Investigating the implementation and impact of the IB Diploma Programme on state schools in Ecuador, a mixed methods study examined governmental and other support for schools, changes in school practice and student outcomes. The findings suggest that: the Ministry of Education is actively supporting the DP in Ecuador by leading school selection and providing financial resources; generally DP students enjoy well-organized, interactive and imaginative lessons; and the DP has a noticeable effect on teacher pedagogy. Although, students in DP state schools seem to be benefiting from the programme in terms of academic and non-academic outcomes, students in Ecuador’s DP private schools generally performed better in most subject areas (Halic 2013).

Using data from the IB student data system (IBIS) and the National Student Clearinghouse (NSC), the IB Global Research department explored the university enrollment, retention and graduation rates of 2005 Diploma Programme graduates in the United States (n=9,654). DP college graduation rates were consistently higher than institutional university rates. 92% of DP candidates enrolled in college and 74% graduated within four years (Halic 2013).

A study by the Higher Education Statistics Agency (HESA) in the UK examined the characteristics and trends of IB students (n=6,390), compared to A-level and other student groups with similar qualifications, at Higher Education Institutions (HEIs). Data from the academic year 2008–2009, with comparisons from 2007–2008, offers evidence that IB students were more likely to enroll in college, to enroll in selective colleges, to stay enrolled and to perform better once there. Generally, DP students reported that they felt well-prepared to succeed in college coursework and described writing and mathematics preparation, motivation and time management as strengths (Barnett 2013). Generally DP students were more likely than their non-IB counterparts to be offered admission and to graduate within five years, although students’ GPA rates and plans for future education were similar (Edwards, Underwood 2012).

In the 1990s Chicago Public Schools (CPS) introduced the DP into 12 high schools throughout the city, mostly serving low income, racially diverse students with little or no history of college-going. Part of the Chicago Postsecondary Transition Project, this study sought to examine the impact of Chicago’s IB programmes on postsecondary outcomes and experiences of CPS graduates, comparing DP and matched non-DP graduates. The sample included 18,075 CPS graduates between 2003 and 2007. Compared to similar non-DP graduates, DP graduates were more likely to enroll in college, to enroll in selective colleges, to stay enrolled and to perform better once there. Generally, DP students reported that they felt well-prepared to succeed in college coursework and described writing and mathematics preparation, motivation and time management as strengths (Coca, Johnson, Kelley-Kemple, Roderick, Moeller, Williams, Moragne 2012).

Key findings from research on the impact of the IB Diploma Programme

The International Baccalaureate (IB) Global Research department collaborates with universities and independent research organizations worldwide to produce rigorous studies examining the impact and outcomes of the IB’s four programmes: the Primary Years Programme (PYP), the Middle Years Programme (MYP), the Diploma Programme (DP) and the Career-related Certificate (IBCC). Areas of inquiry include, but are not limited to: standards alignment, programme implementation, student performance and the learner profile. The findings below come from internal IB, IB-commissioned and independent research relating to the DP.

A case study investigated the enrollment, progression and achievement of IB Diploma Programme graduates at two universities in Australia. The study tracked cohorts of students at the two universities (n=135 and n=19) over a five-year period, following enrollment in 2007; one of the universities also offered longitudinal data for a control sample of non-IB graduates. The results indicate that generally IB students were more likely than their non-IB counterparts to be offered admission and to graduate within five years, although students’ GPA rates and plans for future education were similar (Edwards, Underwood 2012).

Figure 1: IB entrants were more likely to enroll in one of the UK’s top HEIs.

Figure 2: This figure compares former DP students and a comparison group on postsecondary outcomes.

To read summaries or complete reports of research projects conducted or commissioned by the IB Research department, please visit http://www.ibo.org/research, or contact research@ibo.org.
Key findings from research on the impact of the IB Diploma Programme

In a separate working paper, Anna Rosefsky Saavedra of RAND explored whether participation in the DP had an impact on ACT scores, high school graduation rates and college enrollment for 20,422 CPS students from 2002–2008. The findings suggest that participation in the DP may boost ACT scores by up to 0.5 standard deviations, and increase both the likelihood of graduating from high school (by up to 17%) and enrolling in college (by up to 22%) (Saavedra 2011).

The relationship between students’ enrollment in the DP and their college preparedness was further examined at four case study schools in Mexico. The results of the study suggest that DP students do indeed enroll in top-ranking universities in Mexico. DP students, teachers and administrators reported a high level of preparedness for college coursework although respondents did not believe the DP offered an admissions advantage to DP students in the Mexican tertiary system. The study also suggests that academically stronger students tended to enroll in the DP, reportedly due to a lack of satisfaction with other high school options (Saavedra, Lavore and Flores 2013).

To better understand how the extended essay (EE) prepares students for university-level research and academic success, a study was conducted at the University of Virginia (UVA). Examining former IB students’ (n=1,045) and former AP students’ (n=1,046) perceptions of their high school research experience, a survey found that IB students were more likely to indicate they: felt prepared for college-level research; were proud of their research; intended to conduct future research; and believed research skills were important to their continued success. After controlling for background characteristics, the study also found a statistically significant relationship between the EE score and college grade point averages (GPAs) (Inkelas, Swan, Pretlow, Jones 2013).

The impact of the extended essay (EE) on preparation for university studies was also examined through interviews with 43 students and 14 tutors at two universities in the UK. Comparing A-level students’ research experiences with those of former DP students, DP students were more positive about the value of the EE and their pre-university education. Overall, DP students reported that the EE strengthened their critical thinking skills and capacity for independent research. Some DP students, however, indicated that there were few opportunities at their universities to use the skills they had developed through the EE (Wray 2013).

This sheet aims to provide a brief sample of findings from recent research. It does not attempt to represent all research on the DP available in the field. As with all research, findings must be placed within the particular contexts in which the studies took place.
Key findings from research on the impact of IB programmes in the Americas

The International Baccalaureate (IB) Global Research department collaborates with universities and independent research organizations worldwide to produce rigorous studies examining the impact and outcomes of the IB’s four programmes. In addition, many researchers—indeed of the IB—produce quality studies on the effects of IB programmes. This information sheet provides a brief overview of key findings from recent research, both external and commissioned, on IB programmes from 2012 to 2015.

Primary Years Programme (PYP) and Middle Years Programme (MYP) studies

- A study investigated the mathematics self-efficacy and self-regulatory skills of PYP students in three schools in the United States. Findings indicated that teachers were aware of IB curriculum elements and implemented them in the classroom. Goal setting, monitoring, collaboration and reflection appeared to be beneficial self-regulatory practices that supported student learning. Additionally, high achieving students were found to be more likely to engage in strategic thinking before, during and after mathematics problem-solving than average and low achieving students (Kitsantas and Miller, 2015).

- Utilizing a mixed-methods case study, an investigation explored the perceptions of administrators, teachers and students within four PYP schools in Colombia. Student interviews identified teachers as the primary drivers of their positive learning experiences. In an accompanying survey, 89.3% of PYP students indicated that they enjoyed being a student at their school while over 90% reported that they were proud to be a student of their school (Lester and Lochmiller, 2015).

- An externally conducted quantitative study in the United States compared the science performance of PYP and MYP students (n=50) with that of their non-IB peers (n=50). The study, based on the science portion of the Colorado Student Assessment Program (CSAP), found that IB students performed significantly better on the CSAP than their non-IB peers at the 5th, 8th, and 10th grade levels (Healer, 2013).

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<tr>
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<th>5th Grade 2006</th>
<th>8th Grade 2009</th>
<th>10th Grade 2011</th>
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<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
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<tr>
<td>IB scores</td>
<td>600</td>
<td>39</td>
<td>551</td>
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<tr>
<td>Non-IB scores</td>
<td>581</td>
<td>45</td>
<td>528</td>
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</table>

Table 1. Means and standard deviations of IB and non-IB CSAP science scores during the years 2006, 2009 and 2011 (Derived from Healer, 2013)

- Systematic observation of 85 classrooms within eight Texas PYP and MYP schools in the United States was utilized to investigate instructional practice and student behaviors. Generally, IB teachers were observed utilizing active and engaging instruction while students were found to exhibit many positive learning behaviors. For example, IB students were observed as being “on task” 87% of the time, a much higher percentage than the 73% observed in a similar study of non-IB students (Alford, Rollins, Stillisano and Waxman, 2013).

Diploma Programme (DP) studies

- A study, which included all DP candidates who graduated from high schools in the United States in 2008, indicated that 78% of students enrolled in postsecondary institutions immediately after high school (the US average is 69%). Additionally, 98% continued on to their second year of study. Of former DP students, the four-year graduation rates at all four-year institutions (79%) were higher than the national average (39%) (see Figure 1) (Bergeron, 2015).

![Figure 1. Four-year graduation rates by institution type](http://ibo.org/en/about-the-ib/research/)

For more information, please contact research@ibo.org or visit http://ibo.org/en/about-the-ib/research/.
• Investigating the relationship between enrollment in the DP and students’ university preparedness in Mexico, a mixed-methods case study found that DP students often enroll in top-ranking universities in Mexico. The study also suggested that academically stronger students tended to enroll in the DP, reportedly due to a lack of satisfaction with other high school options. In interview responses, most students, teachers and administrators indicated that the DP does a better job of preparing students for university studies than non-IB programmes because of the DP’s rigour and unique curriculum (Saavedra, Lavoie and Flores, 2013).

• A study exploring “academic civic-mindedness” and “model citizenship” in the United States found that, compared with nationally representative samples of 12th grade students, the DP sample scored higher on 9 out of 10 items that tested their knowledge of US government structure, functioning and history. Additionally, interview data indicated that the DP strongly promotes students’ knowledge of public policy and understanding of effective advocacy techniques (Saavedra, 2014).

• Comparing matched samples of DP and non-DP graduates, a study examined the impact of Chicago’s IB programmes on the postsecondary outcomes and experiences of Chicago Public School graduates. During the 1990s, Chicago Public Schools introduced the DP into 12 high schools serving mostly low income, minority students with little or no family history of college-going. DP graduates were more likely to enroll in college, to enroll in selective colleges, to stay enrolled and to perform better than similar non-DP graduates (Coca, Johnson, Kelley-Kemple, Roderick, Moeller, Williams, Moragne, 2012).

• A study examining the learning benefits and outcomes of the extended essay on students’ research skills at a university in Canada found that IB graduates rated themselves higher on measures of self-efficacy for inquiry learning and were less likely to associate learning with memorization, in comparison with non-IB graduates. IB graduates also reported that the skills they learned from completing the extended essay were helpful in meeting the academic demands of university coursework (Aulls and David Lemay; Aulls and Sandra Peláez, 2013).

• The impact of the DP on academic and non-academic college readiness was investigated by examining DP and non-DP graduates at the University of Oregon’s Honors College in the United States. While researchers found no difference in college grade point averages between the two groups, DP graduates were significantly more likely to persist and to complete college than their non-DP counterparts. Qualitative data indicated that DP graduates were also better able to adjust to university coursework, specifically highlighting a number of skills gained through participation in the DP that were helpful in college, including critical thinking, time management and research skills (Conley, McGaughy, Davis-Molin, Farkas and Fukuda, 2014).
**Terminology**

This report defines key terms as follows:

**Postsecondary enrollment:** Postsecondary enrollment is enrollment or matriculation at a postsecondary institution. Postsecondary institutions include private, public, four-year, and two-year institutions.

**Four-year institutions:** Four-year institutions are generally referred to as colleges or universities and can award bachelor degrees or higher.

**Two-year institutions:** Two-year institutions are generally referred to as community colleges or junior colleges and do not award bachelor's degrees or higher, but can award associate's degrees and/or certificates.

**Retention (one year and two year):** Retention rates refer to yearly progression and continued enrollment one year or two years following initial enrollment, either at the same or a different institution.

**Graduation:** Graduation refers to successful completion of the programme of study or degree attainment. Both four-year and six-year graduation rates are included.

**Diploma earner:** A diploma earner is a student who successfully completed the requirements to earn the IB diploma. Diploma non-earners did not successfully complete the IB requirements to earn the IB diploma, but may earn the diploma awarded by their high school.

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**Introduction**

The International Baccalaureate (IB) Diploma Programme (DP) is an academically challenging and balanced educational programme that prepares students to succeed in postsecondary education and life beyond. Research suggests that IB participation improves secondary school academic performance (Caspara 2011, Saavedra 2011, Wade 2011), college enrollment and postsecondary persistence and achievement (Coca et al 2012, Caspar, Bland 2011, HESA 2011, Inkelas, Swan, Pretlow and Jones 2013). This study examines the pathways and outcomes of DP students in the United States who took IB exams in 2008, enabling analysis of four- and six-year graduation rates for the 2008 cohort. The full report also examines some data from DP students from Latin American countries, although data availability was limited for this cohort of students. Additionally, it extends previous research conducted by Halic (2013) reporting on the postsecondary outcomes of IB students graduating from US high schools in 2005.

**DATA SOURCES**

This study used data from two sources: the National Student Clearinghouse (NSC) student tracker system and the International Baccalaureate information system (IBIS). NSC is a non-profit organization providing student enrollment, performance and related information for more than 3,600 colleges and universities in the United States. IBIS is maintained by the IB and collects student demographic data and assessment data for DP students who register for exams. Exam scores, performance on other diploma requirements, diploma result codes and exam dates are recorded in IBIS. Data on all DP candidates (n=15,680) who took IB examinations in 2008 in public and private high schools in the US was requested in October 2014. Complete data was obtained for 13,555 students (94% attended public high schools and 6% attended private schools) which was used for these analyses.

**Findings**

**Postsecondary enrollment**

Ninety-two per cent of diploma students graduating from US high schools in 2008 enrolled in US postsecondary institutions between May 2008 and May 2014 (Figure 1). Seventy-eight per cent of students enrolled immediately. In comparison, in 2008 the national rate of immediate enrollment was 69% (Department of Labor 2009). Additionally, of all the DP students who enrolled immediately after high school graduation, 95% enrolled at a four-year institution. This is notably higher than the 2008 national average of 60% (Figure 2).
**Postsecondary retention**

The first year retention rate of DP students enrolled in four-year institutions was 98% (Figure 3), while the national rate was 77% (NCHEMS n.d.).

**Graduation rates**

The average four-year graduation rate of all DP students (both diploma earners and non-earners) was 79% (Figure 4). When considering diploma earners alone, the average four-year graduation (all four-year institutions) rate increases to 84%. Furthermore, DP students (both diploma earners and non-earners) have notably higher six-year graduation rates (83%) than the 2009 national average of 56% (NCHEMS n.d.).

**References**


