

# Research summary

## *A critical analysis of the International Baccalaureate Primary Years Programme in India*

**Based on a research report prepared for the IB by:**

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## Introduction and overview

The focus of this research centres on the development and success of the International Baccalaureate (IB) Primary Years Programme (PYP) in India. In addition to the PYP, the IB offers three high-quality and challenging educational programmes for a worldwide community of over 3,500 schools: the Middle Years Programme (MYP), the Diploma Programme (DP), and the Career-related Certificate (IBCC). IB programmes aim to prepare students for life in a globalized 21st century, and develop future citizens who will create a better and more peaceful world. The PYP, launched in 1997 for students aged 3 to 12, focuses on the development of the whole child as an inquirer, both in the classroom and in the world outside. The PYP is offered in 976 schools worldwide and in 41 schools in India.

The Indian education system has dramatically evolved over the past few decades, and IB schools in India are a relatively recent phenomenon that has been gaining popularity and attention. This study critically examines the curriculum inputs, transactions, learning outcomes and implementation of the PYP in the Indian context, with a view towards understanding the impact on institutions and individuals associated with the programme.

## Research methodology

This case study research utilizes surveys, interviews and observations to critically analyse the PYP in India. The objectives of this study are to examine:

1. the implementation of the PYP curriculum framework, standards and practices by schools in India, particularly in terms of pedagogy, processes and both academic and non-academic learning outcomes
2. the perceptions of the teachers, students, parents, school leaders (both heads of school and programme coordinators) concerning the implementation of the PYP, with a focus on the impact on the whole school learning environment
3. the benefits and challenges experienced by schools implementing the PYP in terms of institutionalization, capacity building and paradigm shifts of teaching, learning outcomes and other social, cultural, economic and regional aspects in India.

To achieve these objectives, 11 separate instruments were administered to a sample of 12 PYP schools. Both qualitative and quantitative data were collected and analysed. Most of the schools in the sample are privately operated and located in semi-urban and metropolitan areas of cities, where the socio-economic status of people is comparatively higher and expatriates reside. A total of 16 school leaders (both heads of schools and programme coordinators), 79 teachers, 368 students and 96 parents participated in the study.

**Table 1. Research instruments**

Target	Instrument	Purpose
School leaders	Questionnaire for school authorities	Assessed curriculum management, programme coordination and coordination with other schools and stakeholders
School leaders/teachers	Teacher development perception scale	22 items and 5 open-ended questions on perceptions regarding the induction programme, in-service training and assessment and feedback
School leaders/teachers	Leadership behaviour descriptive questionnaire (LBDQ)	Asked teachers to evaluate the performance of school leaders
Teachers	Classroom observation protocol	59 items to document pre-active, inter-active and post-active teacher behaviours

Teachers	Job satisfaction scale	20 items pertaining to the services and other general conditions in schools
Teachers	Bandura's (1997) self-efficacy scale	Adapted to gain an understanding of teachers' self-efficacy beliefs related to school activities and areas of difficulty
Students	Yadav and Gupta's (2011) emotional intelligence scale	61 items modified to measure the emotional intelligence of PYP students
Students	Attitude scale	30 items pertaining to year 5 students' attitudes towards school, the teaching–learning process and teachers
Students	Achievement tests	Three different exams used to measure academic performance on math, science and English
Parents	Perception scale for parental involvement in the PYP	30-item perception scale collected attitude information from parents on the Parent Association (PA), Parent Teacher Association (PTA) and parental involvement in the PYP
Parents	General perception scale	19-item survey on general perceptions about the PYP and towards PYP curriculum

## Findings

### School leaders

#### Questionnaire for school authority (n=16)

School heads indicated they appraise PYP teachers through:

- classroom observation
- planning and organizational skills
- self-appraisal by teachers
- enthusiasm and involvement in co-curricular activities (CCA)
- interaction with colleagues, parents and students.

With regard to curriculum planning, 38% designed curriculum using IB documents; 25% collaborated with teachers and 12% used national education requirements and documents in the planning process. With regard to coordination efforts, the majority of heads indicated that they coordinate with other PYP schools in India regarding curriculum design, while half coordinated with the Indian school board. Almost half of the school leaders mentioned students' parents as important contributors to the PYP experience and cited the PTA as an important organization within the school.

#### Leadership behaviour descriptive questionnaire (LBDQ) (n=79)

This instrument asked teachers to rate the school leadership. Results were combined to provide a picture of PYP leadership collectively, and individual schools were not the unit of analysis. Variables, scored on a scale of 1 to 5, were combined into two dimensions: *Consideration* (the ability to establish mutual trust and respect) and *Initiating structure* (the ability to establish effective communication processes) (Halpin 1957). Each trait was assessed as a composite of 15 variables, with non-responses removed to prevent a negative bias in the composite computation.

**Table 2. Means and standard deviations (SD) for the leadership dimensions**

Dimension	Mean	SD
Consideration ( <i>n</i> =60)	63.2	7.253
Initiating structure ( <i>n</i> =58)	63.9	4.822

The *consideration* dimension had a mean score much higher than previous research indicated in the manual (Halpin 1957), which suggests a range of means between 37.9 and 41.6. The *initiating structure* dimension had a nearly identical mean score as *consideration*, but a smaller standard deviation, indicating less variability in scores. This mean was also much higher than the previous research indicated in the manual, which offered a range of means between 41.4 and 44.8. Sample sizes in this study were comparable to previous research.

#### Teacher development perception scale (*n*=16)

School leaders indicated their perceptions regarding teacher selection, the induction programme, in-service training, and assessment and feedback. The 22-item scale and 5 open-ended questions were developed by the project director, Dr. Pushpanadham, in consultation with an expert panel. The results suggest that school leaders use a variety of qualifications to select teachers, including academic qualifications, content competencies, pedagogical competencies and attitudes towards teaching and learning. Most school leaders found that in-service development training was useful, as were the inductions to the IB programmes they completed. In general, responses related to assessment and feedback of professional development were positive.

## Teachers

### Analysis of classroom observations

The classroom observation schedule consisted of 59 items organized into three major parts: pre-active, inter-active and post-active. A total of 32 lessons in PYP classrooms were observed using the protocol developed by the project director. The objective was to document and describe common practices observed. Results are organized into 5 areas:

1. Observations on lesson preparation suggest that the PYP teachers were well prepared before teaching the lessons.
2. Observations of the teaching–learning process enacted in the classroom suggests that more than 60% of the lessons observed were either “effective” or “good” in all the activities of the inter-active phase of classroom transaction.
3. Data on the use of teaching skills in the classroom suggests that the majority of the teachers were using teaching skills described as “effective” or “good”.
4. The assessment and evaluation processes were rated as generally “effective” or “good”.
5. Areas needing improvement were identified as the use of the transdisciplinary teaching model and management of internal and external classroom disturbances.

Because only 32 classrooms were visited, the data is not generalizable across all classrooms. Additionally, it was not possible to observe classrooms over multiple weeks or different points in the year, so the data cannot account for a complete description of each classroom.

### Job satisfaction of PYP teachers (*n*=79)

This scale, consisting of 19 items, pertained to the service and other general conditions in the PYP schools. The findings indicated that the 86% of the teachers were satisfied with the professional programmes conducted by the schools. The majority were also satisfied with the training they received and felt that communication and information flow in their schools was good. Most teachers were satisfied with school leadership, collegueship and parental involvement in the PYP.

### Teacher self-efficacy survey (n=79)

Bandura's (1997) teacher self-efficacy scale was adapted and used for PYP school teachers to gain an understanding of the teachers' self-efficacy beliefs related to school activities and areas of difficulty. This scale consisted of 30 items, rated on a scale of 1 to 9, organized into seven sub-scales. Each sub-scale was a composite of one or more items, designed to each represent a unique underlying factor. The factors were comprised mutually exclusively and included:

- efficacy to influence decision making
- efficacy to influence school resources
- instructional self-efficacy
- disciplinary self-efficacy
- efficacy to enlist parental involvement
- efficacy to enlist community involvement
- efficacy to create a positive school climate

Because each composite sub-scale was calculated by summing the responses from different numbers of items, a standardized mean was calculated for each factor. The factors with the highest means were disciplinary self-efficacy (7.48), efficacy to enlist parental involvement (7.41), and efficacy to create a positive school environment (7.39). The factor with the lowest standardized mean was efficacy to enlist community involvement (4.59). This may indicate that there is not much of opportunity for community involvement at the schools, or that some teachers may not have considered this item to be appropriate. All of the Cronbach's alphas were satisfactory.

**Table 3. Results from Bandura's teacher self-efficacy survey**

Factor	Standardized mean	Sample size (n)	Cronbach's alpha	Number of items
Efficacy to influence decision-making	5.57	78	0.725	2
Efficacy to influence school resources	7.24	76	--	1
Instructional self-efficacy	6.86	68	0.846	9
Disciplinary self-efficacy	7.48	79	0.781	3
Efficacy to enlist parental involvement	7.41	78	0.797	3
Efficacy to enlist community involvement	4.59	49	0.676	4
Efficacy to create a positive school environment	7.39	67	0.897	8

## Students

### Emotional intelligence of grade 5 PYP Students (n=368)

Students in the final year of the PYP responded to the emotional intelligence survey, which was analysed by calculating the item mean scores for the group. Half of the items were phrased negatively and half were phrased positively. An abbreviated version of the results is presented in Table 4. Students generally responded with strong agreement to the positive items and with strong disagreement to the negative items, indicating a high degree of overall emotional intelligence.

**Table 4. Summary of descriptives for the emotional intelligence scale**

	Positively-stated items <i>Strong agreement (5) indicates high emotional intelligence</i>	Negatively-stated items <i>Strong disagreement (1) indicates high emotional intelligence</i>
Mean	4.17	1.88
Max	4.70	2.13
Min	3.76	1.53
Median	4.17	1.92
Sample item	I am fully aware of my anger and its consequences.	If I don't succeed in homework, I quit it.

**Attitude of students in the PYP (n=368)**

Students in their final year of the PYP were asked to rate the extent of their agreement with statements relating to their school, learning and teachers. The survey responses suggest that over 90% of the students indicated positive feelings towards their school. Additionally, the students indicated positive feelings on the majority of items relating to the teaching–learning process. Specifically, 89% of the students agreed that the school projects assigned to them are meaningful and important, 85% agreed they had choices to decide the way in which they like to work and 83% agreed they were involved in decision-making. While agreement for all items was at least 70%, it is interesting to note the item with the lowest agreement related to the importance of learning versus the importance of grades (72%). Eight per cent did not agree that learning was more important than good grades. Overall, students also indicated positive attitudes towards their teachers. Specifically, 87% percent agreed that their teachers are supportive, 80% agreed that their teachers always praise them for their accomplishments and 77% agreed that their hard work is always rewarded. It is interesting to note that 16% indicated they were afraid of their teachers.

**Academic performance**

Three different researcher-created exams were used to measure student academic performance, focusing on math, science and English. Again, the unit of analysis was the group, not the individual, so scores have been merged to provide a complete picture of PYP students in the sample schools. The objective of administering the scholastic tests was not to find the achievement of the students in terms of their scores, but to identify in which competencies the students excelled and in which they were lacking. The results are intended to be descriptive and provide insights into areas warranting further exploration. It is possible that item wording impacted student correct and incorrect responses as well. The results suggest that two areas in math, four areas in science and two areas in English might be challenging for the students, but there is no information or comparison on how a non-IB student might perform on the same exams.

**Math:** The 20-item test was administered to 351 students. The average percentage correct for all items was 62.29%, with performances on each item ranging from 29.75% to 79.75% correct. The items relating to determining time and finding profit/loss were areas of strength for the students, with over 75% of the students correctly solving these problems. Two of the 20 items, both relating to simple interest and converting percent into decimals, were challenging to more than 60% of the students. The incorrect answers for these items were analysed, and results indicated that students may have had trouble computationally rather than conceptually.

**Science:** The 20-item test was administered to 385 students. The average percentage correct for all items was 56.66%, with performances on each item ranging widely from 12.47% to 85.97% correct. Out of 20 items on the science scholastic test, four items resulted in less than 40% of students responding correctly. These included:

- identifying connections and patterns
- understanding the cause and effect relationship
- using learning in science to plan positive and realistic actions
- explaining how views and customs were formulated in the society.

It should be noted that two other items corresponding to “cause and effect” were correctly answered by over 65% of the students.

**English:** The 31-item test was administered to 382 students. The average percentage correct for all items was 70.94%, with performances on each item ranging from 24.35% to 94.76% correct. The assessment was organized into four sections:

1. reading skills
2. writing skills (verbs, nouns, adjectives, adverbs, transition verbs and pronouns)
3. writing skills (tenses, prepositions and correct spellings)
4. writing skills (writing a formal letter).

The PYP students excelled on the writing skills (tenses, prepositions and correct spellings) section; over 80% of the students answered each item correctly. The writing skills (verbs, nouns, adjectives, adverbs, transition verbs and pronouns) section contained two areas in need of improvement: use of appropriate interrogative pronouns and the use of verbs.

## Parents

### Perception scale for parental involvement in the PYP (n=96)

A 30-item 5-point agreement scale, developed for this study, was used to collect attitude information from the parents' point of view, and focused on the Parent Association (PA), Parent Teacher Association (PTA) and parental involvement in the programme. On average, 30% of parents did not respond to questions relating to the PA or PTA. However, the responses recorded were generally positive. The majority of respondents indicated that the PA and the PTA are available, that they are members, often attend meetings, and find the organizations very useful. Specifically, 64% of respondents indicated that they received guidance at PTA meetings about their child(ren) and that they used PTA meetings as a means for contributing to the programme. Unlike the items relating to PA and PTA, the majority of parents responded to the items relating to parental involvement in the PYP. Ninety-six per cent of parents agreed that the PYP school regularly invites parents to discuss the progress of their children. The majority of parents appreciated the IB induction programmes for parents, the academic guidance including information about assessment/evaluation and IB objectives. Most importantly, the majority of parents (around 90%) reported that the PYP teachers were competent, that their children were performing well and that they are satisfied with the PYP.

### General perception scale for parents (n=96)

The parents' perceptions of PYP were measured through a 19-item survey with a 5-point agreement scale. The survey was organized into two mutually exclusive sections called “general perceptions about the IB PYP” and “perceptions towards the PYP curriculum”. The responses received relating to the general perception of the IB programme were overwhelmingly positive. Over 80% of parents agreed that the PYP provides a quality education and that they were satisfied with the progress on their child(ren). The responses received relating to the perceptions of the IB curriculum were also overwhelmingly positive. Again, over 80% of parents agreed that PYP curriculum was both challenging and enlightening, immersing students in global issues and increasing global awareness. In general, parents felt that the IB curriculum was appropriate for students of all cultures, and they were satisfied with the programme as a whole.

## Issues and challenges with the PYP in India

In some of the above surveys, parents and teachers were offered an opportunity to discuss their perception of issues and challenges with the PYP's execution in India. In general, teachers did not report facing many problems with the programme, although some reported issues with time management due to a heavy workload and paperwork. However, these teachers indicated that issues could be resolved with more IB professional development workshops and better planning. Parents, for the most part, indicated that there were no major problems with the PYP. Of those parents who did indicate potential issues, the biggest roadblock was limited access to higher education after completing the PYP and lack of teachers trained in international curriculum. To strengthen the PYP, parents suggested more parental involvement and increased recognition of the IB

programmes. Still, parents generally seemed happy with the programme, as they indicated that their main reasons for sending their children to IB schools were to achieve overall childhood development with a global curriculum and belief in the IB teaching philosophies.

## Conclusion

The major findings have been drawn in terms of curriculum adaptation, implementation and impact on the students' learning outcomes, along with the perceptions of PYP teachers, students, parents and school heads concerning the PYP implementation in India. In general, PYP teachers, students, parents and school heads had a positive opinion of the PYP in India. The international curriculum was valuable from all perspectives, with students displaying high emotional intelligence and positive academic performances for the majority of students on the majority of the academic topics. Parents feel involved with the programme and happy with the education that their children were receiving. PYP teachers were observed delivering strong, engaging lessons, were satisfied with their jobs and felt that they had control over their classrooms. From all aspects, PYP implementation appears to have a positive impact in India.

## References

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

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