



REQUEST FOR PROPOSALS:

Critical thinking skills in the IB Diploma Programme

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 quality, high standards and pedagogical leadership in the field of international education, encouraging students across the world to become engaged world citizens who are active, compassionate and lifelong learners.

Founded in 1968, the IB currently works with nearly 5,000 IB World Schools in about 150 nations to develop and offer a continuum of four programmes¹ to more than one million students aged 3 to 19 years. In close alignment with its four educational programmes, the IB has developed a cohesive professional development framework consisting of workshops designed for teachers and school leaders. Annually more than 80,000 teachers and school leaders around the world participate in more than 4,500 workshops 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:

- Develop a theory of change/logic model of the Diploma Programme core curriculum and other programmatic elements that are deemed to foster the development of critical thinking skills and dispositions.
- Examine the effects of participation in the Diploma Programme on student critical thinking skills and dispositions.
- Investigate how DP students compare with non-IB peers with regards to critical thinking.

Interested vendors are invited to submit proposals to undertake the project. This document offers a brief description of the Diploma Programme and outlines the study's objectives, budget, and timeline.

The IB Diploma Programme

The International Baccalaureate Diploma Programme (DP) is an academically challenging and balanced programme for students aged 16-19. It aims to develop students who: 1) have excellent breadth and

depth of knowledge; 2) flourish physically, intellectually, emotionally and ethically; 3) study at least two languages; 4) excel in traditional academic subjects; and 5) explore the nature of knowledge through the programme's unique theory of knowledge course. The DP curriculum is made up of six subject groups — Studies in language and literature, Language acquisition, Individuals and societies, Sciences, Mathematics, and The arts; and the DP core — Theory of knowledge (TOK), Extended Essay (EE), and Creativity, Action, Service (CAS). The programme is currently offered in more than 3,000 schools in about 150 countries.

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

The Learner Profile

All IB programmes, including the DP, support student attainment of a range of academic and non-academic attributes that are collectively described as the Learner Profile (see Figure 1). In brief, the Learner Profile reflects aims and values that become part of a school's culture and ethos when it is authorized as an IB World School. *Certain attributes, for example students as 'thinkers', aim to foster the development of critical and creative thinking and problem-solving abilities.* At the student level, the attributes and descriptors of the LP define the type of learner the IB hopes to develop through its programmes. At the school level, the LP is a set of ideals that can inspire, motivate and focus the work of schools and teachers. Schools are expected to consider how structures and systems, curriculum and units of work can enable students to develop into the learner described in the profile.

Figure 1: IB Learner Profile

As IB learners we strive to be:	
Inquirers	We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.
Knowledgeable	We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.
Thinkers	We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.
Communicators	We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.
Principled	We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.
Open-minded	We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.
Caring	We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

Risk-takers	We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.
Balanced	We understand the importance of balancing different aspects of our lives intellectual, physical, and emotional to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.
Reflective	We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development. They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

- More information about the LP is available at: <http://www.ibo.org/benefits/learner-profile/>

Critical thinking in the Diploma Programme

The development and enhancement of critical thinking abilities is a foundational goal of the IB programmes. The DP, specifically, with its core elements, Theory of Knowledge and Extended Essay, focuses on critical and creative thinking that enable students to analyze situations, revisit challenges and create possible solutions to problems. The theory of knowledge (TOK) is an interdisciplinary course designed to develop a coherent approach to learning that transcends and unifies the DP academic areas, with critical thinking abilities being one major set of desired outcomes. Placing the student as knower at its center, the TOK course focuses on awareness and skills rather than informational content and provides opportunity for students to reflect and express their perspectives on knowledge issues. Results from an observational study showed an increase in students' use of critical thinking skills between the two successive years of the DP (Cole, Gannon, Ullman & Rooney, 2014). Moreover, second-year DP students reported a significantly greater likelihood of using a range of critical thinking skills. Additionally, participating teachers perceived the ability to critically evaluate information and to reflect on personal assumptions as key student outcomes of the TOK course.

The Extended Essay (EE), another core requirement for all students pursuing the IB Diploma, is an independent research study culminating with a 4,000-word essay. The course aims to engage students in self-directed, in-depth research on a chosen topic, with the development of critical and creative thinking skills as a salient desired outcome. Results from a study conducted with DP graduates from the UK showed that students perceived that their participation in the EE helped them develop critical- and independent-thinking skills (Wray 2013).

Thus, previous exploratory research, as illustrated above, provides promising evidence regarding the development of critical thinking skills in the DP. The proposed study seeks to expand these findings by implementing a rigorously validated instrument to measure objectively DP students' critical thinking abilities and to compare their levels of ability to those of comparable peers.

PROJECT GOALS

Research Objectives

The aim of the study is to examine the effects of participation in the Diploma Programme on student critical thinking skills and dispositions. Specifically, this study will investigate whether student

participation in the DP leads to higher levels of critical thinking as measured by established critical thinking assessment instruments. Moreover, the study will examine whether the critical thinking outcomes differ by gender, academic outcomes (in selected core and subject areas) and school characteristics.

Research Questions

Research questions for this study may include but are not limited to the following:

1. Which features of the Diploma Programme are expected to foster the development and enhancement of critical thinking abilities in students?
2. Drawing on a group of courses that represent a typical route in the DP, in what ways do DP students encounter, experience and develop critical thinking skills?
3. What is the relation between participation in and performance on various components of the DP and measures of critical thinking?
 - a. Which DP student characteristics and academic outcomes predict higher student levels of critical thinking?
4. Do DP students differ on average from their matched non-DP peers in their levels of critical thinking measures when covariates are taken into account?
 - a. Is the difference attributable to participation in the DP?
 - b. Alternatively, do DP students average measures of critical thinking differ from benchmarks of critical thinking in the larger comparable population (or in the normative data available)?

PROJECT DESIGN

We invite researchers to bring their own methodological expertise to the research design.

As a guiding framework, the study is expected to employ a strong comparative design that will facilitate causal inferences in term of the effects of participation in the DP on critical thinking outcomes. Vendors are expected to:

- Establish a conceptual framework (i.e., logic model) through literature review and document analysis, for example, to identify (1) key features of the DP that are expected to foster high levels of critical thinking and (2) appropriate measures of critical thinking skills and dispositions. These will then inform the final selection of instruments.
- Use existing pre-validated instruments to measure students' critical thinking abilities. Examples include Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980, 1994); Cornell Critical Thinking Tests (Ennis, Millman, & Tomko, 2005); California Critical Thinking Skills Test (Facione, 1990, 1992); College and Work Readiness Assessment (CWRA+, Council for Aid to Education, 2016)
- Implement a design that will allow for comparisons between IB students and comparable groups of peers. Vendors should aim for a design that would allow for causal inferences such as propensity score matching.

- Alternatively, comparisons with national or international benchmarks or against normative data will be considered as well, with the expectation that benchmarks are appropriate for the characteristics of the sample.
- Pre-/post-test designs with comparison samples is another alternative that can be considered.
- Secure access to a sample of DP students from government-funded (public) and/or private schools located preferably in Europe, Australia or Asia. However, alternative locations, including the United States, will be considered. IB will be able to facilitate initial contact with IB schools but access is expected to be negotiated by the vendor. The sample should be large enough to provide appropriate power for the analyses.

Relevant IB programme documents recommended for review include:

- Diploma Programme: From principles into practice
- IB Learner profile
- Diploma Programme Approaches to teaching and learning
- Theory of Knowledge guide
- Extended essay guide

Please note that the vendor is expected to consult with the IB research department regarding the development of the final study design and selection of documents for curriculum alignment. Moreover, the selection of schools for this study will be done in consultation with the IB to ensure a range of school types are included and factors such as fidelity of programme implementation are considered.

PROJECT BUDGET

The project budget for the proposed study is **USD 100,000**.

PROJECT DELIVERABLES AND TIMELINES

1. A brief interim report detailing the project's progress and preliminary findings will be expected at the mid-point of the project.
2. A penultimate draft of the final report addressing the research questions, methodology, findings, and implications/recommendations will be reviewed by the IB. A final report, with an executive summary and abstract, written in clear, accessible language will be expected at the completion of the project. The report should not exceed 30,000 words (excluding references and appendices) and must be copy-edited.
3. De-identified quantitative data sets and statistical analysis syntax/coding.
4. Publication/presentation of research findings in an academic journal/conference within twelve months of submitting final report.

Note: On a quarterly basis, vendors will be required to provide an estimate of the percentage of work completed on the project. This information is used by the IB Research Department as part of routine financial reporting.

SUBMISSION REQUIREMENTS

Proposals should include the following:

1. Description of the services that the vendor will provide.
2. Research design and methodological approach: descriptions should detail how the research design and methodological approach (including analysis of resulting data) will address the research questions outlined in the RFP.
3. Itemized budget.
4. 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 investigators will contribute to the study, and the contributions of supporting staff. It is a mandatory requirement that chief investigators take an active role in the study.
5. Evidence should be given to demonstrate the vendor's capacity to write high quality research reports, this could include a recently published research report where the principal investigator is the first author.
6. CVs can be included as attachments but these should only provide information relevant to the proposed study.
7. Contact details for two referees. It is desirable that these include previous organizations the vendor has undertaken commissioned studies for (please note that referees will be contacted).
8. Timeline of research activities and deliverables.
9. Proposals should not exceed 4000 words (appendices excluded).

REVIEW PROCESS & CRITERIA

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

DEADLINES & WHERE TO SUBMIT PROPOSALS

Review of proposals will begin immediately upon receipt. All proposals received on or before **14 December 2018** will be considered. The project should be completed by December 2019.

*An email notification of a vendor's intent to respond to this RFP should be sent to the contact noted below by **28 November 2018**.*

Please submit proposals electronically or by mail to:

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REFERENCES

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

Ennis, Robert H., Jason Millman, and Thomas Norbert Tomko, 2005. *Cornell Critical Thinking Tests Level X & Level Z: Manual*, Seaside, CA: Critical Thinking Company, 5th edition.

Facione, Peter A., 1990. *California Critical Thinking Skills Test, CCTST – Form A*, Millbrae, CA: The California Academic Press.

Facione, Peter A., 1992. *California Critical Thinking Skills Test: CCTST – Form B*, Millbrae, CA: The California Academic Press.

Watson, Goodwin, and Edward M. Glaser, 1980. *Watson-Glaser Critical Thinking Appraisal: Forms A and B; Manual*, San Antonio, TX: Psychological Corporation,

Watson, Goodwin, and Edward M. Glaser, 1994. *Watson-Glaser Critical Thinking Appraisal, Form B*, San Antonio, TX: Psychological Corporation.

Wray, D. 2013. *Student perceptions of the value of the International Baccalaureate extended essay in preparing for university studies*. Coventry, UK. University of Warwick. https://www.ibo.org/contentassets/d1c0accb5b804676ae9e782b78c8bc1c/theibextendedessayproject_finalreport_wray.pdf