

# RESEARCH SUMMARY

*Comparative analysis of the International Baccalaureate Primary Years Programme (PYP) and Middle Years Programme (MYP) in the context of the Indian education system*

**Summary developed by the IB Research department based on a report prepared by:**

**The National Recognition Information Centre for the United Kingdom (UK NARIC)**

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## Background

With over 120 International Baccalaureate (IB) World Schools in India, the IB commissioned the National Recognition Information Centre for the United Kingdom (UK NARIC) to undertake a comparative analysis of two of its programmes—the Primary Years Programme (PYP) and the Middle Years Programme (MYP)—within the context of the Indian education system. The purpose of this study was to compare the underpinning philosophies, aims and principles of the IB and Indian education systems.

To this end, researchers from UK NARIC undertook a comparative analysis that reviewed the PYP and MYP in relation to four reference points in the Indian education system.

- The Indian National Curriculum Framework (NCF) (2005)
- The National Council of Educational Research and Training (NCERT) primary and secondary education syllabuses in three subjects: mathematics, science and social studies
- The Indian Certificate of Secondary Education (ICSE—Class IX–X) from the Council for Indian School Certificate Examinations (CISCE) in three subjects: mathematics, science and social studies
- The Secondary School Examination (qualification: All India Secondary School Certificate) (Class IX–X) from the Central Board of Secondary Education (CBSE)

## Research design

To complete this study, UK NARIC conducted a desk-based document analysis using Indian and IB-

published curriculum guides, syllabuses and assessment framework documents. A review of these documents informed three levels of analysis: framework level, national level, and qualification and subject level.

The framework-level analysis looked at the philosophical underpinnings of the IB and Indian education systems, making particular reference to the IB learner profile and the Indian NCF (2005) respectively. The national-curriculum-level analysis examined the PYP and MYP against the primary and secondary syllabuses in the NCERT for mathematics, science and social studies. Next, the qualification and subject-level analysis examined the MYP in mathematics, science and social studies in relation to the Class IX and X syllabuses in India, as prescribed by two of the central education boards: the ICSE and CBSE. In addition to the subject analysis of the CBSE and the MYP, the core components, curriculum mission and goals, core competences and outcomes for the CBSE were examined using a qualitative analysis.

## Findings

The study found many similarities between the IB and Indian education systems, both in principle and in practice.

In terms of the underpinning philosophies and aims, UK NARIC concluded that it was evident from the framework-level analysis and the examination of the CBSE core components that both the IB and Indian systems seek to:

- emphasize a holistic approach to education and development
- promote active and lifelong learning
- develop students' ability to construct their own

knowledge, encouraging and supporting them to make connections between what they learn in the classroom and the world outside it

- develop communicative and inquisitive learners who are knowledgeable in subjects
- ensure appreciation for individuality and the individual differences of students
- support the development of open, democratic classrooms
- focus, at this level of education, on using assessment primarily as a means to reflect on, and improve, the teaching–learning process.

The CBSE and IB also share many principles and components including the development of life skills and global perspectives. Reflecting the national context, the CBSE includes an additional focus on teaching the values of the Indian constitution. Although the Indian constitution is not a part of the IB framework, the framework would enable IB World Schools to incorporate specific content on the constitution, as required. The CBSE and IB further focus on similar learning methods (such as value-based, collaborative, conceptual, holistic), skills (such as communication, problem-solving, language, technology) and attributes (such as citizenship, empathy, creativity, open-mindedness, individuality).

### Subject level findings

At the subject level, the national curriculum analysis at the primary level (NCERT and PYP) found similar principles and content between the programmes in the three selected subjects: mathematics, science and social studies (table 1). Both the NCERT and the PYP aim to develop competent learners in mathematics, investigative skills in science and an understanding of history, society and the world around them in social studies. A comparison of the cross-curricular linkages also

demonstrated that both the IB and the Indian boards aim to make connections across the curriculum, and that the IB has a framework in place for ensuring these linkages are taught within the curriculum.

Some themes, principles and content of primary education (in the IB and NCERT) are similarly present in secondary education. For instance, in primary and secondary education, both programmes highlight the importance of teaching to real-life contexts and applying the mathematics syllabuses to real-life experiences. Inquiry is a large focus of the primary and secondary science syllabuses for both the IB and NCERT. In social studies, the NCERT principles and content frequently focus on Indian contexts, which would need to be adapted for the IB programmes. As noted in the full report, the CBSE and CISCE are developed based on the standards set in the NCERT; therefore, comparisons of the PYP and MYP to syllabuses prescribed by the NCERT, CBSE and CISCE resulted in similar key findings.

Differences noted can be largely categorized as structural and contextual. In India, the underpinning philosophy is stated in the NCF, while the NCERT develops and publishes the key themes and principles for the curriculum, textbooks and teaching along with the core topics to be covered. The CISCE and CBSE then use the NCERT syllabuses to develop the syllabus and assessments for each subject. Through this process, the Indian NCF, NCERT, CBSE and CISCE are framed in the national context, with specific mention made to Indian history and heritage, the workings of Indian democracy and the values of the Indian constitution. Structurally, the IB defines a framework for the PYP and MYP, respectively, that is underpinned by the IB learner profile. As international programmes, the PYP and MYP are not tied to any national context; instead, the IB encourages the development of common skills, attributes

Subject area	NCERT	PYP	MYP
Mathematics	Mathematics I-V; Mathematics VI-VIII	Mathematics	-
	Mathematics IX-X[II]	-	Mathematics
Science	Science VI-VIII	Science	-
	Science IX-X	-	Science
Social studies	Social Science VI-VIII	Social studies	-
	Social Science IX-X[II]	-	Individuals and societies

Table 1. Syllabuses reviewed in the IB–NCERT comparative analysis

and objectives for all learners. From this, each IB World School then develops the syllabus to reflect the local, regional or national context in which it is located.

These structural and contextual differences are demonstrated in the key findings from the curriculum comparison. For example, the NCERT syllabuses, in the subjects and classes studied, are mostly knowledge-based, outlining the specific content to be taught and the teaching hours recommended for each major topic area. The PYP and MYP are outcomes-based, where overall expectations for a topic are included as part of the framework, but specific content and teaching time is determined at the school level. As a result, some topics and sub-topics within the NCERT curriculum are not readily identifiable within the IB programmes, while a substantial number of similarities can be observed between the broader topic areas, thereby indicating clear potential for the NCERT content to be adapted by IB World Schools under the IB framework.

Differences can also be observed in the assessment used by the IB and the two boards of education. All three employ internal and external assessment at the secondary level, although the external assessment is optional in the case of the MYP. When comparing the MYP specimen eAssessments for the three subjects and the CBSE question-design guidelines from the 2015–16 syllabus, clear differences could be seen, both in the number of questions and the weighting assigned to the different question typologies. The CBSE is longer and typically includes a larger number of questions, each designed to test a given typology (including, but not limited to, knowledge recall, understanding, application and evaluation) while the MYP includes a smaller number of questions that primarily test application, evaluation and other higher-order thinking skills. When looking at the assessment criteria used in the ICSE and the MYP, the ICSE descriptors for the internal assessment in the three subjects are broad and focused on the assessment task at hand. The MYP assessment criteria are used for multiple assessment tasks but are more descriptive and relevant to the objectives of the overall subject.

In the ICSE and the IB, learning outcomes are developed by schools; however, a comparison of sample learning outcomes demonstrates that both include statements for students to understand and apply their knowledge and to analyse or discuss ideas. In mathematics and science, the ICSE includes a sample outcome for students to apply their knowledge in other disciplines,

which is consistent with the MYP interdisciplinary approach.

Cross-curricular linkages—or connections between different disciplines, subjects or knowledge across the curriculum—can be identified within the MYP, CBSE and ICSE. Each of the programmes prescribe these linkages to different levels and through different techniques. The MYP facilitates these linkages most noticeably through key concepts that are shared between subjects and allow students to consider the same concept in the context of different disciplines. These key concepts are mostly similar to the aims and topic areas included within all three subjects in the CBSE and ICSE. Therefore, the MYP framework for interdisciplinary teaching and learning is compatible with the Indian system for cross-curricular linkages.

## Summary

Overall, the key findings from the three analyses undertaken by NARIC UK demonstrate clear similarities between the PYP and MYP and the Indian education system. Moreover, there exist many shared principles and aims, as well as a framework compatibility, that should enable IB World Schools in India to deliver the PYP and MYP in a way that is well-matched with the aims, values and curriculum requirements of the Indian NCF and central education boards.

This summary was developed by the IB Research department. A copy of the full report is available at [www.ibo.org/en/about-the-ib/research/](http://www.ibo.org/en/about-the-ib/research/). For more information on this study or other IB research, please email [research@ibo.org](mailto:research@ibo.org).

To cite the full report, please use the following.

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