in orientation, IB implementation risks becoming procedural and less impactful in shaping students' global dispositions (Day, Gu, & Sammons, 2016)

Teacher professional development also emerges as a key factor. IB pedagogy requires a shift in teachers' roles from content transmitters to facilitators of inquiry, reflective dialogue, and cross-cultural collaboration (Shukur, 2025). Teachers who receive sustained training, peer mentoring, and opportunities for professional reflection are reported to be more capable of operationalizing global competence in classroom practice (Whaley, 2024). Other studies indicate that teachers' professional capacity and institutional support at the school level strengthen the quality of IB curriculum implementation and ensure consistent enactment of its values and pedagogical approaches (Lubis et al., 2025).

Another important contextual factor is institutional culture and the school learning environment. Research shows that IB schools fostering collaborative, inclusive, and reflective cultures are more effective in supporting global competence development than schools characterized by hierarchical and competitive environments (Dickson et al., 2018). Studies conducted in IB World Schools further demonstrate that the development of international-mindedness is significantly influenced by how IB values are lived out in daily school culture and collective practices (Hacking et al., 2018). Psychologically safe school cultures enable students to express diverse viewpoints, engage in intercultural dialogue, and reflect on their global identities without fear of negative judgment (Ferguson, 2024). Such environments strengthen the affective and social dimensions of global competence, which are often difficult to achieve through formal curriculum alone.

At the macro level, national education policy contexts and local cultural values shape variations in IB implementation outcomes. The literature identifies tensions between IB global standards and national curriculum requirements, particularly in highly standardized education systems (Chernoff, 2022; Resnik, 2012). In some cases, localization enriches the meaning of global competence by integrating local issues and values. In other contexts, however, national examination pressures constrain pedagogical space, positioning global competence as a secondary objective (Clark & Terrett, 2024).

Across national contexts, access to IB programs does not always occur under equitable conditions. Several studies indicate that participation in the IB Diploma Programme is more prevalent among students from higher socio-economic backgrounds, contributing to the reproduction of educational stratification within national systems (Maire & Windle, 2021; Poonoosamy, 2018). English language barriers, academic readiness, and limited school resources further restrict student participation in several Asian contexts (Hameed, Li, & Tsao, 2025; Ida, 2020). These conditions demonstrate that the development of global competence is influenced not only by curriculum design but also by the social and institutional structures framing access.

Such inequalities raise critical questions about whether IB functions as a democratizing instrument for global competence or as a new mechanism of differentiation within already stratified education systems. When access is concentrated among groups with strong social and economic capital, global competence risks becoming a form of symbolic capital, reinforcing competitive advantage in global arenas. Therefore, IB's impact on equity largely depends on access policies, language support, and inclusive strategies implemented at the institutional and systemic levels.

At the same time, limitations in the literature warrant consideration. Many studies focus predominantly on the Diploma Program and well-established school contexts, while representation of other program levels and the Global South remains limited. The dominance of perception-based designs and the relative scarcity of longitudinal studies also constrain understanding of the long-term impact of global competence development. This highlights the need for more methodologically and geographically diverse research.

In sum, strengthening global competence within IB requires context-sensitive and equity-oriented implementation. School leaders need to ensure that international-minded values are translated into inclusive access policies and safe dialogic cultures. Teacher professional development should prioritize the facilitation of critical reflection and dialogue across perspectives. At the policy level, support for public schools and non-elite contexts is essential to ensure that global competence does not remain concentrated among particular groups, but instead develops as a collective capacity within broader education systems.

4. CONCLUSION

This systematic literature review concludes that International Baccalaureate (IB) programs contribute to the development of students' global competence through key practices such as the Learner Profile, inquiry-based pedagogy, Approaches to Learning (ATL), Theory of Knowledge (TOK), and Creativity, Activity, and Service (CAS), which support cognitive, dispositional, and ethical-action dimensions of global competence. However, the current evidence base is concentrated primarily on the Diploma Program and higher-resource, English-medium contexts, limiting the generalisability of findings across program levels and regions. The review further demonstrates that the effectiveness of IB practices depends substantially on implementation conditions, particularly leadership aligned with international-minded values, sustained teacher professional learning, and an inclusive school culture that promotes participation, intercultural dialogue, and reflective learning. By synthesising these findings, the review proposes a thematic model linking IB practices to global competence outcomes through key institutional and pedagogical mediators. Future research should strengthen the evidence base through longitudinal and comparative designs, validated measures of global competence, and greater attention to under-researched programs and contexts, especially the Career-related Program, public and non-elite schools, multilingual environments, and low-income and Global South settings.

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