In the following report, Hanover Research provides a general review of literature related to the effective administration of International Baccalaureate programs. Specifically, we review best practices as related to program evaluation, highlighting key metrics used to gauge the efficacy of IB, in terms of both student-level outcomes and broader program impact.
EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

This report is intended to assist our member in the effective administration and evaluation of its International Baccalaureate (IB) Primary Years Programme (PYP), Middle Years Programme (MYP), and Diploma Programme (DP). Our report is divided into two main sections: in Section I, we provide a general overview of program evaluation in the context of the broader International Baccalaureate Organization (IBO) and highlight research related to evidence-based assessment methods. In Section II, we provide a more focused overview of best practices in IB program administration and evaluation, examining key metrics utilized in successful program evaluations.

While many of the more non-tangible aims of the IB program (e.g., fostering student inquisitiveness) can be difficult to quantify and evaluate, we aim to provide a general review of metrics that allow IB programs to be compared to non-IB learning environments; this type of comparative analysis is necessary to identify and support the unique benefits of IB. It is important to note that while much of the more recent literature (produced by the IBO and external scholars) has focused primarily on the IB Diploma Programme, the IBO is currently engaged in studies examining pathways between IB program levels, which will produce further useful information as related to IB program evaluation.

For instance, a current (in-progress) study commissioned by IBO entitled “The Relationship between MYP Student Moderation Performance and DP Student Performance” is analyzing data collected from over 6,000 students who participated in both the MYP external moderation and the DP end-of-program exams, to determine the extent to which the MYP prepares students for the DP. Another current study, “Continuation Study of Student Performance and Engagement in the MYP,” is examining whether findings for 8th grade MYP performance extend into 9th and 10th grade, and whether the MYP experience influences 9th and 10th grade course enrollment and performance. The study will also explore unique features of the MYP program, analyzing student ‘global mindedness’ survey data, teacher perceptions, and teacher professional development.1

KEY FINDINGS

- The IBO stresses the necessity of stakeholder engagement and communication for effective administration of an IB program at any level. Insofar as school districts must respond to the interests of a wide range of stakeholders—from faculty and administrators to community members and policymakers—a comprehensive plan for clear stakeholder communication should be a central element of an effective IB program. Information related to program efficacy and student achievement should be regularly communicated to stakeholders; in addition, the IBO advises schools and

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1 See “MYP Studies.” IBO. http://www.ibo.org/research/policy/programmevalidation/myp/
districts to include stakeholder engagement and cooperation as a key considerations in gauging program effectiveness.

- Robust IB program evaluations typically involve **comprehensive analyses of both quantitative and qualitative data**. While quantitative data may be easily tracked through student data systems, gathering data related to qualitative dimensions may call for innovative or specialized methods; some districts have made use of surveys or focus groups for this purpose; interviews and informal conversations may also serve as a useful means of gathering feedback from program participants and stakeholders.

- The data points utilized to analyze program effectiveness vary widely by district and school. The IBO highlights the following common metrics for evaluation:
  
  - **Program Characteristics**: Number of applicants; enrollment rates; participation rates
  - **Student Performance Data**: State assessment scores; GPA; SAT scores; drop-out rates; graduation rates
  - **Alternative Assessments**: Student portfolios; informal observations
  - **Student Demographic Data**: Gender; race; socioeconomic status
  - **College Matriculation**: Matriculation rates; quality of institutions in which students enroll

- In recent years, the adoption of IB programs has seen a shift from a model of school-by-school adoption to one focused more broadly on school-wide reform. A holistic view of IB thus requires increased involvement, and support, on the part of district administration. Effective support strategies may include the provision of professional development; the hiring of dedicated IB support staff; and the facilitation of cohesive IB communities, through which faculty can share knowledge and best practices.
SECTION I: LITERATURE REVIEW

In this section, we provide a general overview of literature related to the effective evaluation of IB programs. Much of the information cited herein is provided by the IBO. The IBO provides funding and assistance vital to the undertaking of evaluation studies and, as a result, is responsible, or connected to, much of the work done to support and evaluate IB curricula.

CONTEXTUALIZING EVALUATIONS: THE IBO PHILOSOPHY

The International Baccalaureate Organization’s (IBO) programs are guided by a unique philosophy of active inquiry and participation, which is reflected in program curricula, pedagogy, and overall structure. The inclusive nature is illustrated by the IBO mission statement:  

The IB is more than its educational programs and certificates. At our heart we are motivated by a mission to create a better world through education ... We value our hard earned reputation for quality, for high standards and for pedagogical leadership. We achieve our goals by working with partners and by actively involving our stakeholders, particularly teachers.

The same philosophy applies to IB program evaluations. The IBO provides a large volume of information on program evaluation, including resources related to methodology design and district and school self-assessments. The IBO offers the following general guidelines for the development of an assessment policy:  

It is a requirement that every IB World School has an assessment policy that reflects the school’s philosophy and position on assessment ... When creating an assessment policy, schools need to keep in mind the overall value of the collaborative process that the school community will go through. The most important thing is the collaboration that must take place within a school in order to create an assessment policy. Although producing a written document is the intended outcome, it is the collaborative nature of the process and the associated discussions that are of most value. By involving those with a vested interest, the assessment policy then truly reflects the school’s philosophy. A system should also be put in place to allow regular reviews of the assessment policy.

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While this excerpt is taken from a guide specifically for developing a student assessment policy, these points apply more broadly to the nature of assessment, evaluations, and metrics in the IB system at a broader program level. There are several important points to consider as related to evaluations of program effectiveness:

- Policies should be developed collaboratively and on an ongoing basis in order to ensure that they reflect constituents’ beliefs, thereby creating a vested interest in maintaining program standards.
- Policies should be applied universally and communicated clearly to all stakeholders.

In this light, evaluations are tools to be used to both communicate and measure success and to push the boundaries of education. An understanding of evaluations as a collective set of tools allows IB schools to facilitate continued improvement and evolution. The fluid nature of this process is a key element of IB programs, and is embraced in the design of formal IBO evaluations and guidelines.

**Assessment Methods**

This subsection provides an overview of methods that have been used to assess implementation of International Baccalaureate (IB) programs and measure a program’s success in achieving stated objectives. In addition to academic achievement, these objectives include the development of personal responsibility for learning and social service; the nurturing of critical, independent thinking and inquisitiveness; the development of an esprit de corps among the student body and within a school; the promotion of parental and community involvement; and the development of an international perspective in all students. Such goals are more difficult to quantify than traditional academic achievement. While standardized tests and other assessment types offer well-developed measurements of academic progress, the IB program’s more nebulous objectives may demand innovative or specialized measures to gauge success.

The Diploma Programme has been the focus of a considerable amount of research in this area, while less attention has been paid to the younger MYP and PYP programs (MYP was added in 1994; the PYP was added in 1997). The IBO’s self-published literature review related to the IB Diploma Programme is organized into the following categories:

- College entrance
- Perceptions of the IB Diploma Programme by admissions staff of universities
- Perceptions of students and graduates of the IB Diploma Programme
- Perceptions of the IB Diploma Programme by teachers and heads of schools
- Preparation for the IB Diploma Programme

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- Outcomes of the IB Diploma Programme
- Policy issues relating to program implementation
- Comparisons with other programs
- Critical studies relating to equity and access
- Personal, social and health education

Each of these dimensions serves as a metric of success, or as a context for interpreting findings, in the process of program evaluations. **Most studies involve a combination of quantitative and qualitative research methodologies** using formal or informal tools, including observations, interviews, and surveys. Longitudinal studies offer the added benefit of tracking changes over time and drawing broader conclusions. A description of the methodology used in a longitudinal study is discussed in greater detail later in our report.

**EVIDENCE-BASED ASSESSMENT**

The IBO publishes a guide to developing a quantitative evaluation to gauge the efficacy of IB programs. Entitled “Building Evidence to Support Your IB Program,” the guide is presented as a means of demonstrating program efficacy; however, the evaluation strategies identified also offer useful measures for determining if an IB program is achieving its desired results. The IBO provides a broad overview of the **types of data** to be used in assessment, **methods for data collection**, guidelines for the **maintenance of databases**, and procedures for **sharing data** and results.

Consistent with the overlying philosophy of the IB program, the guide is intended to lead the development of an evaluation process, rather than provide a set of metrics to be collected and monitored. The IBO recommends beginning with two big-picture questions: “Why are we collecting data?” and “How will we examine the data?” The guide suggests that beginning with these two questions allows schools to focus on specific target areas and provide consistent information for analysis.

The IBO stresses that there is “no magic formula” for program evaluation, but provides a common approach to evaluation:

1. **Identify** what you are going to evaluate. This could include the number of applicants to the program, test scores, classroom observations, college acceptance rates, as well as attitudes or perceptions about participating in IB.

2. **Review** the data collected, such as a group of student surveys. Check to see if the data is complete and that it covers areas in which you are interested.

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3. **Analyze** what you see in the data. It is helpful to look at the information individually at the micro level (e.g. specific class surveys), and then to compare it at the macro level (i.e. the school or grade levels as a whole). An easy way to analyze your data is to calculate the averages and then compare them.

4. **Utilize** the information you have collected. The key is to use the information to help make appropriate changes. It should provide a reference point to see how well the program is running at your school, and help you to adjust its implementation accordingly. Also, you can share your progress with the community to keep them informed as well as to solicit their feedback.

According to the IBO guide, there is a wide range of metrics utilized by schools to evaluate performance; metrics may vary based on the unique characteristics of a school and its level of sophistication in conducting the evaluation process. The guide lists several **common metrics**, which are shown in the figure below.9

**Figure 1.1: Common Metrics for IB Program Evaluation**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Data Points</th>
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<tbody>
<tr>
<td>Program Demographics</td>
<td>Number of applicants</td>
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<td></td>
<td>Enrollment rates</td>
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<td></td>
<td>Participation rates</td>
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<td>Student Performance Data</td>
<td>State assessment scores</td>
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<td>GPA</td>
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<td>SAT</td>
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<td>Drop-out rates</td>
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<td>Graduation rates</td>
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<tr>
<td>Alternative Assessments</td>
<td>Student portfolios</td>
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<td></td>
<td>Informal observations</td>
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<tr>
<td>Student Demographic Data</td>
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<tr>
<td>College Matriculation</td>
<td>Matriculation rates</td>
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<tr>
<td></td>
<td>Quality of institutions in which students enroll</td>
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</tbody>
</table>

Source: IBO

Additional metrics for consideration include **college readiness; scholarships received; teacher productivity; stakeholder testimonials; and community involvement.** Just as a diverse set of metrics are necessary to evaluate a student’s performance, the guide recommends the use of a variety of formal and informal surveys and observations to provide a comprehensive view of program efficacy. The guide also includes a sample format for reporting the results of IB PYP and MYP evaluations, intended to provide a “comprehensive approach” to evaluation, including both qualitative and quantitative data and a forward-looking “timeframe of expectations.” Dimensions for reporting include the following:10

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9 Ibid., p. 2.
10 Ibid., p. 3.
• **Outputs:** The traditional numbers associated with IB (enrollment, test scores) and how they have changed over time.

• **Initial outcomes:** The expected immediate student changes that occur after a student’s first experiences with IB.

• **Intermediate outcomes:** The expected student changes that occur after a student’s long-term exposure to IB.

• **Ultimate outcomes:** The goals envisioned for students who have successfully completed IB.

**ENSURING STUDENT PARTICIPATION; FOSTERING POSITIVE PERFORMANCE**

In order to identify and combat potential factors contributing to low participation and performance in Diploma Programmes, the IBO recently commissioned a pair of case studies examining two highly effective schools in the program, **Lamar Academy** (McAllen, Texas) and **Hillsborough High School** (Tampa, Florida).\(^{11}\) Examination of these schools revealed a number of converging strategies used “for outreach and recruitment” and relating to “general program availability, early preparation, and student supports.” These strategies offer exemplar practices for effective programs at the Diploma level.

As both schools are magnet programs, they are relatively unrestricted by the geographic boundaries defining traditional public secondary schools. As such, more students are able to participate in the programs at Lamar and Hillsborough. Both programs have taken action to “increase rigor in the elementary and middle school grades” as a way to prepare students for the DP.\(^{12}\) Aside from implementation of MYP and PYP curricula within school districts, both Lamar and Hillsborough established **“feeder” programs** for students in 9th and 10th grade “to teach content and skills” designed to prepare students for DP.\(^{13}\)

**Common outreach and recruitment strategies** were also identified at both schools, including mail campaigns targeting prospective students, informational open houses, and the provision of shadowing opportunities for prospective students. Both schools seek to promote a culture of “student motivation,” aiming to expand the reach of the IB curricula beyond the traditional ‘gifted’ student demographic. The selection process for students at Lamar and Hillsborough took into consideration academic performance, essays, interviews, and teacher recommendations.\(^{14}\)

The success of these programs was also found to be largely dependent on the support systems established at each school, which reached from the school level to the district and state levels. At the school level, “academic and social support” was provided to students, and schools worked to foster “a sense of community” among all DP students.\(^{15}\)


\(^{12}\) Ibid.

\(^{13}\) Ibid.

\(^{14}\) Ibid.

\(^{15}\) Ibid., p. x.
school-level actions included “keeping IB relatively small, requiring that all IB students attempt the full Diploma, and emphasizing the shared values that motivate students and teachers to participate.”\(^{16}\)

**Student performance** was also tracked within these schools, so that struggling pupils could be quickly identified and assisted. At the district level, administrators appointed designated leaders who organize professional development for employees, secure funding, and oversee relevant hiring. At the state level, the programs were strengthened through IB-affiliate organizations, which “coordinate professional development, provide instructional guidance, and advocate for supportive policies.” As a result of advocacy initiatives, the programs have benefited from various “college credit and scholarship opportunities for IB Diploma recipients,” among other incentives arranged at the state level.\(^{17}\)

In addition to discussing the findings of case studies at these schools, the IBO’s report presented a series of “lessons” to be learned from the success of programs at Lamar and Hillsborough. The **overarching best practices** (“lessons learned”) emerging from these case studies included:\(^{18}\)

- Expanding program availability;
- Focusing on early preparation;
- Engaging in targeted student outreach and recruitment;
- Considering the balance between selectivity and student persistence;
- Monitoring student progress and ensure the availability of academic assistance;
- Ensuring adequate district support for the DP; and
- Encouraging state entities to adopt policies that incentivize IB participation and the establishment of additional IB programs.

A more detailed overview of each dimension listed above is provided in the report appendix.

**Support Structures and Services**

In 2006, with the support of a $1.08 million API grant, IB North America increased its efforts to broaden access and develop “support structures and services” for Title I high schools working toward IB World School status. These “support structures and services” were intended to “build a pathway” connecting the MYP and Diploma Programmes and expand participation across schools, staff, and students.\(^{19}\) The key support structures and services

\(^{16}\) Ibid., p. viii.
\(^{17}\) Ibid., p. viii.
\(^{18}\) Ibid., pp. viii-ix.
identified through this effort offer a useful baseline for support-oriented effective practices in IB administration:

- Increased scaffolding materials and leadership activities;
- Creating a new coaching model and providing on-site coaches in schools;
- Offering new supports and training for guidance counselors;
- Developing backward mapping of curriculum from MYP through the Diploma; and
- Drawing on experiences and insights of other IB practitioners.

From January 2007 to January 2010, a team of researchers at the Institute for Education of Social Policy (IESP) at New York University provided input in the design, development, and delivery of new support structures and services while examining and documenting the implementation and impact on four pilot schools. The team’s research endeavored to answer the following questions:20

- **Academic supports**: What supports for staff and for students are being provided? How well do they fit the needs and capacity of the schools?
- **Articulation of MYP/IB pathways**: Are sites developing coherent connections between MYP and the Diploma Programmes?
- **Organizational impact**: What is the impact of MYP and the new IB supports on pilot schools? Is their capacity to implement and expand IB affected?
- **Student impact**: What is the impact of the project on student participation, persistence, and performance?

**QUALITATIVE RESEARCH METHODOLOGY**

The team visited each pilot school twice per year during the study, conducting:21

- **Interviews** with “MYP and DP coordinators, school and district administrators, teachers across subjects and programs, and guidance counselors about their status and concerns with implementation of MYP and DP, enrollment and staffing issues, and articulation across grades and schools;”
- “Observations of staff meetings and professional development activities connected to IB;”
- “Interviews and observations of support activities and workshops provided by IB or their coaching consultants;”

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21 Ibid., p. 7.

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- A “review of school and district documents about IB implementation, academic program, and student recruitment, participation and performance;” and
- Observations at joint meetings among schools, and at regional meetings and national conferences.

**QUANTITATIVE RESEARCH METHODOLOGY**

The following data were gathered to track changes in participation, compare characteristics of students who participated and those who did not, and to assess strengths in supporting students from initial enrollment in MYP through the Diploma.\(^\text{22}\)

- SAT and IB exam scores;
- Credit accumulation;
- Demographic data; and
- Student enrollment status for each year.

In addition, the team conducted a survey of all Title I-eligible high schools offering IB programs and a case study of the district role in IB. These components were used to provide an empirical context for patterns apparent in the schools included in the study.

**MONITORING IMPLEMENTATION AND PROGRESS**

The complexity of implementing the many concepts and components of an IB program can make assessment difficult. To address this consideration, researchers modified assessment rubrics and implementation wheels, originally developed to display the implementation of Comprehensive School Reform Designs.\(^\text{23}\) These tools allowed the large amount of data collected from different locations and from qualitative and quantitative sources to be viewed in the context of their relation to the whole, providing “representations that enable a full viewing of the entire design at once, without losing track of the key components that comprise the design and, in turn, guide the implementation work of IB.”\(^\text{24}\)

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\(^{22}\) Ibid.

\(^{23}\) Ibid., p. 22.

\(^{24}\) Ibid., p. 23.
Each of the wheel segments in the figure above represents one of the four primary areas of the IBO Program Standards and Practices. Each of these primary areas are further organized (and subdivided) into smaller sections, representing selected practices that indicate evidence of implementation within the four primary areas.

These practices were initially developed in conjunction with the IB official handbook of Standards and Practices, and subsequently modified based upon the interviews and observations that took place during the study. The wheel can be similarly modified to meet the needs of a particular project or study. The subcategories for each of the primary areas included:

- **Standard AI: Philosophy**: There is close alignment between the educational beliefs and values of the school and those of the program.
- **Standard A2**: The school promotes international-mindedness on the part of the adults and the students in the school community.
- **Standard B: Organization**: The school demonstrates ongoing commitment to, and provides support for, the program through appropriate administrative structures and systems, staffing and resources.
- **Standard C1: Curriculum**: A comprehensive, coherent, written curriculum, based on the requirements of the program and developed by the school, is available to all sections of the school community.

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25 Ibid.
26 Ibid.
Standard C2: The school has implemented a system through which all teachers plan and reflect in collaborative teams.

Standard C3: Teaching and learning at the school empowers and encourages students to become lifelong learners, to be responsible towards themselves, their learning, other people and the environment, and to take appropriate action.

Standard C4: There is an agreed approach to assessment, and to the recording and reporting of assessment data, which reflects the practices and requirements of the program.

Standard D1: Students: Students learn to choose to act, and to reflect on their actions, so that they contribute to their own well-being and that of the community and the environment.

Standard D2: In the final year of the program, all students complete a program specific project that allows them to demonstrate a consolidation of their learning, in the case of the PYP and MYP, and to demonstrate the extension and development.

Finally, a rubric for the assessment of each of these activities was developed based upon the IBO Program Standards and Practices. The rubric assigns a grading scale from zero (“Not yet”) to three (“In Place”) to indicate the current stage of each of the practices. For example, the following would apply to Standard A2:27

- **0 – “Not Yet:”** Courses do not provide opportunities to learn about global issues or the value of diversity.
- **1 – “Starting:”** Some courses provide statements of the value of diversity.
- **2 – “In Progress:”** Courses provide opportunities to learn about issues of global significance.
- **3 – “In Place:”** Courses provide opportunities to learn about issues of local and global significance and connect them to content; IB resources connect students and staff across countries; students and staff exhibit an understanding of global citizenship.

Finally, each of the subsections is applied to its corresponding primary areas on the wheel, as shown in the figure below. The concentric circles dividing the wheel represent the rubric grading scale, from zero to three. The shading corresponds to the stage of a current practice within each of the primary areas.

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27 Ibid., p. 4.
Figure 1.3: Implementation Wheel with Segmented Key Areas

This visual representation allows for a quick observation of the current status of implementation of an IB program. The visual representation also allows for comparative assessments over time. As each of the segments is shaded in, subsequent stages of implementation are acknowledged. Naturally, the quality and utility of the representation, and the resulting interpretations, are dependent upon the quality of the processes utilized to develop an implementation rubric.

SECTION II: BEST PRACTICES

This section contains a general review of IB best practices as related to program administration and evaluation. We provide an overview of salient practices as related to effective district support of IB, and also provide a review of relevant metrics that have been utilized by districts and schools in gauging the effectiveness of IB.

THE DISTRICT’S ROLE IN SUPPORTING IB

In a 2008 study, researchers at the Institute for Education and Social Policy at New York University investigated the role of school districts in the implementation and ongoing administration of IB curricula, with the aim of identifying how districts with a reputation for success—in terms of both IB participation and student performance levels—supported programs at the district level. The NYU study examined an (unnamed) U.S. district serving 170,000 students in 196 schools; of these, eight high schools and five middle schools offered IB. Researchers identified the following practices as central to effective IB programs:

- **Establishing District Support** – The IB program was included in the district’s base budget—a factor that served to symbolize the district’s commitment to, and continued support of, the IB curricula. One administrator consulted for the study suggested that this central fiscal support base had helped the district to overcome internal resistance from some faculty.

- **Building Commitment / Maintaining School and Student Choice** – Recognizing that the IB program could not be effectively administered without the support of key stakeholders (specifically, principals and school communities), the district allowed schools to choose between offering AP and IB; resistant faculty members and students were offered the option to switch to a different school if they did not wish to participate in the option.

- **Building a Bridge / Adding MYP** – When the district initially considered expansion of its IB program to include MYP, “the decision was not for the District to mandate the new program, but rather to identify ‘targets,’ extend ‘invitations,’ and facilitate conversations – considering needs and capacity while preserving school choice.” The district sought to identify staff willing to collaborate, noting that it would be necessary for schools to work together to build a ‘bridge’ between program levels.

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30 Ibid., p. 6.

31 Ibid., p. 7.
Notably, district noted a significant increase in Diploma Program participation as the first cohort of MYP participants moved into high school.\textsuperscript{32}

- **Connecting the IB Community** – The district facilitated interaction among IB faculty members across schools and programs through regular meetings and shared IB orientations with high schools and their feeder MYPs.\textsuperscript{33}

- **Support Staff** – The district utilized two district-level support staff members, who provide district support to school-level faculty and staff. Support staff are tasked with:\textsuperscript{34}
  - Arranging Meetings;
  - Engaging consultants;
  - Supporting teacher in taking on new responsibilities (e.g., designing new MYP assessments);
  - Securing funding to send IB teachers to regional meetings; and
  - Acting as an informational resource for stakeholders.

- **Professional Development** – The district utilized a variety of IB professional development, not only implementing training within the district, but also working with a local university to facilitate effective knowledge transfer (e.g., identifying effective practices in facilitating knowledge sharing among faculty who attend off-site training and their peers). A local feeder institution which supplied many teachers to the district also began offering a Certificate in Advanced IB Studies.\textsuperscript{35}

- **Building Public Support** – The district has used informational brochures, personal contact, and open house nights to raise awareness and foster support in the community. In addition, the program has frequently been featured in a local newspaper highlighting IB achievements.

**GAUGING PROGRAM EFFECTIVENESS**

As noted in the previous section, various metrics and techniques may be employed to evaluate the progress – and overall efficacy – of an IB program. Research generally suggests that an approach employing multiple data points – both quantitative and qualitative – offers the most robust and comprehensive assessment of program effectiveness, though districts vary substantially in terms of the types of evaluations actually undertaken.

\textsuperscript{32} Ibid., p. 8.
\textsuperscript{33} Ibid., p. 9.
\textsuperscript{34} Ibid., p. 10.
\textsuperscript{35} Ibid., pp. 10-11.
Henrico County Public Schools – which operates five IB schools – has reported utilizing several measures to monitor its IB program; in a recent IBO report, a district IB Programs Specialist highlighted three quantifiable methods used to evaluate program impact:36

- **Calculating the number of applicants** to the program: A higher number of applicants would reflect a higher public demand for IB programs.
- **Measuring student success rates**: Each year the MYP and Diploma Programme participants set a goal of meeting or exceeding the global IB test score averages.
- **Quantifying the amount of scholarship dollars students receive**: Each year the program adds up all of the scholarships awarded to IB graduates, communicating the high appeal of IB graduates to universities.

Data is collected formally and informally (e.g., through surveys and conversations). Results are communicated to the public and to parents through newsletters and public profile sheets.37

**Academy School District 20**, which serves roughly 22,600 students in 32 schools in Colorado Springs, Colorado, has utilized a substantially more comprehensive methodology for evaluating its IB programs. Three reports (two quantitative and one qualitative) have been published on measurements of program efficacy in the district; the methodology utilized for each is instructive in identifying effective evaluation and progress metrics.

In 2005, Academy School District 20 released the results of two longitudinal studies on the effects of IB participation on student mathematics and reading achievement in grades 5-8 and 8-10 (covering both the MYP and Diploma Programmes) from 2001-04. These reports were complemented by a comprehensive qualitative report, “A Qualitative Study of Student Achievement and Growth Associated with the International Baccalaureate Program in Academy School District 20.”

Combined, the evaluation effort endeavored to address the following dimensions:38

- **Unique effect of IB** – The primary aim was to determine whether IB had a unique, value-added effect, or whether achievement was due to other mediating variables (e.g., student background, motivation, academic ability).
- **Achievement and growth** – The study examined the impact on student achievement over the entire length of time spent in the program.
- **Multiple comparisons** – Effects were compared for different grade level cohorts, IB versus non-IB students, and by gender.

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37 Ibid.
38 Ibid., p. 5.
• **Statistical analysis** – A variety of analytic techniques were utilized, including descriptive statistics (e.g. frequency distributions, means) and more complex models (e.g. multivariate analyses).

Quantitative techniques used for the analysis included the following:  

• **Descriptive Statistical Procedures**  
  o Variables included: IB CSAP reading, length of time in the IB program, gender, minority, poverty status, language background, and other demographics.  
  o Used to compare IB and non-IB students.  
  o Supported multivariate analyses and hierarchical modeling.

• **T-tests for Differences and Means**

• **Multiple Linear Regression and Bivariate Correlations**  
  o Used to identify factors potentially predictive of student achievement and growth in reading

• **Hierarchical Linear Modeling (HLM)**  
  o Used to evaluate the effects of IB participation and length of participation on student achievement and on growth in achievement, controlling for student background characteristics

**Qualitative measures** included the following:

• **Interviews** – Interviews were conducted with a range of individuals, including experts within the district and those who work with IB nationwide, in order to develop protocols and questions for focus groups.

• **Focus Groups** – Several focus groups were formed: IB and traditional students, IB and traditional teachers, IB coordinators and assistant principals, and traditional assistant principals. The average group size was 10, with groups ranging in size from 1-18 participants.

• **Teacher Surveys** – Surveys were administered to all full-time IB program teachers and a stratified random sample of all other teachers in the district (excluding part-time, kindergarten and first grade, and teachers with less than three years of

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40 Tanya, R. “Qualitative Study of Student Achievement and Growth Associated with the International Baccalaureate Program in Academy School District 20.” February 2007. p. 3.  
experience). Questions were developed around focus group findings to assess the effectiveness of identified strategies in greater depth.

- **Classroom Observations** – Fifteen classroom observations took place in both IB and traditional classrooms at the elementary, middle, and high school levels to examine the strategies and concepts identified in the previous components.

- **Data Analysis** – Findings from each component of the study were coded and compared. Findings were either validated when each component confirmed a particular conclusion, or rejected when not supported.

**HIGH SCHOOL SURVEY OF STUDENT ENGAGEMENT (HSSSE)**

Engagement is another key metric used in evaluating program effectiveness. While somewhat less tangible than standardized test results, engagement can provide a critical understanding of how a school’s culture and environment affect student learning. A 2010 study conducted by the IB Global Policy and Research Team utilized the High School Survey of Student Engagement (HSSE) to evaluate trends in engagement among IB and non-IB students in the U.S.

The HSSE is a national survey administered by Indiana University at Bloomington’s School of Education on students’ academic, social, and emotional engagement. Started in 2004, the survey has surveyed 500,000 students nationally. The survey was modified from the National Survey of Student Engagement (NSSE) – a survey used to evaluate college student engagement – by drawing on focus groups with high school students and teachers. In addition to information on engagement, the HSSE collects demographic information, including a student’s current grade, age, gender, and ethnicity.41

The survey focuses on three primary dimensions of student engagement:42

1. **Cognitive/Intellectual/Academic Engagement**
   - Measures a “students’ effort, investment, and strategies for learning,” or “engagement of the mind.”

2. **Social/Behavioral/Participatory Engagement**
   - Focuses on a “students’ actions in extracurricular, social, and non-academic school activities, including interactions with their fellow students as well as with other members of the school

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42 Ibid.
community. This dimension can be thought of as engagement in the life of the school.”

3. Emotional Engagement

- Emphasizes “students’ feelings of connection to their school. This dimension can be interpreted as engagement of the heart.”

In an IBO summary of the report, the organization stressed the relationship of these metrics to the goals of the IB program, noting that “these dimensions of engagement are of particular relevance to the IB learner profile and to the aims of the IB Diploma Programme.” As such, districts may consider an analysis of HSSE engagement data (or a modified, locally-developed survey instrument aimed at eliciting similar information) to gauge the effect of IB on overall student engagement, on an intellectual as well as socio-emotional level.

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43 Ibid., p. 2.
APPENDIX

This appendix provides a more detailed overview of the key findings of an IBO-commissioned study of effective IB Diploma Programmes at Lamar Academy and Hillsborough High School.

**Figure A1: “Lessons Learned” from IB Diploma Programmes at Lamar Academy and Hillsborough High School**

<table>
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<th>Practice</th>
<th>Recommended Actions</th>
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| Expand program availability           | - Locating Diploma Programmes in diverse school districts is a first step towards ensuring access for students who are traditionally underrepresented in IB programs.  
- School and district leaders may consider structuring their IB programs as magnets with the explicit intention of increasing accessibility to students across the district or locating programs in schools serving underrepresented students and encouraging these students to enroll.  
- In working with schools and districts, IB should be sure to communicate that motivated students entering the program performing at, and even below, grade level have been successful in completing Diploma Programmes and that many such students have earned the full IB Diploma. |
| Focus on early preparation            | - Initiatives aimed at raising overall student achievement by increasing rigor in elementary and middle schools may help prepare larger numbers of underrepresented students for the academic rigor of the Diploma Programme.  
- Structuring the Diploma Programme as part of a 4-year course of study, with students entering in 9th grade and receiving two years of aligned curriculum and supports prior to formally beginning Diploma Programme coursework at the beginning of 11th grade, provides early preparation that appears to contribute to student success. |
| Engage in targeted student outreach and recruitment | - Districts and schools seeking to expand the reach of their IB programs should consider engaging in strategic efforts to inform prospective applicants from underrepresented groups of the program’s value, explain the qualities that program staff are looking for, and dispel any misconceptions.  
- Diploma Programme staff and district leaders should work with teachers and counselors of students in the prospective applicant pool to increase program awareness and encourage high-potential students to participate, perhaps nominating such students to program leaders.  
- IB leaders might consider creating recruitment tools and training administrators regarding effective recruitment strategies. |
| Consider the balance between selectivity and student persistence | - School and district leaders who seek to expand access to underrepresented students while providing sufficient preparation for success should reflect on the tradeoffs related to selectivity and expectations regarding student persistence and attainment of the Diploma.  
- In particular, in expanding access, program staff should evaluate their capacity to support incoming students who may struggle with the rigor of the IB curriculum. |

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44 Bland, J., Woodworth, K. Op. cit. Figure contents quoted from source.
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<thead>
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<th>Practice</th>
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<td><strong>Monitor student progress and ensure the availability of academic assistance</strong></td>
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- Schools and districts should carefully monitor student progress and develop early warning systems to identify students at risk of getting off track.  
- Schools and districts should assess the adequacy of their support systems and consider additional strategies for bolstering student support. Ample student support is especially important for schools with relatively open admission policies.  
- IB should support networking among affiliate schools to enable sharing of best practices in the areas of monitoring progress and student supports. |
| **Ensure adequate district support for the Diploma Programme** |  
- District leaders have the capacity to substantially influence school-level IB program quality along several dimensions, including program design, staffing, funding, and teacher professional development. Districts considering adopting the Diploma Programme should be prepared to provide the supports necessary for student success.  
- IB leaders are encouraged to promote the sharing of best practices among district leaders. |
| **Encourage state entities to adopt policies that incentivize IB participation and the establishment of additional IB programs** |  
- IB should continue to encourage schools and districts to form or work with existing state or regional organizations to advocate for supportive policies at the state level.  
- Likewise, schools and districts should work together to increase awareness of the value of the Diploma Programme among state policymakers. |

Source: “Case Studies of Participation and Performance in the IB Diploma Programme”
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