

## REQUEST FOR PROPOSALS

# Inquiry-based teaching and learning: An efficacy study in International Baccalaureate schools

---

### PROJECT OVERVIEW

#### About the International Baccalaureate Organization

The International Baccalaureate (IB) is a non-profit educational foundation motivated by its mission to develop inquiring, knowledgeable and caring young people who help create a better and more peaceful world through intercultural understanding and respect. The organization has built a hard-earned reputation for high-quality standards and pedagogical leadership in the field of international education, encouraging students across the world to become engaged global citizens who are active, compassionate and lifelong learners.

Founded in 1968, the IB currently works with nearly 5,000 IB World Schools in over 150 nations to develop and offer four programmes<sup>1</sup> to more than one million students aged 3 to 19 years. In close alignment with its educational programmes, the IB has developed a cohesive professional development framework of workshops designed for teachers and school leaders. Annually, more than 80,000 educators participate in roughly 4,500 offerings of about 600 unique workshops<sup>2</sup> delivered in a variety of formats.

#### About the Current Study

To support IB World Schools' growth and development, the IB Research Department commissions studies to identify efficacy and impact of IB programmes and services. Toward this agenda, the current study will:

- I. Develop a coherent theory of change for how IB programmes' support inquiry-based teaching and learning (ITL) and ITL outcomes.
- II. Document how IB schools, including continuum and single programme schools, understand and implement ITL in practice.
- III. Test the theory of change by exploring the degree to which IB students a) develop inquiry skills and b) make additional gains in downstream ITL outcomes (e.g., critical thinking or other types of process learning, academic achievement, attitudes toward learning).

Interested vendors are invited to submit proposals to undertake the project. This document briefly describes the programmes that continuum schools offer and it outlines the study's objectives, budget and timeline.

#### Primary Years Programme

The Primary Years Programme (PYP), for students aged 3 to 12, focuses on developing the whole child as an inquirer, both in the classroom and in the world outside. A distinctive PYP feature is its six transdisciplinary themes, which provide a framework for teachers to generate challenging and engaging 'inquiries'. Those inquiries involve in-depth investigations into important ideas, providing a vehicle for students to learn through subject areas and to transcend typical confines of subject areas. The Exhibition is the capstone of the PYP.

- Further PYP information can be found at <https://www.ibo.org/pyp/>

---

<sup>1</sup> IB offers four programmes: Primary Years, Middle Years, Diploma, and Career-related.

<sup>2</sup> Thirty of the workshops focus explicitly on inquiry, although the IB strives to make inquiry a pedagogical thread in all workshops.

### Middle Years Programme

The Middle Years Programme (MYP), for students aged 11 to 16, provides a framework of learning that encourages students to become creative, critical and reflective thinkers. The MYP emphasizes intellectual challenge, encouraging students to make connections between their eight subject groups and the real world through five interactive areas. MYP fosters development of essential 21<sup>st</sup>-century skills such as communication, intercultural understanding and global engagement. The Personal Project is the capstone of the MYP.

- Further information about the PYP can be found at: <http://www.ibo.org/myp/>

### The Diploma Programme

The Diploma Programme (DP) is an academically challenging and balanced programme of education that prepares students for success at university and life beyond. DP students study courses from six subject groups that together provide a breadth and depth of experience and understandings in languages, social studies, the experimental sciences and mathematics. In addition, students complete three core elements—the Extended Essay (EE), Theory of Knowledge (TOK), and Creativity, Action, Service (CAS), which encourage independent research, critical thinking and engagement with arts and creativity.

- Further information about the IB DP can be found at: <http://www.ibo.org/diploma/>

### Inquiry-based Teaching and Learning: Research Background

By placing inquiry at the forefront of its mission statement and Learner Profile, the IB locates inquiry-based teaching and learning (ITL) at the centre of its constructivist models of education. Surging interest in ITL—a multi-faceted alternative pedagogy that continues to elude many traditional educators—has prompted calls for deeper study (Barron and Darling-Hammond, 2008; Buchanan et al., 2016; Pedaste et al., 2015). ITL remains a contested area of research, both touted as a silver bullet and critiqued as a distraction, amid the “ongoing problem” of its varied definitions and conceptualizations (Scott, Friesen and Smith, 2018, p. 46). One tension pits unguided, low-value approaches such as discovery learning against higher-yield, teacher-guided approaches such as problem- or project-based learning (Furtak et al., 2012; Scott et al., 2018).

In its published materials, the IB stipulates that inquirers nurture their own curiosity, know how to learn both independently and collaboratively, and sustain lifelong enthusiasm for learning (Bullock, 2011). However, IB schools need an in-depth examination of (a) what ITL approaches the IB explicitly fosters, (b) whether those approaches align to a gold standard of ITL, (c) what mechanisms enable or constrain ITL implementation, (d) whether IB schools are efficacious ITL sites, and (e) which ITL outcomes can be expected from IB participation.

Several IB studies connect programmatic encouragement of student-led learning to acquisition or strengthening of inquiry skills (Gough et al., 2014; Hacking et al., 2017). IB students are also said to develop as critical thinkers through each programme’s inquiry-based capstone experiences (Ateşkan, Dulun and Lane, 2016; Cole et al., 2014; Medwell et al., 2017; Stevenson et al., 2017). Some examinations of Learner Profile attributes associate IB learning most strongly with ITL (Bergeron & Dean, 2013; Billig et al., 2014); other studies show weaker associations with being an “inquirer” (Hayden et al., 2017; McMillian and Dorner, 2016).

The IB expects teachers to develop inquiry-focused units that challenge and engage students (Ateşkan et al., 2016), but an educator’s transition to ITL can require substantial investments of time, energy and well-planned professional development (Lester & Lochmiller, 2014; Stillisano et al., 2010). Much remains unknown about

how teachers 're-think' their styles to prioritize ITL (Beckwitt, Van Camp and Carter, 2015). An inquiry focus can conflict with time-intensive demands of content coverage (Australian Council of Education Research, 2015; Wade, Wolanin and McGaughey, 2015). Even in schools where educators value inquiry, some parents raise concerns about trade-offs with time available for student acquisition of literacy and numeracy skills (Morrissey et al., 2014). Contrastingly, many families opt for IB schools specifically because they promote inquiry and critical thinking (Dixon et al., 2014; Sizmur & Cunningham, 2012). In addition to critical thinking, ITL associates with improved process learning (e.g., knowledge transfer, problem-solving), academic achievement (especially in the sciences), and attitudes toward learning in certain subjects. However, variable definitions of inquiry fuel ongoing debates about how effective ITL can be (Furtak et al., 2012; Hattie, 2009; Scott et al., 2018).

Consequently, deeper understanding is needed on the extent to which IB programmes facilitate ITL and IB schools are efficacious sites of ITL. Research to date has identified technological integration as one ITL implementation facilitator (Cooker, Crook and Ainsworth, 2015; Rizvi et al., 2018). Barriers to emphasizing inquiry include a need for structural supports such as full-time programme coordinators (Hall et al., 2009) or guidance for helping students to learn outside their mother tongues (Coppersmith, 2014). Furthermore, there is evidence of variable applications and levels of ITL emphasis across the IB continuum (Hallinger, Walker and Lee, 2010; Walker, Bryant and Lee, 2014). Moreover, schools' regional or national contexts might lead to different emphases on ITL (Hallinger et al., 2010; Lester and Lochmiller, 2014) and perceptions of its value (Kushner et al., 2016; Rizvi et al., 2014).

## PROJECT GOALS

### Research objective

This study aims for an in-depth investigation of IB World Schools as potentially efficacious sites of inquiry-based teaching and learning (ITL). First, this study will develop a theory of change documenting how IB programmes support ITL and intended outcomes of ITL. Moreover, an assessment will be undertaken of the extent to which IB's conceptualization of ITL aligns with extant theory and research on ITL. Second, the study will qualitatively explore how single programme and continuum schools understand and implement ITL. This component of the study will compare and contrast how these understandings align with or differ from the IB ITL theory of change. Third, the study will use or adapt existing measures to produce quantitative evidence of whether single programme and continuum IB schools deliver efficaciously on immediate and downstream ITL outcomes.

### Research questions

Research questions to be addressed in this study include, but are not limited to, the following:

#### *Phase 1 – Documenting the IB ITL Theory of Change (Document Review & Key Informants)*

1. What is the IB's theory of change regarding inquiry-based teaching and learning (ITL)?
  - a. What programmatic elements in the PYP, MYP and DP support ITL?
  - b. What outcomes does IB attribute to ITL in the PYP, MYP and DP?
  
2. To what extent is the IB's conceptualization of ITL coherent?
  - a. Do IB programme documents align in their descriptions of salient ITL concepts?
  - b. Do the IB's approaches to ITL align with evidence-informed promising practices?

### *Phase 2 – School ITL Perspectives and Practices (Individual and Group Interviews in IB Schools)*

3. What does ITL mean to key IB school stakeholders?<sup>3</sup>
  - a. What student benefits do key IB school stakeholders ascribe to, or expect from, ITL?
  - b. What limitations or trade-offs do key IB school stakeholders associate with ITL?
  - c. How do IB faculty learn to incorporate ITL into their pedagogy?
  - d. To what extent do key IB school stakeholders' understandings and expectations of ITL vary across the IB continuum of programmes?
4. How do key stakeholders know whether ITL is occurring in their schools?
  - a. What factors facilitate ITL implementation?
  - b. What factors constrain ITL implementation?
5. To what extent do schools' perspectives and practices align with the IB ITL theory of change?

### *Phase 3 – Efficacy Trial (Quantitative Methods)*

6. Do IB students' inquiry skills grow during an academic year?
7. Do IB students' inquiry-skill levels and growth curves differ by student or school characteristics such as:
  - a. ages, grades, or years in school<sup>4</sup>?
  - b. IB programme (i.e., PYP, MYP, or DP)?
  - c. number of years attending an IB school<sup>5</sup>?
8. *\*\*\*If a suitable comparison group can be determined or other quasi-experimental design elements are employed: Does student participation in an IB programme predict growth in inquiry skills?*
9. Do IB students' levels of inquiry predict their levels of downstream ITL outcomes (e.g., critical thinking or other types of process learning, academic achievement, attitudes toward learning) and do those relations vary by student or school characteristics?

## **PROJECT DESIGN**

This study proposes a sequential exploratory design (Creswell and Plano Clark, 2017) and follows the Singal, Higgins and Waljee (2014) depiction of the type of sites best-suited for efficacy trials: resource-intensive, ideal settings selected with strong exclusion criteria such as the absence of concurrent programmes. Based on this approach to efficacy trials, continuum and single programme schools that are identified as 1) exhibiting a high degree of programme fidelity and 2) are independent from overlapping educational initiatives, will be the focus of the outcomes component of this study. The following sections suggest approaches to the research; however, vendors may propose alternative designs.

---

<sup>3</sup> For this project, we define key IB school stakeholders as students, classroom teachers, school leaders (e.g., heads/principals, coordinators, department/section chairs), and parents (or other relevant school community members).

<sup>4</sup> Hattie (2009) shows declining effect sizes of ITL across the grade continuum.

<sup>5</sup> We hypothesize that students in their first years attending IB programmes (regardless of age or programme) will experience steeper growth curves than peers who have experienced IB education prior to baseline.

### **Phase 1 (The IB ITL Theory of Change)**

The study will begin with a review of selected ITL-relevant IB documents, interviews with key informants, and a state-of-the-art review (Grant & Booth, 2009) of scholarly literature on ITL. Outputs of this phase would be a cogent definition of how the IB portrays its programmatic expectations for operationalizing and delivering ITL (i.e., a theory of change), as well as an appraisal of how well that portrayal comports to evidence-informed promising practices for ITL. Proposals should specify approaches to this phase.

### **Phase 2 (School ITL Perspectives and Practices)**

Qualitative methods should employ typical case sampling (Teddlie and Yu, 2007) specified by school characteristics. The study should identify ( $n = 8$ ) schools: two IB continuum schools (i.e., offering PYP, MYP, and DP), and two each that offer one of those programmes only, but do so schoolwide.<sup>6</sup> The overall sample should account for at least two of the IB's three geographical regions.<sup>7</sup> Determining characteristic boundaries for typical cases creates a profile of normal or average examples of phenomena and guards against selection biases that are common to non-probability samples (e.g., extremities due to maximum variation sampling). Therefore, proposals should include a sampling plan which facilitates the production of data that features "thick" contextual descriptions (Guba and Lincoln, 1982, p. 241), thus enabling findings that might not necessarily generalize to all IB schools, but would demonstrate sufficient transferability, even if findings are more pronounced in some IB schools and less so in others. Data collection should involve individual and group interviews with relevant school community members. Whether conducted in person or via technological means, interviews should cover IB schools' ITL understandings, mechanisms facilitating or constraining its implementation, and expectations for outcomes of successful implementation. Lastly, researchers will compare and contrast findings from this phase with the IB ITL theory of change developed in Phase 1 to identify areas of alignment and divergence. *An interim report should detail results of Phases 1 and 2, along with a proposed approach for measurement in the Phase 3 Efficacy Trial.*

### **Phase 3 (Efficacy Trial)**

An efficacy trial at the same sites from Phase 2 should feature at least three administrations (in person or via technological means) of measures of immediate and downstream outcomes of ITL to examine potential growth. This study is not meant for measure development, so proposals should identify extant validated instruments and provide compelling rationales for their use with this study's population of interest. Possible measures of inquiry include, but are not limited to, the McGill Self-Efficacy of Learners for Inquiry Engagement survey (Ibrahim, Aulls and Shore, 2016), the Science Inquiry Test (Yang et al., 2016), or the Views About Scientific Inquiry questionnaire (Lederman et al., 2014). Proposals should feature designs that enable inferences about IB schools' efficacy regarding students' growth in immediate and downstream outcomes of ITL. Acceptable designs might include:

- group comparisons, provided that a vendor explains the relevance of identified comparison groups and their approaches to recruitment
- single-group, non-equivalent dependent variables approaches to test hypothesized effects on immediate and downstream outcomes of ITL alongside the expected absence of effects on similar, but non-hypothesized, outcomes (see Mitchell and Begeny, 2014; Shadish, Cook and Campbell, 2002)
- alternative single- or multi-group designs that enable attribution of changes in immediate and downstream outcomes of ITL to IB participation.

---

<sup>6</sup> Implementation must be schoolwide for PYP, is often schoolwide for MYP, and less commonly schoolwide for DP.

<sup>7</sup> The IB's three regions are: Africa, Europe, and the Middle East; the Americas; and Asia-Pacific.

*All proposals should provide compelling rationales for study design, instrumentation, and data analysis, but final decisions will be made in consultation with the IB Research Department. The successful vendor will demonstrate consideration of the implications of timelines and instruments needed to assess immediate and downstream outcomes of ITL both across the K-12 spectrum in IB continuum schools and across national contexts.*

## PROJECT BUDGET

The project budget is USD 100,000.

## PROJECT DELIVERABLES AND TIMELINES

The successful vendor will be required to provide the following project deliverables:

1. An interim report giving a research update that details the project's overall progress; preliminary findings will be expected mid-project.
2. A final copyedited report will be submitted to IB for review. The report is expected to include an executive summary, review of relevant literature, methodology, findings, discussion and conclusions. The report will be written in clear, accessible language and, if relevant, will provide detailed implications/recommendations.
3. Scholarly papers submitted for review at prestigious research conferences and academic journals.
4. Data visualizations to communicate substantive findings to key stakeholders (e.g., educators, school leaders, parents deciding whether to enroll their children in PYP schools).
5. De-identified quantitative data sets with statistical analysis syntax/scripts/coding, as well as de-identified transcripts of data from individual and group interviews.

## SUBMISSION REQUIREMENTS

All proposals should include the following:

1. An email notification of a vendor's intent to respond to this RFP that Michael Thier (Research Manager: Outcomes, International Baccalaureate) receives at michael.thier@ibo.org by **November 28, 2018**.
2. Description of the services that the vendor will provide.
3. Research design and methodological approach, including in detail how the research design and methodological approach will address the research questions.
4. Itemized budget.
5. Key personnel including qualifications, background and expertise the vendor will bring to this project. The proposal must also detail the contribution and time that chief/principal investigators will contribute to the study and contributions of supporting staff. It is required that chief/principal investigators take an active role in the study.
6. Evidence should be given to demonstrate the vendor's capacity to undertake this project. This could include recent reports/publications related to the topic proposed in this RFP.
7. CVs can be included as attachments, but these should only provide information relevant to the proposed study.
8. Contact details for two referees. It is desirable that these include previous organizations for which the vendor has undertaken commissioned studies (Please note: referees will be contacted).

9. Timeline of research activities and deliverables.
10. Proposals should not exceed 4,000 words for the description of services and research design/methodology (appendices excluded).

## REVIEW PROCESS & CRITERIA

Proposals will be evaluated based on methodological rigor, feasibility of timelines, and budget. Members of IB's Research Department will review proposals and seek input from external advisors when appropriate. All applicants will be notified of IB's decision within a month.

## DEADLINES

Review of proposals will begin immediately upon receipt. All proposals received on or before **December 14, 2018** will be considered. The project is expected to be completed by **September 2020**.

*An email notice of a vendor's intent to respond to this RFP should be sent to Michael Thier by **November 28, 2018**. Please submit proposal electronically or by mail to:*

### Michael Thier

Research Manager (Outcomes), International Baccalaureate  
IB Global Centre, Washington, DC  
7501 Wisconsin Avenue, Suite 200 West  
Bethesda, Maryland, 20814  
Tel: +1 301 202 3081  
Email: michael.thier@ibo.org

## REFERENCES

- Ateşkan, A, Dulun, Ö and Lane, JF. 2016. Middle Years Programme (MYP) implementation in Turkey. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/contentassets/a7bc64e18f3a4a5493d4213f648f8b18/research-myp-in-turkey-full-report-en.pdf>
- Australian Council for Educational Research. 2015. The International Baccalaureate (IB) Middle Years Programme (MYP): Comparing IB Diploma Programme outcomes of students who complete the MYP and other middle years courses of study. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/myp/comparing-dp-outcomes-with-myp-report-en.pdf>
- Barron, B., & Darling-Hammond, L. (2008). Teaching for Meaningful Learning: A Review of Research on Inquiry-Based and Cooperative Learning. *George Lucas Educational Foundation*.
- Beckwitt, A, Van Camp, D and Carter, J. 2015. International Baccalaureate implementation study: Examination of district-wide implementation in the US. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/dp/district-wide-implementation-report-en.pdf>
- Bergeron, L, and Dean, M. 2013. The IB Teacher Professional: Identifying, measuring and characterizing pedagogical attributes, perspectives, and beliefs. Bethesda, Maryland, USA. *International Baccalaureate Organization*. [https://www.ibo.org/globalassets/publications/ib-research/continuum/theibteacherprofessional\\_final\\_march6.pdf](https://www.ibo.org/globalassets/publications/ib-research/continuum/theibteacherprofessional_final_march6.pdf)

- Billig, SH, Fredericks, L, Swackhamer, L and Espel, E. 2014. Case studies of learner profile implementation and impact in the United States. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/dp/lpintheusfullreportfinal.pdf>
- Buchanan, S, Harlan, MA, Bruce, CS, and Edwards, SL. 2016. Inquiry based learning models, information literacy, and student engagement: A literature review. *School Libraries Worldwide*, 22(2), 23-39.
- Cole, DR, Gannon S, Ullman J, Rooney P. 2014. Theory of knowledge (TOK): Exploring learning outcomes, benefits and perceptions. Bethesda, MD, USA. International Baccalaureate Organization. [https://www.ibo.org/globalassets/publications/ib-research/dp/tokfinalreport\\_000.pdf](https://www.ibo.org/globalassets/publications/ib-research/dp/tokfinalreport_000.pdf)
- Cook, TD, Campbell, DT and Shadish, W. 2002. *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
- Cooker, L, Crook, C and Ainsworth, S. 2015. The integration of technology in the International Baccalaureate Diploma Programme. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/dp/technology-in-the-dp-report-en.pdf>
- Coppersmith, SA. 2014. Elementary Teachers Using Inquiry-Oriented Practices in One-Way Language Immersion: Challenges and Opportunities in the Midwest. Paper presented at the American Educational Research Association's annual meeting, Philadelphia, PA.
- Creswell, JW and Clark, VLP. 2017. *Designing and conducting mixed methods research*. Los Angeles, CA: Sage.
- Dixon, M, Charles, C, Moss, J, Hubber, P and Pitt, P. 2014. The International Baccalaureate Diploma Programme: Alignment with the Australian Curriculum and Australian Qualifications Framework. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/dp/australiancurriculumanddpfinalreport.pdf>
- Furtak, E, Seidel, T, Iverson, H, and Briggs, D. 2012. Experimental and quasi-experimental studies of inquiry-based science teaching: A meta-analysis. *Review of Educational Research*, 82(3), 300-329.
- Gough, A, Sharpley, B, Vander Pal, S and Griffiths, M. 2014. The International Baccalaureate Primary Years Programme in Victorian Government primary schools, Australia. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/pyp/pypinaustraliafinalreport.pdf>
- Grant, MJ and Booth, A. 2009. A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91-108.
- Guba, EG, and Lincoln, YS. 1982. Epistemological and methodological bases of naturalistic inquiry. *ECTJ*, 30(4), 233-252.
- Hacking, E, Blackmore, C, Bullock, K, Bunnell, T, Donnelly, M and Martin, S. 2017. The international-mindedness journey: School practices for developing and assessing international-mindedness across the IB continuum. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/continuum/international-mindedness-final-report-2017-en.pdf>
- Hall, J, Elder, T, Thompson, J, and Pollack, S. 2009. *The Primary Years Programme field study*. Athens, GA: University of Georgia, College of Education, Education Policy and Evaluation Center. <https://www.ibo.org/globalassets/publications/ib-research/pyp/ib-pypoverviewreportwithoutchoolnames3-6-09.pdf>



- Hallinger, P, Walker, A and Lee, M. (2010). A study of successful practices in the IB program continuum. Hong Kong: Asia Pacific Center for Leadership and Change, The Hong Kong Institute of Education.
- Hattie, JA. 2009. *Visible learning: A synthesis of 800+ meta-analyses on achievement*. Abingdon, UK: Routledge.
- Hayden, M, Hemmens, A, McIntosh, S, Sandoval-Hernández, A and Thompson, J. 2017. The impact of creativity, action, service on students and communities. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/contentassets/d1c0accb5b804676ae9e782b78c8bc1c/cas-finalreport-2017-en.pdf>
- Ibrahim, A, Aulls, MW, and Shore, BM. 2016. Development, validation, and factorial comparison of the McGill Self-Efficacy of Learners For Inquiry Engagement (McSELFIE) survey in natural science disciplines. *International Journal of Science Education*, 38(16), 2450-2476.
- Kushner, S, Cochise, A, Courtney, M, Sinnema, C and Brown, G. 2016. International Baccalaureate Primary Years Programme in Aotearoa New Zealand: A case study in whole-school innovation. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/pyp/evaluation-of-the-pyp-in-new-zealand.pdf>
- Lederman, JS, Lederman, NG, Bartos, SA, Bartels, SL, Meyer, AA, and Schwartz, RS. 2014. Meaningful assessment of learners' understandings about scientific inquiry—The views about scientific inquiry (VASI) questionnaire. *Journal of Research in Science Teaching*, 51(1), 65-83.
- Lester, JN and Lochmiller CR. 2015. A mixed-methods case study of International Baccalaureate Primary Years Programmes in four Colombian schools. Bethesda, MD, USA. *International Baccalaureate Organization*. <https://www.ibo.org/globalassets/publications/ib-research/pyp/pyp-columbia-full-report.pdf>
- McMillian, R, and Dorner, LM. 2016. Students Understand and Enact Their "Learner Profile" at Spanish and French Elementary Immersion Schools. Paper presented at the American Educational Research Association's annual meeting, Washington, DC.
- Medwell, J, Cooker, L, Bailey, L, and Winchip, E. 2017. The impact of the PYP exhibition on the development of international-mindedness, critical thinking and attributes of the IB learner profile. Bethesda, MD, USA. *International Baccalaureate Organization*. <https://www.ibo.org/globalassets/publications/ib-research/pyp/pyp-exhibition-final-report-en.pdf>
- Mitchell, C and Begeny, JC. 2014. Improving student reading through parents' implementation of a structured reading program. *School Psychology Review*, 43(1), 41-58.
- Morrissey, A, Rouse, E, Doig, B, Chao, E and Moss, J. 2014. Early years education in the Primary Years Programme: Implementation strategies and programme outcomes. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/pyp/pypearlyyearsfinalreport.pdf>
- Patton, MQ. 2002. *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Pedaste, M, Mäeots, M, Siiman, LA, De Jong, T, Van Riesen, SA, ... and Tsourlidaki, E. 2015. Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review*, 14, 47-61
- Rizvi, F, Acquaro, D, Quay J, Sallis R, Savage G and Sobhani, N. 2014. International Baccalaureate learner profile: A comparative study of implementation, adaptation and outcomes in India, Australia and Hong Kong. Bethesda, Maryland, USA. International Baccalaureate Organization. <https://www.ibo.org/globalassets/publications/ib-research/dp/lpin3countriesreportfinal.pdf>

Rizvi, F, Lo Bianco, J, Wang, C, Hay, T, Barron, R and Khan, A. 2017. Emerging technologies and the potential and challenges of peer learning of Chinese and English in transnational learning spaces. Bethesda, MD, USA. International Baccalaureate Organization. <https://www.ibo.org/contentassets/a7bc64e18f3a4a5493d4213f648f8b18/peer-learning-full-report.pdf>

Scott, DM, Smith, CW, Chu, MW, and Friesen, S. 2018. Examining the efficacy of inquiry-based approaches to education. *Alberta Journal of Educational Research*, 64(1), 35-54.

Shadish, WR, Cook, T, and Campbell, D. 2002. *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.

Sillisano, J. R. et. al. 2010. *Evaluation of International Baccalaureate Programmes in Texas schools*. College Station, Texas: State of Texas Education Research Center. <https://www.ibo.org/globalassets/publications/ib-research/pyp/evaluationofibprogramsintexasschools2010.pdf>

Singal, AG, Higgins, PD and Waljee, AK. 2014. A primer on effectiveness and efficacy trials. *Clinical and Translational Gastroenterology*, 5(1), 1-4.

Sizmur, J and Cunningham, R. 2012. International Baccalaureate Middle Years Programme (MYP) in the UK. Slough, Berkshire, UK. NFER. <https://www.ibo.org/globalassets/publications/ib-research/myp/ibmyp-finalinferreport-plussupplementaryanalyses.pdf>

Stevenson, H, Shah, S, Bailey, L, Cooker, L, Winchip, E and Karak, M. 2017. The International Baccalaureate Middle Years Programme (MYP) implementation in the United Arab Emirates. Bethesda, MD, USA. International Baccalaureate Organization [https://www.ibo.org/contentassets/a7bc64e18f3a4a5493d4213f648f8b18/myp\\_uae\\_finalreport\\_en3.pdf](https://www.ibo.org/contentassets/a7bc64e18f3a4a5493d4213f648f8b18/myp_uae_finalreport_en3.pdf)

Teddle, C and Yu, F, 2007. Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1), 77-100.

Wade, J, Wolanin N, and McGauhey T. 2015. A Study of Critical Thinking Skills in the International Baccalaureate Middle Years Programme. Bethesda, MD, USA. *International Baccalaureate Organization*. <https://www.ibo.org/globalassets/publications/ib-research/myp/myp-critical-thinking-report.pdf>

Walker A, Bryant D, and Lee M. 2014. The International Baccalaureate continuum: Student, teacher and school outcomes. Bethesda, MD, USA. *International Baccalaureate Organization*. [https://www.ibo.org/globalassets/publications/ib-research/continuum/continuum\\_report\\_final-en.pdf](https://www.ibo.org/globalassets/publications/ib-research/continuum/continuum_report_final-en.pdf)

Yang, K-K, Lin, S-F, Hong, Z-R, and Lin, H-s. 2016. Exploring the assessment of and relationship between elementary students' scientific creativity and science inquiry. *Creativity Research Journal*, 28(1), 16-23.

#### **IB DOCUMENTS FOR FURTHER READING**

- Bullock, K. 2011. International Baccalaureate learner profile: Literature review. Bethesda, MD, USA. *International Baccalaureate Organization*. <https://www.ibo.org/globalassets/publications/ib-research/iblearnerprofileeng.pdf>
- Programme Standards and Practices (2014)
- What is an IB Education? (2015)