

Working to My Potential: Experiences of CPS Students in the International Baccalaureate Diploma Programme

Based on a research report prepared for the IB by:

Chicago Postsecondary Transition Project at the University of Chicago Consortium on Chicago School Research

Vanessa Coca, David Johnson, Thomas Kelley-Kemple, Melissa Roderick, Eliza Moeller, Nicole Williams, and Kafi Moragne





Project overview

In the mid to late 1990s Chicago Public Schools (CPS) embarked on an ambitious plan to expand academically advanced opportunities in its high schools. CPS opened five new selective enrollment high schools across the city, dramatically expanded the number of Advanced Placement (AP) course offerings and implemented small-scale International Baccalaureate (IB) Diploma Programmes (DP) in 12 neighbourhood high schools throughout the city.

The IB Diploma Programme, the focus of this report, is designed as an academically challenging and balanced programme of education with externally marked final examinations that prepares 11th and 12th grade students for success at university and life beyond. The programme is normally taught over two years and has gained recognition and respect from the world's leading universities. The aim of the IB is to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. Currently, the IB works with over 3,000 schools in 140 countries to offer IB programmes to over 900,000 students. Besides the Diploma Programme, the IB offers two other challenging and innovative programmes to students: the Primary Years Programme (PYP) and the Middle Years Programme (MYP).

The DP schools in CPS also incorporated course sequencing in the 9th grade aimed to prepare students for the DP in the 11th grade. This IB preparatory programme is referred to as "pre-IB" and is not an official IB offering but an initiative the district undertook. The high schools in this study serve predominantly low-income, racial/ethnic minority students with little to no history of college-going, and this project focuses on the experiences of these students.

This study is part of the Chicago Postsecondary Transition project, a multi-year research project tracking the post-high school experiences of successive cohorts of graduating CPS seniors. This report is a follow-up to two reports that looked specifically at how students participated in college search and selection. The first report, *Potholes on the Road to College* (Roderick, Nagaoka, Coca & Moeller 2008), looked at all graduates, while the second report, *Making Hard Work Pay Off* (Roderick, Nagaoka, Coca & Moeller 2009), focused specifically on the system's highest achieving students.¹

¹ Both reports can be found on the CCSR website at <http://ccsr.uchicago.edu/content/publications.php>.

Project design

This project examines the impact of Chicago's neighbourhood IB programmes on the postsecondary outcomes and experiences of graduates of the high school classes of 2003-2007. Quantitative analysis of the postsecondary outcomes of DP students was used to examine whether DP students, when compared with students not enrolled in the DP but with similar characteristics, are more likely to enroll in four-year colleges, enroll in more selective four-year colleges and persist for at least two years in a four-year college. Qualitative analysis of student interview data was used to better understand the DP students' experiences in college, self-reports of their capability to succeed in college-level coursework and their broader challenges during their transition to college. The study is guided by the following research questions:

1. Do students in the IB programme attend four-year colleges at higher rates; do IB students enroll in more selective colleges at higher rates; and do students stay enrolled in four-year colleges for two years at higher rates than their non-IB classmates?
2. How academically ready do IB students feel they are for success in their college courses; how do IB students describe their academic behaviours and mindsets; what academic identities do IB students develop; and are IB students well-equipped to navigate the institutional demands of college campuses?

This report advances the analysis from the earlier report, *Making Hard Work Pay Off*, in two ways. First, it moves analysis past students' qualifications for college to outcomes and experiences while in college. Second, it evaluates the impact of the IB programme on college enrollment and persistence using rigorous controls for selection into the programme. It also takes into account students' movement through high school from 9th to 12th grade.

Postsecondary data analysis sample

The sample used for the postsecondary analysis included 18,075 CPS graduates from 122 CPS high schools between 2003 and 2007, not classified as being in special education programmes or attending alternative or charter high schools. Included in this sample were 1,888 DP students and 2,589 students who started the "pre-IB" programme in the 9th grade but did not continue into DP in the 11th

grade. Of the 2003-2007 graduates, 60 percent were female and 40 percent were male. Also, 48 percent of students were African American, 34 percent were Latino, 6 percent were Asian/Pacific Islander and 12 percent were white. The non-IB students included for comparison in this study included those with the qualifications necessary to be eligible for enrollment in the DP (those who scored at Stanine 6 or above on their Iowa Test of Basic Skills). DP students come from neighbourhoods that are no more advantaged than the typical neighbourhood, and they are predominantly first-generation college students.

National Student Clearinghouse (NSC) data were used to identify whether former CPS students enrolled in college in the fall after graduation, and whether they were still enrolled in college two years after high school graduation. These data are then linked to the National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS) and Barron's selectivity ratings to further describe the characteristics of the colleges to which students have enrolled. Colleges are categorized by their selectivity using Barron's Profile of American colleges rating given in 2005: (1) nonselective four-year colleges, which combines Barron's less "competitive" and "non-competitive" categories; (2) somewhat selective four-year colleges; (3) selective four-year colleges; and (4) very selective four-year colleges, which combines Barron's two top categories ("highly competitive" and "most competitive").

Interview sample

Data for the qualitative analysis are drawn from interviews conducted with a longitudinal sample of 105 current and former CPS students. Specifically, the analysis for this portion of the research project focused on a sub-sample of 25 students in the DP, purposefully selected to reflect the racial/ethnic diversity of CPS as a whole: 11 (44 percent) were Latino, 10 (40 percent) were African American, 2 (8 percent) were Asian and 2 (8 percent) were white. Of these 25 students, 19 enrolled in four-year colleges (8 attended very selective colleges, 7 attended selective colleges and 4 attended somewhat selective colleges or nonselective colleges).

Quantitative findings

Evaluating the IB programme is particularly difficult for two reasons. First, students in the programme may be systematically different than their peers in that they self-select in to the programme. Second, within schools, students who leave the programme prior to becoming DP students also may be systematically different. The researchers addressed these problems by carefully constructing control groups of students who had similar characteristics but lived in areas of the city with little to no access to schools with IB programmes. By analyzing multiple groups of students, the researchers were able to examine the true impact of IB participation.

The first group consisted of all students who were a part of the pre-IB cohort in 9th grade. This group was then split

into those who continued into the formal DP in 11th grade and those who did not (Figure 1). Roughly 38 percent of the original students in the pre-IB 9th grade cohort withdrew from the programme before the 11th grade. Finally, the group of students who withdrew from the programme before becoming DP students was examined to determine if there were negative effects of enrolling and then withdrawing. These groups of students were matched with a comparison group in two stages that simulated both enrolling in the programme and the likelihood of withdrawing from the programme prior to DP enrollment. This rigorous evaluation should give an accurate estimate of the true impact of the DP on students' college outcomes.

Figure 1. The IB pathway

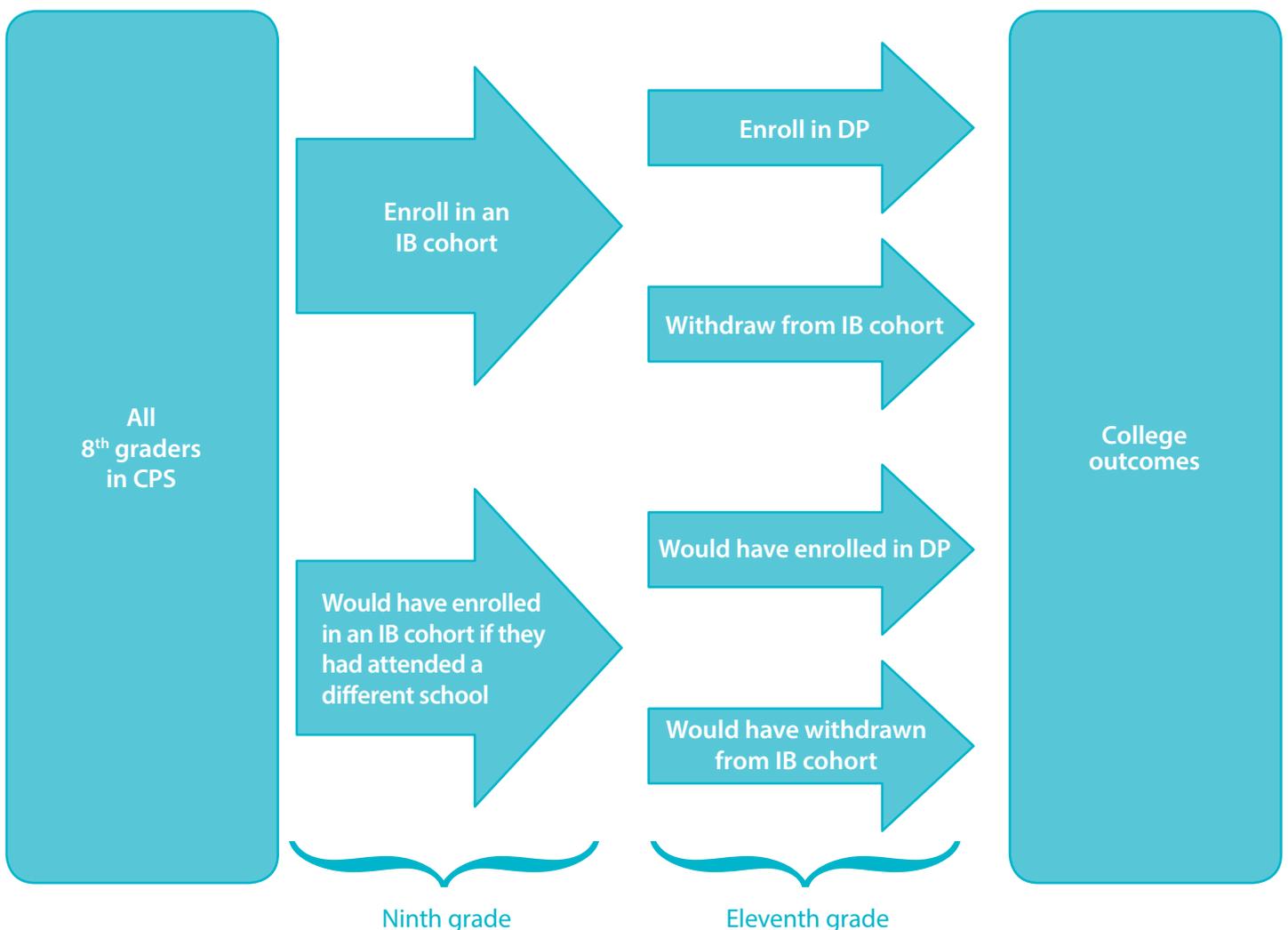
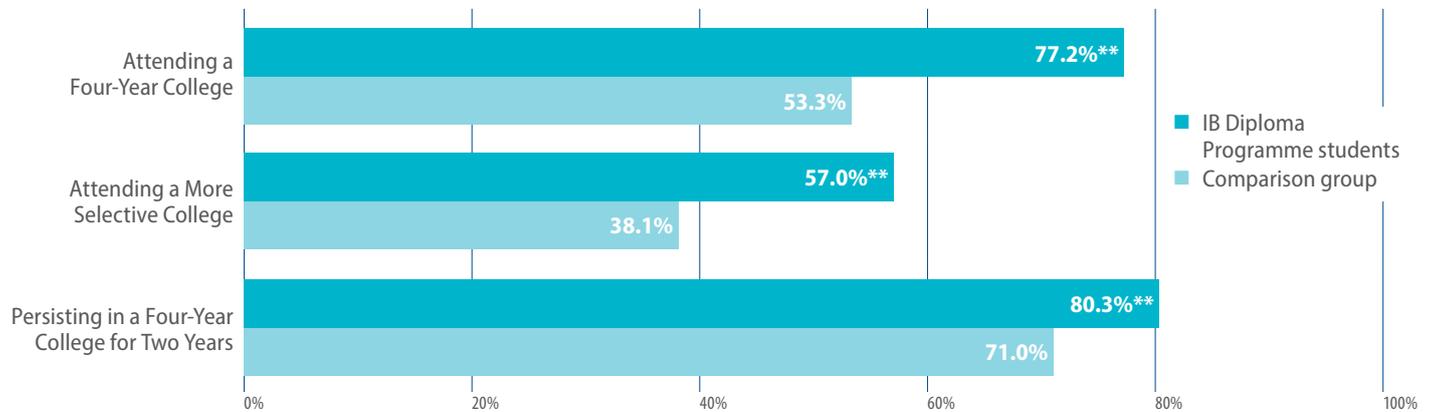


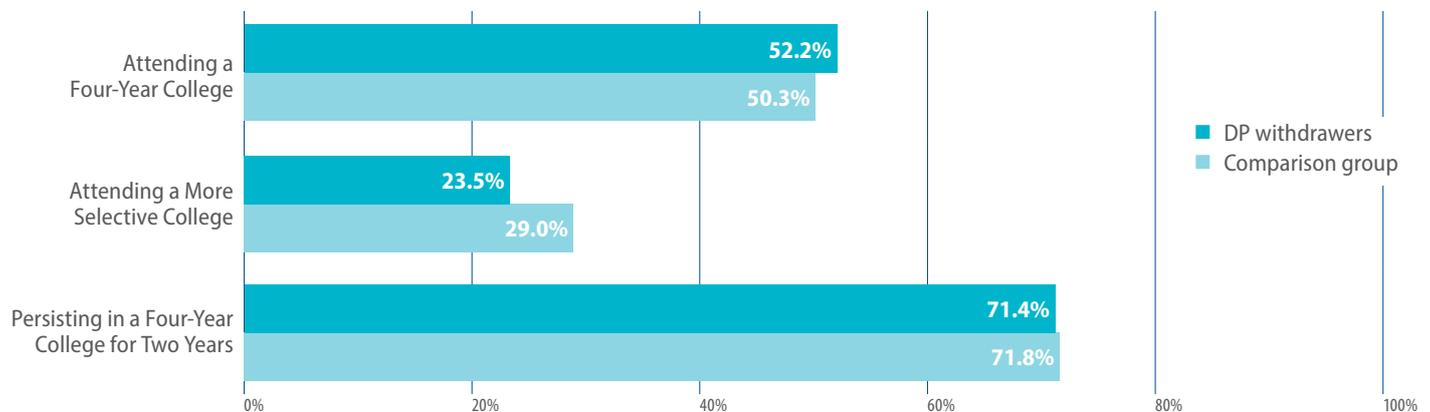
Figure 2. There are large effects for students who stay enrolled in the DP until 11th grade



** = p-value < 0.01, * = p-value < 0.05, ~ = p-value < 0.10

Note: Students in this figure graduated between 2003 and 2007. They represent all students who enrolled in the 'pre-IB' programme in the 9th grade and then enrolled in the formal 11th grade DP, as well as a set of matched students with similar characteristics.

Figure 3. Positive postsecondary effects disappear when looking at students who withdrew from the programme, compared to similar students



** = p-value < 0.01, * = p-value < 0.05, ~ = p-value < 0.10

Note: Students in this figure graduated between 2003 and 2007. They represent all students who enrolled in the IB Cohort in the 9th grade and then withdrew from the programme before 11th grade as well as a set of matched students with similar characteristics.

Enrollment and persistence

After creating appropriate comparison groups, analysis indicates students who are in the DP as of junior year are *more likely to enroll in college, more likely to enroll in a more selective college and more likely to stay enrolled in college*, compared to matched students who did not enroll in the IB programme (Figure 2). Students who withdrew from

the programme prior to becoming DP students look no different than their comparison group (Figure 3).

While the sample is not large enough to nest students within individual colleges, the selectivity of the college that a student attends can be controlled, whether that college is in- or out-of-state, and whether the college is public or private. When controlling for these additional

factors, none explains away the effect that the DP seems to have. That is, the analysis suggests that IB students are both going to better colleges at higher rates than their non-IB counterparts and performing better at those colleges once there.

Qualitative findings

The qualitative analysis is organized around the areas of Academic preparation, Academic behaviours and mindsets, Identity formation and belonging and Social capital and institutional support. Overall, the DP students interviewed generally felt that they were academically well-prepared to engage and succeed in college coursework. In addition to strong analytical writing and math preparation, students described their motivation, work habits, organization and time management as strengths.

Academic preparation

Many of the DP students interviewed explicitly credited their work in the IB programme for developing their analytical writing skills. In a number of cases, former DP students were underwhelmed by what they saw as less challenging, often shorter and more infrequent writing assignments in their college classes. Students who enrolled in on-level college math courses felt prepared to meet the challenge of more complex and more accelerated courses, while students enrolled in remedial or off-level courses frequently described the college math courses as repetitive and uninteresting. Although students were positive about their math and science preparation, a nontrivial minority who entered math-heavy undergraduate professional programs felt they lacked sufficient background in advanced math (eg, calculus) and science (eg, physics).

Academic behaviours and mindsets

Students consistently cited organization and time management skills, help seeking behaviours and motivation as important competencies. Many students described possessing strong organizational and time management skills. These skills were important because they played an important role in helping students eventually master the

workload and pace of college courses. DP students developed a strong belief in the necessity of having and relying upon an academic community during their high school years in the programme, which may have contributed to their reported ability to seek help from peers and mentors in college.

Identity formation and belonging

Previous research on racial/ethnic minority students' postsecondary transitions suggests that low-income, minority students—like those DP students interviewed for this research—may require additional competencies to manage complex and often imperceptible forms of psychological pressure associated with the racial climates of college campuses (Bowen, Chingos & McPherson 2009; Massey 2006). The DP students interviewed were highly motivated and goal-oriented. A number of the DP students interviewed described gradually realizing that they belonged in college, and felt they were as qualified as (and in some cases, more so than) their college peers.

Social capital and institutional support

Researchers have emphasized the importance of students' and families' social capital in the college transition as an explanation of how and why low-income minority students enroll in and complete college at lower rates than their white peers (Roderick, Nagaoka & Coca 2009; Roderick, Nagaoka, Coca & Moeller 2009). Research suggests that students' social capital not only impacts the college search and application process but also may effectively condition their access to college faculty (Arum & Roska 2011). Students' access to faculty and the overall quality of academic and social support they receive vary by institution. This research emphasizes that where IB students choose to attend college matters: colleges that provide weak supports to students—even very qualified, well-prepared students—can undercut those students' likelihood of success.

Conclusion

The International Baccalaureate Diploma Programme in Chicago Public Schools appears to be succeeding remarkably in giving relatively higher-achieving students in neighbourhood schools access to academically advanced coursework. The DP students interviewed, like the DP students throughout CPS, fit the profile of most first-generation college-goers: they are overwhelmingly African American and Latino, very likely to be low-income and unlikely to have a family history of college-going; they come from neighbourhoods that have high concentrations of poverty and few college-educated adults; and they are concentrated in racially segregated high schools with very limited histories of sending graduates to four-year colleges. Nevertheless, the DP students interviewed thrived in college.

They described college courses as an experience that they felt they were prepared for academically. They described their strong academic skills, especially related to analytical writing, and consistently cited academic behaviours and mindsets (eg, work ethic, motivation, time management and help-seeking) as sources of strength in the transition to college-level work. Although not possible to make strong causal attributions, DP students' own attributions suggest how particular dimensions of their high school experiences may have shaped their preparation for college. This research suggests DP students in CPS experience stronger, more demanding and more supportive learning environments than similar students in honours programmes or selective enrollment high schools. The DP in CPS appears to be meeting the challenge of providing a rigorous and highly demanding academic programme

for students. On average, although they enter high school with somewhat lower elementary school grades and test scores, DP students graduate from high school with skills and qualifications that resemble those of students in Chicago's highly-regarded selective enrollment and magnet high schools.

This research suggests that DP students in CPS attend four-year colleges, attend more selective colleges and persist in college at higher rates than similar students in honours programs and selective enrollment high schools. These benefits appear to extend to students in the programme regardless of performance on DP exams. There is considerable cause for optimism about the power of the DP experience to prepare students for the challenging work they will face in college courses.

On one hand, students' experience in this IB cohort may be beneficial, both in terms of their performance in the formal 11th- and 12th-grade DP and in terms of eventual college enrollment, performance and graduation. On the other hand, the 38 percent attrition within these IB cohorts raises significant concerns, both about how and why that attrition occurs, as well as how that attrition may lead researchers to overstate the benefits of the DP.

These findings have important implications for other districts interested in implementing IB programmes. More broadly, they can help policymakers and practitioners better understand what it takes to promote college readiness in high schools.

References

Arum, R and Roksa, J. 2011. *Academically Adrift: Limited Learning on College Campuses*. Chicago: University of Chicago Press.

Bowen, WG, Chingos, MM and McPherson, MS. 2009. *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton, New Jersey: Princeton University Press.

Massey, D. 2006. "Social background and academic performance differentials: White and minority students at selective colleges". *American Law and Economics Review*. Vol 8. Pp 390-409.

Roderick, M, Nagaoka, J, Coca, V and Moeller, E. 2008. *From High School to the Future: Potholes on the Road to College*. Chicago: The Consortium on Chicago School Research.

Roderick, M, Nagaoka, J and Coca, V. 2009. "College readiness for all: The challenge for urban high schools". *The Future of Children*. Vol 19, number 1. Pp 185-210.

Roderick, M, Nagaoka, J, Coca, V and Moeller, E. 2009. *From High School to the Future: Making Hard Work Pay Off*. Chicago: The Consortium on Chicago School Research.

This summary was developed by the IB Research department. A copy of the full report is available here: ibo.org/en/research/. For more information on this study or other IB research, please email research@ibo.org.

To cite the full report, please use the following:

Coca, V., Johnson, D., Kelley-Kemple, T., Roderick, M., Moeller, E., Williams, N., and Moragne, K. 2012. *Working to My Potential: Experiences of CPS Students in the International Baccalaureate Diploma Programme*. Chicago: The Consortium on Chicago School Research.

