

## RESEARCH SUMMARY

### *Evaluation of International Baccalaureate Programmes in Texas Schools*

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State of Texas Education Research Center at Texas A&M University  
January 2010

#### **Abstract**

This study examines the impact of the PYP and MYP in Texas classrooms. IB schools performed as well as their comparison schools in mathematics and reading achievement as measured by the Texas Assessment of Knowledge and Skills (TAKS). Furthermore, structured classroom observations indicated that favourable instructional practices and student behaviours and activities occurred more frequently in IB classrooms than in non-IB Texas classrooms. Researchers concluded that while this is suggestive that the overall quality of instruction is higher at IB schools, implementation varied from school to school, and some of the favourable instructional practices are used more often in some IB schools than others. Positive outcomes of the IB programmes as identified by teachers and administrators in case studies included increased teacher collaboration, authentic assessment, increased student motivation for learning, development of critical thinking skills, and increased student global and cultural awareness. Challenges identified by teachers and administrators included staff recruitment and retention, balancing the IB programmes with state and district requirements, the additional time needed for collaborative lesson planning and paperwork, the difficulty and workload for students, student mobility, and lack of support from districts, parents or teachers .

## PROJECT OVERVIEW

The International Baccalaureate Organization (IBO) supports schools in providing students with challenging academic programmes that encourage critical thinking from an intercultural perspective (Nugent & Karnes, 2002). The IBO offers three programmes of study: the Primary Years Programme (PYP), the Middle Years Programme (MYP), and the Diploma Programme (DP). At the time of this study, Texas had over 90 schools, 30 offering the PYP and 27 offering the MYP, that are fully authorized IB programmes or at some stage in the authorization process (Texas International Baccalaureate Schools, 2010).

Numerous studies have documented higher SAT scores, college acceptance rates, and college GPAs for IB Diploma Programme students as compared to the general student population (IBO, 2003). However, few evaluations have examined the efficacy of the PYP and the MYP and the value that these specific programmes add to students' education. To address this knowledge gap, the State of Texas Education Research Center (ERC) at Texas A&M University was commissioned by the IBO to conduct an external evaluation of Texas International Baccalaureate Schools.

This mixed methods evaluation study was designed to examine the impact of the IB PYP and MYP on Texas students' reading and mathematics achievement. Specifically, a qualitative component comprising interviews and classroom observations examined the extent to which (i) teachers' instructional practices, (ii) students' learning experiences, and (iii) features of IB instruction and transdisciplinary themes of global significance were enacted in selected case study schools and classrooms. This was complemented by a quantitative component that analyzed the performance of IB PYP and MYP schools on standardized Texas achievement exams as compared to a non-IB comparison group. The quantitative analysis also considered how specific factors such as length of IB programme implementation, gender, and pre-achievement differentially influenced the reading and mathematics achievement of students with varying demographic profiles.

## RESEARCH DESIGN

The evaluation consisted of two methodological components: (a) a multiple-case research design and (b) an analysis of secondary data, that is, the Texas Assessment of Knowledge and Skills (TAKS) mathematics and reading scores. In terms of the case studies, a total of four PYP and four MYP schools were carefully selected to meet the criteria of the project and to allow for literal replication and replication logic (Yin, 2003). School demographics and geographical areas were also a factor in choosing the cases.

Research teams from the ERC at Texas A&M University conducted on-site interviews and direct observations at the eight selected case study schools, using interview and observation instruments developed specifically by the evaluation team for this particular study. The Overall Observation of Features for International Baccalaureate Programme Instrument (OFIBP) was used at the end of class visitations to measure, on a 3-point scale of *none*, *some*, and *extensive*, the extent to which certain

instructional processes or strategies, as well as student learning behaviors and activities were employed and/or demonstrated during the class period.

Additionally, in order to determine whether differences existed among Texas schools implementing the PYP and MYP as compared to non-IB schools, 22 PYP schools and 21 MYP schools were included in this study as part of a secondary data analysis of achievement test scores. Control schools for each PYP and MYP school were selected by matching demographic variables such as percent of economically disadvantaged students, ethnicity, percent of limited English proficient students, and 2007/2008 reading and mathematics scale scores from the 2007-2008 Comparable Improvement Report of the Academic Excellence Indicator System (AEIS) in the Texas Education Agency website. Both the selected PYP and MYP case study schools and their comparison schools were very similar in terms of their ethnicity and socioeconomic status. Using TAKS mathematics and reading scores, separate analyses were performed for MYP and PYP, comparing the IB schools to similar schools from the same districts.

## SUMMARY OF FINDINGS

In terms of student performance on the TAKS mathematics and reading standardized assessments, no significant differences were found between IB schools and their comparison schools. In other words, IB schools performed as well as their non-IB peers in mathematics and reading achievement as measured by the TAKS. Factors such as length of IB programme implementation, student gender and pre-achievement<sup>1</sup> were not found to be significant predictors of TAKS mathematics and reading achievement.

In addition to the comparison of standardized test scores, the researchers conducted further qualitative inquiry that focused on examining the efficacy of the IB PYP and MYP in terms of the extent to which unique aspects of these programmes contribute to positive student outcomes. Challenges associated with programme implementation were also of pertinent interest. On the whole, qualitative findings indicated that instructional practices and student behaviors/activities observed in IB classrooms were favorable as compared to those found in similar classrooms in Texas schools (Waxman et al., 2009; Waxman & Padrón, 2004). This suggests that the overall quality of instruction observed in IB schools is generally higher than in comparative non-IB Texas schools. It is important to note, however, that some significant differences in instructional practices and learning activities were found among the IB schools. This in turn suggests that programme implementation varied from school to school and some IB schools employed favorable instructional practices more often than others. Furthermore, while all schools identified concerns and challenges related to IB programme implementation, they all strongly emphasized characteristics of the IB programmes that were recognized as beneficial for their students.

Several common themes emerged from an inductive analysis of the qualitative interview and classroom observation data. Some important but less prevalent themes were also identified. These are summarized in the following sections according to (i) notable instructional practices and student learning behaviours observed across different IB schools, (ii) the challenges related to the

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<sup>1</sup> The only significant interaction found revealed that both IB and non-IB students in the lowest quartile in MYP mathematics (lowest 25%) did as well as students in the second quartile (25<sup>th</sup>-50<sup>th</sup> percentile).

implementation of an IB programme, and (iii) the benefits or advantages of implementing an IB programme.

### ***Notable instructional practices, learning behaviours and IB features observed in different IB schools***

#### Instructional practice

Systematic classroom observations of 90 classrooms revealed that instruction in most of the case study schools was active, with teachers often engaging students, exploring new skills and key concepts, explaining (i.e., connecting prior knowledge to new learning), elaborating (i.e., applying new learning to similar situations), and evaluating (i.e., assessing understanding formally and informally).

The following instructional practices were most commonly observed: (i) teachers provided feedback, (ii) teachers were engaged in generating interest and assessing prior knowledge, and (iii) teachers initiated experiences, discussions and activities. Most teachers were also observed to be connecting ideas and concepts, allowing students to develop concepts or procedures, providing feedback and distributing feedback evenly to all students. Instructional practices that were not extensively observed included the following: (i) teachers provided students with options for problem solving, (ii) teachers assisted students in generalising learning to other situations, and (iii) teachers integrated technology into the lesson.

A few significant differences ( $p < 0.1$ ) were noted among the case study schools. For instance, teachers at three PYP schools<sup>2</sup> were observed to explore more with students in discovering new skills and key concepts as compared to other schools. Teachers at two PYP schools<sup>3</sup> were observed to employ elaborating strategies (i.e., applying new learning to similar situations) more often than peers at other schools. Teachers at one PYP and one MYP school<sup>4</sup> were observed to act as a coach/facilitator more frequently relative to teachers at other schools. Last but not least, teachers at one MYP school<sup>5</sup> were observed to integrate feedback and assessment into their instructional cycle more than teaching peers in other schools. On the whole, teachers at two specific PYP schools<sup>6</sup> were observed to be using more effective instructional practices as compared to the other case study schools.

#### Student learning behaviours

Students in the IB classrooms were observed as being engaged in learning activities to a great extent. To a moderate extent, students were observed to (i) connect ideas and concepts, (ii) initiate and assume responsibility for experiences, discussions, and activities, and (iii) participate in learner-centred activities. Conversely, students were not often observed to (i) demonstrate meta-cognitive strategies, (ii) utilize different ways to answer questions, (iii) participate in problem solving, and (iv) use technology to learn basic and 21st century skills.

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<sup>2</sup> These schools (pseudonyms) are: PYP School Champ, PYP School Win, PYP School Fame

<sup>3</sup> PYP School Champ, PYP School Win

<sup>4</sup> PYP School Champ, MYP School Hope

<sup>5</sup> MYP School Hope

<sup>6</sup> PYP School Champ, PYP School Win

When comparing student learning behaviours across schools, two notable differences were found. First, students at PYP School Champ were observed to be using meta-cognitive skills more frequently than peers in other schools. Second, students at PYP School Win were observed to employ different ways to answer questions more frequently as compared to students in other schools. Overall, students at PYP School Champ and MYP School Hope were observed to demonstrate more effective student learning behaviours and activities as compared to other schools.

### IB instructional features and themes

In terms of IB instructional features and transdisciplinary themes of global significance, these were not found to be particularly prevalent in the eight case study IB schools and their classrooms. In broad terms, to a slight extent only, teachers were observed to (i) provide opportunities for students to assume responsibility and initiate classroom activities, (ii) begin lessons with what students already know from home, community and school, (iii) vary activities to include students' preferences, and (iv) provide opportunities for students to learn about their global environment. However, few instances of engagement with IB themes (e.g., sharing the planet, how we organize ourselves, how the world works, etc.) were noted in the classrooms. IB features such as providing opportunities (i) for parents/families to participate in instructional practices, and (ii) for students to learn about physical, social and emotional health rated particularly low in terms of classroom occurrence. Only one MYP school (Hope) was noted to implement IB features and themes to a moderate extent. It is important to note, however, that the researchers highlighted that these findings should be viewed cautiously, since they are based only on a limited number of observations in each school.

### ***Challenges Related to Implementation of the IB Programme***

There are nine prevalent themes that addressed the challenges of implementing an IB programme. These are as follows: (a) retention of staff/adjustment period for new teachers, (b) balancing the IB philosophy with state and district requirements, (c) providing on-going IB training/professional development for teachers, (d) teacher time required for planning lessons and completing IB paperwork, (e) difficulty of programme for students/amount of work required, (f) student mobility/adjustment time for new students, (g) bureaucracy/lack of support from district offices, (h) lack of parental support for the programme, and (i) lack of teacher support for the programme.

### Staff recruitment and retention

All eight case study schools identified the recruitment and retention of IB teachers as a challenge. Identifying position candidates who are experienced IB teachers is extremely difficult; in fact, an overwhelmingly recurrent comment by teacher respondents was that they knew nothing about the IB prior to being employed in their current role of teaching the IB programme. When new teachers are hired into the programme, they face a steep learning curve in becoming a competent IB teacher. According to one principal, this took at least 2-3 years. Although respondents indicated that teachers who are happy with the IB programme tend to stay in the school in which they are trained, the IB programme is not for everyone. Even when teachers leave for positive reasons, such as receiving a promotion, it creates a burden for the school in terms of finding someone to fill the open position.

### Balancing IB philosophy with larger regulatory requirements

Balancing the IB philosophy with state and district requirements was a challenge identified by seven of the eight case study schools. Most of the schools specifically referred to concerns that the IB programme would not adequately prepare their students for the TAKS. Even in schools where the TAKS scores had consistently improved since implementing the IB programme, fears were expressed that scores would not continue to rise and that consequently, the IB programme would be blamed by the state and district. Respondents also discussed challenges in aligning the IB programme with the Texas Essential Knowledge and Skills (TEKS), the state standards for what students should know and be able to do. Interviewees were frequently heard to comment on the fact that district requirements prevented the schools from using the planner as it was formerly used, and that it was a challenge to follow the IB philosophy and yet meet district and state requirements for standardized testing.

### Cost of teacher training

For the majority of the schools, providing IB training for new teachers, as well as offering ongoing professional development for experienced IB teachers, is a challenge. The issue of cost related strongly to this concern. Although respondents were consistently positive about the value of training from the IB organization, they noted that it is expensive. Some schools try to send their teachers to observe classrooms in other IB schools regularly, but money for travel and to pay for substitute-teachers is scarce, particularly in this time of shrinking budgets.

### Teaching IB a time-intensive endeavour

Many of the schools identified the time commitment required from teachers in the IB programme as a challenge, in some cases even as an "overwhelming" challenge. At the same time, however, many respondents assured the researchers that they felt the extra time devoted to planning and collaboration enriched their teaching and their students' learning. Some schools were able to address the issue of time commitment by being creative with scheduling. At one school, for example, students follow a modified schedule on Fridays and are released early, thereby giving teachers time to plan and collaborate. At another school, the principal allows teachers to use their district-mandated in-service days to work on planners and provides an extended conference period bi-monthly for collaborative planning.

### Difficulty level of programme

The difficulty of the programme for some students and the amount of student work required was another critical issue addressed by more than half the schools. Of the eight schools, seven implemented the IB programme as a "whole school" programme. Many respondents pointed out that in some IB schools, only gifted and talented students are allowed into the programme. For the most part, they were proud that in their school, the IB programme was not "just for the elite" but they were concerned about the amount of work for the students. Some MYP teachers, looking ahead to the future on behalf of their students, were concerned that the DP would be beyond the students' academic abilities. Respondents from some schools specifically referred to the difficulty of the programme for special

education students. In contrast, others felt the "hands-on" nature of instruction was especially beneficial for their special education students.

#### Student mobility and adjustment

In five of the eight schools, respondents identified student mobility and the concomitant adjustment time for new students as a major challenge. One school, for example, explained that they lost several students and gained several new ones every week, and it is often a challenge to get a new student "into the IB mood" in the middle or end of the school year. Another school estimated that they began each school year with at least 50% of their students new to the IB programme, and the first 2 weeks of school were devoted to familiarizing new students with the IB philosophy.

#### Lack of district support

Bureaucratic practices and lack of support from the district office were identified as challenges by four case study schools. Many of these difficulties were attributed to the fact that most district administrators were unfamiliar with the IB programme and their overwhelming focus was standardized test (TAKS) scores. Consequently, if TAKS scores failed to rise, administrators were seen to blame the IB programme. Respondents told us that when district officials visit the IB campuses, they do not understand what they see in the classrooms. Correspondingly, when a central office looks at a programme through the lens of cost-per-student, IB often does not fare as well as pre-AP programmes. Some respondents commented that the amount of district paperwork required for permission to conduct field trips and other similar activities made it difficult to do anything out of the ordinary. Finally, one school had a new executive district superintendent who appeared to be against the IB programme and respondents were afraid he was going to cut the programme.

#### Lack of parental and community support

Lack of parental and community support for the programme was raised by three case study schools as a concern or challenge for them. To some extent, this was attributed to the socio-economic status and language difficulties of the parents, who were frequently perceived to be unfamiliar with the IB philosophy and not recognising the value of the programme. Although two of the schools specifically mentioned that they offered parent training on the IB philosophy, they said it was still a challenge to get parents to understand and support the programme. Even at schools where the problems of low SES and language barriers were less prevalent, respondents said it was sometimes a challenge to get parents involved.

#### Lack of teacher support

Finally, teacher support for the programme was a concern for two of the schools. The principal at one school shared that the process of a new teacher becoming a qualified IB teacher took at least 2-3 years, and for some teachers, it never happens. Respondents said it was difficult to convince some colleagues to change their teaching style, particularly those who had been teaching for many years, and that teachers need significant preparation for new ideas. At one school, respondents were aware that a few teachers were not fully implementing the programme, but their hope was that in the following year, the students would be assigned a teacher who fully embraced the IB philosophy.

## ***Advantages Associated With the IB Programme***

In terms of advantages associated with the IB programme, 11 prevalent themes were identified. These included: (a) improved professional practice, (b) instructional focus on higher level thinking and learning, (c) students becoming global learners, aware of connections to the larger world, (d) increased collaboration and cross-discipline planning among teachers and administrators, (e) students becoming active learners, responsible for their own learning, (f) an inclusive programme for all students, (g) instruction is student-centred with many hands-on activities, (h) focus on assessment methods other than standardized testing, (i) focus on cultural awareness and the value of diversity, (j) learning is relevant to students' everyday lives, (k) improved classroom management and fewer discipline problems.

### Improved professional practice

All eight case study schools identified the role of the IB training in improving educators' professional practice as a significant advantage of the programme. Principals, IB coordinators, and teachers agreed that through the IB training they had become "lifelong learners" and the school had become a learning community. Administrators consistently spoke about their teachers becoming stronger, more creative teachers since participating in the IB training. One administrator specifically noted that the IB training had resulted in "great teachers" at his school. Some teachers said that participating in the IB training had changed their whole philosophy of teaching, giving them ideas and tools to change the way they planned their lessons and taught their students. They were particularly positive about the value of the training they had received on the inquiry method, and some teachers specifically noted that they had learned to challenge students to formulate their own questions.

### Promotes higher-order thinking and learning

All the schools described the programme's focus on the inquiry method, as well as higher-level creative thinking and learning, as an important advantage of the IB programme. Respondents disclosed that much of their instructional practice had concentrated on worksheets and TAKS review before the IB programme was implemented, but the programme had encouraged them to have more rigorous expectations of their students. Many teachers referred to Bloom's taxonomy in discussing the programme's focus, sharing their belief that the programme challenges students to think critically, to ask questions, and to reflect. One teacher referred to the IB programme as a "whole school gifted and talented programme."

### Promotes global citizenship

All the schools indicated that the emphasis on global learning, which gave students a broader view of the world, was a strong advantage of the IB programme. They thought the programme created "world-wide learners" of their students and prepared them to be international students. In particular, some schools in low-income neighbourhoods believed that the programme's focus on internationalism helped their students to see themselves as part of a bigger world, beyond the narrow confines of their neighbourhood and city.

### Increased collaboration and interdisciplinary planning

Almost all of the schools identified increased collaboration and cross-discipline planning among teachers and administrators as a benefit attributable to the IB programme. For most of the schools, collaboration among teachers across grade levels or disciplines had been rare or non-existent before the uptake of the IB programme in the school. The collaboration encouraged by the programme was described as "amazing". Respondents made many references to the school climate becoming more academic and interactions among teachers assuming a more professional approach. One administrator asserted that the team approach to planning allowed teachers to build a "powerful" programme in which students examined a single concept across all curriculum areas.

### Promotes active learning

Most of the schools commented that participation in the IB programme had encouraged their students to become active, enthusiastic learners who assumed responsibility for their own learning. Some respondents believed that participation in the programme has caused students to be aware that their responsibilities extend beyond those pertaining to themselves as learners to include responsibilities to their school, family, community, and world.

### IB is an inclusive programme

Respondents in seven of the eight schools indicated that a significant advantage of the IB programme was its relevance to all students, whether gifted and talented or struggling. Most of the case study schools were high needs schools with significant 'at-risk' student populations. They noted with pride that the IB programme may be for "elite" students in some schools and districts, but in their schools, IB was for everyone. One school described the IB programme as a gifted and talented programme for all students. In similar vein, a respondent at another school pointed to the fact that if the IB is a good programme for some kids, it is a good programme for all kids.

### Student-centred instruction with hands-on learning activities

In many of the schools, the emphasis on student-centred instruction with significant hands-on activities was described as an advantage of the programme. Many respondents shared that their classrooms had been teacher-centred with a heavy emphasis on direct instruction and paper-and-pencil activities prior to the implementation of the IB programme. Teacher respondents consistently identified hands-on activities as the best way for children to learn and proudly shared that new teachers to the programme were often surprised at how student-centred the instruction was and how much hands-on learning occurred with the IB programme.

### Enhanced assessment methods

Many of the schools identified the de-emphasis on standardized testing as an advantage of the programme. Recurrent comments were heard about the use of a wide variety of assessment methods that give students the opportunity to demonstrate what they do know rather than what they do not know. Respondents were very enthusiastic about the programme's concentration on personal growth and noted that in an IB programme, students aren't compared with anyone except themselves.

### Focus on cultural awareness and diversity

The IB programme's focus on cultural awareness and the value of diversity was seen as an advantage by six of the eight schools. Respondents said the programme takes learning to a whole new level by exposing students to different people, cultures, and languages. Some noted that students gain understanding and respect for their own cultures through the programme. The programme's emphasis on respect for diverse cultures was especially seen as a significant advantage in schools whose students and teachers represent many different cultures.

### Relevance to students' life-worlds

Many respondents in the case study schools said that the learning that took place in an IB programme was relevant to students' everyday lives. They said the programme helped their students make connections between what they learned in the classroom to real life situations. Teachers said that their classroom instruction went beyond the mere acquisition of knowledge and skills to help the students really use the information they learned. In addition, many of the respondents concluded that the emphasis on relevance made learning more enjoyable for their students.

### Improved classroom management and student classroom behaviours

In some of the schools, improved classroom management and fewer discipline problems were seen as benefits attributable to the IB programme. Respondents said that prior to the implementation of the IB programme, teaching had been uninspired and student discipline had been a problem. It was frequently heard that with the uptake of the programme, the school environment had changed from one focused on student behaviour problems to one focused on educating the students to be good human beings. Respondents said the IB attributes were instrumental in helping students become better citizens through developing attitudes such as empathy and respect for others, and students were learning to care about each other and be better people.

## **CONCLUSION**

In 2009/2010, the International Baccalaureate Organization (IBO) commissioned the State of Texas Education Research Center at Texas A&M University to conduct an external evaluation of IB PYP and MYP programmes' impact on classroom learning and teaching, as well as to examine IB schools' performance in standardized Texas achievement exams in mathematics and reading as compared to other non-IB like schools in the state.

On the whole, the researchers of this evaluation study concluded that IB schools score as well as their non-IB counterparts on standardized assessments of cognitive knowledge and skills, while at the same time providing their students with the added opportunity to develop critical thinking skills from an intercultural perspective.

Specifically, the researchers noted that the IB case study schools were very positive about the IB programme on their campus. Although there were challenges identified in association with IB programme implementation, the majority of comments provided by teachers and administrators

focused on the positive impact of the IB training on teachers' professional practice, the role of the programme in encouraging higher level thinking skills among students, and the broader view of the world their students received through the programme's emphasis on global learning and cultural awareness. Most of the schools also identified increased collaboration among teachers, students' increased motivation as learners, the programme's focus on all students, and authentic assessment as significant advantages attributable to the IB programme. In particular, four of the eight case study schools pointed to fewer classroom management and student discipline problems as important changes since the introduction of the programme. In terms of challenges, the scarcity of teaching staff with IB expertise, perceived tensions between the IB philosophy and state/district requirements, high costs associated with ongoing IB teacher training, as well as the difficulty level of the programme for students were common concerns among the case study schools.

In conclusion, the research team noted that although the evaluation study did not reveal significant statistical findings with regard to test scores, such quantitative outcome variables do not always capture all of the learning that has taken place, and many affective domain factors were undeniably evident in the IB schools that participated in this study.

This summary was developed by the IB's Global Policy & Research Department. For a copy of the full report, or for more information on other IB research, e-mail the IB Research Department at [research@ibo.org](mailto:research@ibo.org).