Facts & Figures: The Diploma Programme Around the World

1.3 million* DP graduates
140+ countries
*as of May 2015

Alumni of the Diploma Programme attend top-ranking universities, studies find.¹

DP students not only do well academically while in high school, but also go on to perform well at the university level.²

79% of DP graduates in China attended universities in the US, UK, Hong Kong, Singapore and Canada.³

In a recent DP study at the University of Oregon's Honors College, 89% of DP students recommended that other students participate in the DP.³ (p.51)

Sample size: 48 students

DP students in the US who enrolled in post-secondary education immediately after high school enrolled in and graduated from four-year institutions at much higher rates than the national average.

95% of DP cohort
60% national cohort

enrollment at four-year institutions (public and private)

79% of DP cohort
39% national cohort

average graduation rate at four-year institutions (public and private)
University admissions officials say the DP is the best qualification for developing students' non-academic skills and preparing them for further education and careers.¹

<table>
<thead>
<tr>
<th>Skill Category</th>
<th>A Levels</th>
<th>Diploma Programme</th>
<th>Scottish Highers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing workplace skills</td>
<td>3%</td>
<td>57%</td>
<td>9%</td>
</tr>
<tr>
<td>Nurturing an open mind</td>
<td>15%</td>
<td>71%</td>
<td>26%</td>
</tr>
<tr>
<td>Developing self-management skills</td>
<td>26%</td>
<td>76%</td>
<td>30%</td>
</tr>
<tr>
<td>Developing global awareness and connectivity</td>
<td>6%</td>
<td>80%</td>
<td>10%</td>
</tr>
</tbody>
</table>

DP alumni report the IB has profound, long-lasting effects on students' lives. It helps them **develop critical thinking, analytical and writing skills and a broader world view**. In addition, they point out that they earned advanced credits for university.⁶

International-mindedness means having the opportunity to have doors opened in other countries and widely renowned universities.⁷

*(DP student, p.38):*

A recent study among DP schools in Australia, China and India found that international-mindedness can be categorized as a tool for individual gain, an orientation towards shared understanding and a way to push boundaries for change.

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Global research findings on the Diploma Programme

According to university admissions officers, how well do A Levels and DP develop the following qualities in UK students? ¹

- The DP
- A Levels

- Encouraging independent inquiry: 24%
- Nurturing an open mind: 29%
- Developing self-management skills: 40%
- Encouraging a global outlook: 47%

Perceived capacity for 21st century skills

Compared to non-DP peers, DP graduates at universities in Australia and East Asia reported higher capacities for 21st century skills. ⁵

- IB
- Non-IB

Australia
- Cultural sensitivity
- Time management
- Leadership
- Global-mindedness

East Asia
- Cultural sensitivity
- Time management
- Leadership
- Global-mindedness

The effect of enrollment in the full DP

A large-scale study of public schools in an urban US district indicated that enrollment in the DP increases the probability that students will graduate from high school and enroll in college. ²

+20% GRADUATE FROM HIGH SCHOOL

+38% ENROLL IN COLLEGE

Outcomes at university

In the UK, DP students outperform their A Level peers in terms of enrolling in top universities and achieving first- or second-class honors. ⁶

- DP students
- A level students

- Enrollment in a top 20 university: 45.7%
- Achieving a first-class honors degree: 22.9%
- Achieving at least a second-class honors degree: 84.8%

University enrollment and graduation

DP students in the US have higher rates of university enrollment and graduation at four-year institutions compared to the national average. ⁷

- DP cohort
- National cohort

95% 70%
ENROLLMENT GRADUATION

A global study of IB alumni found that the IB has the potential to powerfully shape the lives of students who participate in its programmes. ⁸
DP in Turkey

Compared to non-IB students, DP graduates in Turkey had higher subject grades, overall grade point averages (GPA) and graduation rates. 7

<table>
<thead>
<tr>
<th>Cumulative GPA*</th>
<th>English*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.04</td>
<td>3.27</td>
</tr>
<tr>
<td>2.69</td>
<td>2.58</td>
</tr>
</tbody>
</table>

- DP graduates
- Non-DP graduates

* Differences were statistically significant (<0.05)

↑ 39%

In the US, Middle Years Programme (MYP) enrollment significantly increased the likelihood of earning a college-ready score* on a college prep exam by 39%.

*A 3 or higher on an AP exam or a 4 or higher on a DP exam

MYP in Asia

A study exploring the high school outcomes of former MYP and non-MYP students in Asia-Pacific found that former MYP students performed significantly better than non-MYP students in total DP points earned. 10

MYP students
Final diploma score
32.64

Non-MYP students
Final diploma score
30.47

Mean final diploma scores for students according to middle years programme type

72% of the DP graduates in China attended one of the world's top 500 universities*. 12

* 2002-2012

Of the 89 DP students that enrolled in ranked universities in Mexico, 73 enrolled in a top 5 programme. 6

DP in Chicago

DP graduates in Chicago public schools were significantly more likely to enroll in college, to enroll in selective colleges, to stay enrolled and to perform better than similar non-DP graduates. 11

- DP graduates
- Non-DP graduates

Attending a four-year college
77.3%

Attending a more selective college
37%

Persisting in a four-year college for two years
79%

Former DP students versus a matched comparison group on postsecondary outcomes

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Key findings from research on the impact of the 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 Programme (CP). The findings below come from internal and IB-commissioned research relating to the DP.

Examining the higher education outcomes of students in the UK, researchers explored the university enrollment and achievement of matched cohorts of DP and A level students.\(^3\) Results showed that DP students were significantly more likely than their A level peers to attend a top twenty university in the UK and to receive a first-class honours degree. DP and A level students were about equally likely to persist in their university studies (from the first to second year), however, DP alumni were somewhat more likely to engage in further studies after completing university (HESA 2016).

\[\text{Figure 1. University enrollment and outcomes for DP and A level students}\]

A study conducted by the IB Research department examined the university pathways of low-income and underrepresented minority students in Title II schools in the United States \((n = 20,403)\). Findings indicated that low-income DP students in Title I schools enrolled in college at similar rates to all DP students in US public schools \((79\% \text{ compared to } 82\%\) respectively\) and at much higher rates than the national average for low-income students \((46\%)\). Additionally, African-American DP students from Title I schools enrolled in college at higher rates \((87\%)\) than any other racial or ethnic group in the study \((Gordon, VanderKamp and Halic 2015)\).

Researchers in a global study conducted a curricular comparison of four DP mathematics courses along with five mathematics qualifications from around the world (Alberta Diploma, Advanced Placement, GCE A levels, Singapore-Cambridge GCE A Levels and Gáokǎo). Of the curriculums investigated in this study, the DP offered the greatest number of mathematical course options for students with different needs. Additionally, based on the criteria used in this analysis, the IB’s further mathematics HL was determined to be the most cognitively demanding course of the curriculums examined, followed by A level Further Mathematics and Singapore H3 Mathematics respectively \((Alcántara 2016 \text{ and } UK \text{ NARIC} 2016)\).

\[\text{Figure 2. Immediate postsecondary enrollment at four-year and two-year institutions (Source for national averages: NCES 2015)}\]

In 2011, the Japanese government announced its plans to introduce the DP in 200 Japanese secondary schools. This study examined the implementation of the dual language DP (Japanese and English) in Japan. Compared to non-DP students, DP students had higher self-ratings for being "internationally-minded" and had higher expectations of acquiring problem-solving and leadership skills while in high school \((Yamamoto et al 2016)\).

\(^1\) This study used propensity score matching in order to compare IB students with similar non-IB students. The idea behind this technique is to take each IB student and find a non-IB student that has similar background characteristics such as social economic status, race/ethnicity, gender and so on. This allows the researchers to better estimate and identify the impacts of the IB programme specifically, as the two groups are similar otherwise.

\(^2\) US schools with a high proportion of low-income students are eligible to become Title I schools, which allows for the allotment of federal resources to attempt to close the achievement gap (US Department of Education 2014).
A study at the University of Oregon’s Honors College in the United States explored the academic and social-emotional university preparedness of DP and non-DP graduates. Although researchers found no difference in university 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 also indicated that DP graduates were better able to adjust to the rigors of university coursework; students specifically highlighted a number of skills gained through participation in the DP, including critical-thinking, time management and research skills (Conley, McGaughy, Davis-Mollin, Farkas and Fukuda, 2014).

To examine the critical-thinking skills of DP students in Australia, researchers used two different measures of critical-thinking skills. For both measures, quantitative findings revealed gains in critical-thinking skills between the two successive years of the DP (years 11 and 12). Furthermore, students completing their second year of the DP reported a higher likelihood of using an array of critical-thinking skills (Cole, Gannon, Ullman & Rooney 2014).

A large-scale quantitative study (n = 13,555) investigated the higher education outcomes of DP students in the United States (2008–2014). Findings showed that 92% of DP students who graduated from high school in 2008 enrolled in university within a six-year period, while 78% of students enrolled immediately after high school. DP students also had high four-year (79%) and six-year university graduation rates (83% for DP students, compared to 56% nationally) (Bergeron 2015).

Researchers explored the academic persistence of DP students (n = 226) in five Eastern and Central European countries in comparison with non-DP students from top-ranking Romanian high schools (n = 328). The study found that the DP fosters students’ academic persistence to a higher degree than does the traditional education system (at least the Romanian system). The DP supports academic persistence both directly, through the curriculum, and indirectly, through the development of psychological traits supporting academic persistence. Lastly, DP students’ academic persistence further stimulates their academic performance and decreases their intention to drop out of school (Holman et al 2016).

![Figure 3. Four-year graduation rates by institution type. Note: National data only available for 2007 (NCES 2014)](image)

![Figure 4. Six-year graduation rates by institution type. Note: National data only available for 2007 (NCES 2014)](image)

References


For more information, please contact research@ibo.org or visit http://www.ibo.org/research.
The International Baccalaureate (IB) Global Research department collaborates with universities and independent research institutions worldwide to produce rigorous studies examining the impact and outcomes of the IB’s four programmes. This resource provides a brief overview of key findings from recent research on the DP core, which includes theory of knowledge (TOK), the extended essay and creativity, activity, service (CAS).

Theory of knowledge (TOK)

In theory of knowledge, students reflect on the nature of knowledge and on how we know what we claim to know.

- A study in Australia explored IB alumni and current DP students' ratings of their critical-thinking abilities. Quantitative results indicated gains in the use of critical-thinking skills between the two successive years of the DP. Additionally, second-year DP students reported a significantly greater likelihood of using a range of critical-thinking skills (Cole, Gannon, Ullman and Rooney 2014).

<table>
<thead>
<tr>
<th>Perceived TOK outcome</th>
<th>Mean score (SD)</th>
<th>Comparison of means (Year 11–12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical-thinking skills</td>
<td>Year 11: 4.23 (1.25)</td>
<td>t = 3.79, p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>Year 12: 4.50 (1.27)</td>
<td></td>
</tr>
</tbody>
</table>

Note: n = 1,242

Table 1: Mean differences in students’ perceived outcomes of TOK study, by year cohort.

- Examining the longer-term impacts of the DP on students, a global study reported the perspectives of a diverse group of alumni from 20–63 years of age. DP alumni reported that in the years following completion of the DP, they were able to more fully appreciate the benefits of participating in theory of knowledge, as one former student explained: "You know, I benefited more from [TOK] after I did it than when I was doing it ... and I probably now get more out of thinking about the things that were presented at that time than I did when I was a student there" (Wright 2015).

- TOK teachers from across the world offered their perceptions of the impact and implementation of TOK in IB World Schools. The teachers believed that the main benefits of TOK for students are the ability to critically evaluate information and to recognize and reflect on personal assumptions. The teachers also strongly agreed that teaching TOK has provided valuable professional development for them, as it has enhanced their own critical thinking as well as understanding of content and connections across disciplines (Bergeron and Rogers 2016).

Extended essay

The extended essay is an independent, self-directed piece of research, culminating in a 4,000-word essay.

A series of studies explored student experiences with the extended essay in the United States, the United Kingdom and Canada.

- A study at the University of Virginia (UVA) in the United States explored how the experience of completing the extended essay prepares students for university-level research and academic success. In comparison to Advanced Placement (AP) students, former DP students were more likely to report that they felt prepared for university coursework involving research; had executed a research project at UVA; were proud of their research; intended to conduct future research; and found their research skills to be important to future success. Several of these differences were statistically significant (Inkelas, Swan, Pretlow and Jones 2012).

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Key findings from research on the Diploma Programme (DP) core

- Another study investigated the high school research experience of former DP students at two universities in the United Kingdom. DP graduates reported that they enjoyed and valued their extended essay experience and believed it helped them to develop their critical- and independent-thinking skills (Wray 2013).

- The final study in this series explored the impact of the extended essay on student success at a university in Canada. DP graduates indicated higher ratings than their non-iB peers on self-regulated inquiry learning and were also less likely to view learning primarily as memorization. Former DP students perceived a number of benefits of the extended essay, including developing enhanced organization, reading, writing and analytic skills (Aulls and Lemay 2013; Aulls and Peláez 2013).

**Creativity, activity, service (CAS)**

In creativity, activity, service (CAS), students complete a project related to these three strands.

- A Jeff Thompson Award winner conducted a study on the use of reflection within CAS in six IB World Schools in Turkey. The findings suggested that all of the schools were encouraging reflection before, during and after CAS activities, as outlined in the Creativity, activity, service guide, and that schools were "moderately successful" in providing feedback on student reflections. The author, however, also recommended that schools require fewer but more authentic reflections, use varied forms of reflection and allow flexibility in the timing of reflections (Perry 2015).

- A study in Argentina, Canada and the United States explored the implementation and impacts of CAS. Both students and coordinators reported a range of impacts of student participation in CAS, including helping students to: develop an ethic of service; become more caring, open-minded and reflective; and develop more self-confidence and maturity (Billig 2013).

- Investigating the "academic civic-mindedness" of DP students in the United States, student and teacher interviews indicated that the frequent use of discussions, debates, presentations, writing assignments and teamwork in DP classes helps students to develop the skills that are necessary for civic engagement. Furthermore, in comparison with a nationally representative sample of 12th grade students, DP students scored higher on 9 out of 10 items that tested their knowledge of US government structure, functioning and history (Saavedra 2014).

References

Aulls, MW and Lemay, O. 2013. Exploring the learning benefits and outcomes of the IB extended essay in preparing students for university studies in Canada - Montreal, Quebec, Canada. Department of Educational and Counselling Psychology, McGill University.

Aulls, MW and Peláez, S. 2013. Exploring the learning benefits and outcomes of the IB extended essay in preparing students for university studies in Canada: Student perceptions of the impact of the Diploma Programme on the extended essay on the academic demands of first year in university. Montreal, Quebec, Canada, Department of Educational and Counselling Psychology, McGill University.


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