



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.¹ 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).

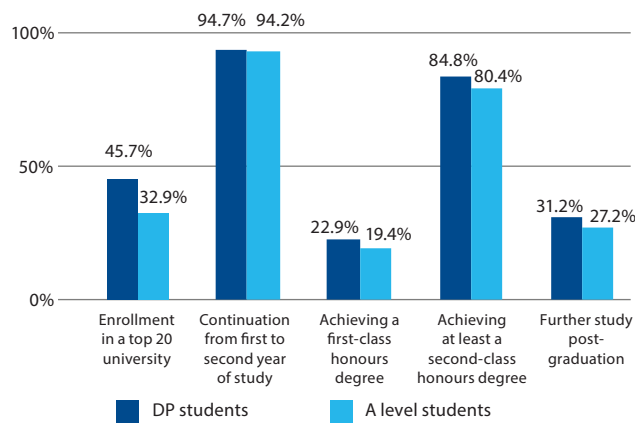


Figure 1. University enrollment and outcomes for DP and A level students

A study in **Turkey** investigated the **higher education outcomes** of DP graduates and their non-IB peers at Turkish universities. At university, DP graduates generally had higher subject grades (in all five subject areas examined), overall grade point averages and graduation rates than their non-IB counterparts. DP alumni also reported feeling well-prepared for university studies, particularly with regard to the use of English language skills and academic skills, such as writing and managing independent work (Ateşkan et al 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 Gāokāo). 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 and UK NARIC 2016).

A study conducted by the IB Research department examined the **university pathways of low-income and under-represented minority students** in Title I² 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% 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).

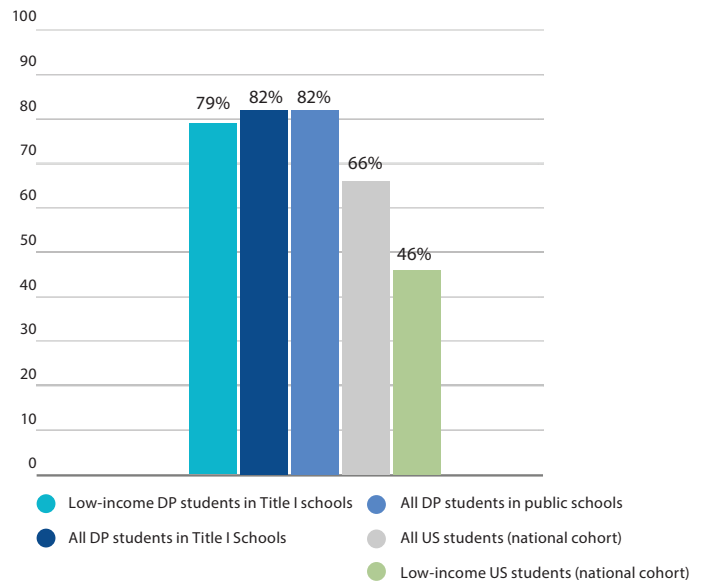


Figure 2. Immediate postsecondary enrollment at four-year and two-year institutions (Source for national averages: NCES 2015)

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 an IB student and find a non-IB student that has similar background characteristics (such as, socio-economic status, race/ethnicity, gender and so on). This allows the researchers to better isolate 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-Molin, 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).

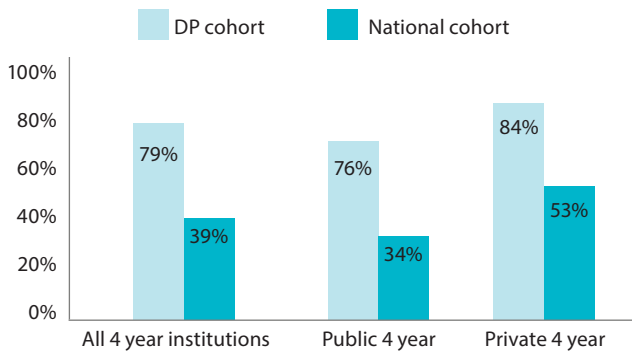


Figure 3. Four-year graduation rates by institution type
Note. National data only available for 2007 (NCES 2014)

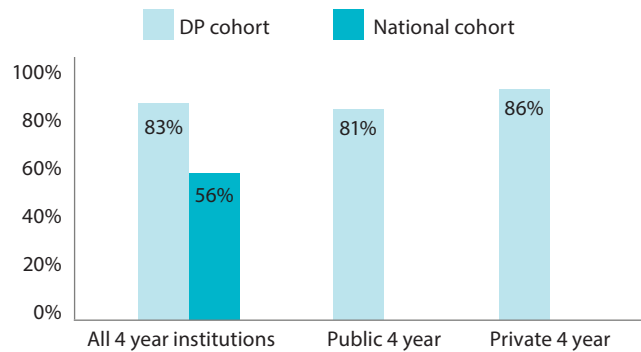


Figure 4. Six-year graduation rates by institution type
Note. National data only available for 2007 (NCES 2014)

References

- Alcántara, A. 2016. *International Baccalaureate mathematics comparability study: Curriculum and assessment comparison*. Bethesda, MD, USA. International Baccalaureate Organization.
- Ateşkan, A, Onur, J, Sagun, S, Sands, M and Çorlu, MS. 2015. *Alignment between the DP and MoNEP in Turkey and the effects of these programmes on the achievement and development of university students*. Bethesda, MD, USA. International Baccalaureate Organization.
- Bergeron, L. 2015. *Diploma Programme students' enrollment and outcomes at US postsecondary institutions 2008–2014*. Bethesda, MD, USA. International Baccalaureate Organization.
- Cole, DR, Gannon, S, Ullman, J and Rooney, P. 2014. *Theory of knowledge (TOK): Exploring learning outcomes, benefits and perceptions*. Bethesda, MD, USA. International Baccalaureate Organization.
- Conley, D, McGaughy, C, Davis-Molin, W, Farkas, R and Fukuda, E. 2014. *International Baccalaureate Diploma Programme: Examining college readiness*. Bethesda, MD, USA. International Baccalaureate Organization.
- Gordon, M, VanderKamp, E and Halic, O. 2015. *International Baccalaureate programmes in Title I schools in the United States: Accessibility, participation and university enrollment*. Bethesda, MD, USA. International Baccalaureate Organization.
- Higher Education Statistics Agency (HESA). 2016. *International Baccalaureate students studying at UK higher education institutions: How do they perform in comparison with A level students?* Bethesda, MD, USA. International Baccalaureate Organization.
- Holman, A, Pascal, EA, Bostan, C, Hoşbotă, AM and Constantin, T. 2016. *Developing academic persistence in the International Baccalaureate Diploma Programme: Educational strategies and associated personality traits*. Bethesda, MD, USA. International Baccalaureate Organization.
- National Center for Education Statistics. 2014. "Table 326.10. Graduation rate from first institution attended for first-time ..." Retrieved from https://nces.ed.gov/programs/digest/d14/tables/dt14_326.10.asp
- National Center for Education Statistics. 2015. *The Condition of Education*. Retrieved from http://nces.ed.gov/programs/coe/indicator_cpa.asp
- The National Recognition Information Centre for the United Kingdom. 2016. *Assessment in upper secondary mathematics: A comparison between the International Baccalaureate Diploma Programme and international qualifications*. Bethesda, MD, USA. International Baccalaureate Organization.
- US Department of Education (DOE). 2014. *Improving basic programs operated by local educational agencies (Title I, part A)*. Retrieved from <http://www2.ed.gov/programs/titleiparta/index.html>
- Yamamoto, BA, Saito, T, Shibuya, M, Ishikura, Y, Gyenes, A, Kim, V, Mawer, K and Kitano, C. 2016. *Implementation and impact of the dual language International Baccalaureate Diploma Programme (DP) in Japanese secondary schools*. Bethesda, MD, USA. International Baccalaureate Organization.