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“IB for All” from Idea to Implementation: A Literature Review of Participation, Perception, and Student Support in the IB Diploma Programme

Gina L. Graham
Bethel University

“IB FOR ALL” FROM IDEA TO IMPLEMENTATION:

A LITERATURE REVIEW OF PARTICIPATION, PERCEPTION, AND STUDENT SUPPORT IN THE IB DIPLOMA PROGRAMME

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Gina Graham

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Thesis Advisor: Nathan Elliott, M.A.

Program Director: Lisa Silmser, Ed.D.

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Abstract

The International Baccalaureate Diploma Programme's (IBDP) expansion over the last two decades demonstrates its potential in US schools; however, it is important to analyze the implications of programme implementation. The following literature review aims to answer the question: What efforts have been made within US schools to ensure the IBDP is more equitably accessible by diverse groups of students and that its support of those students' academic and social-emotional needs is likewise expanded? Relevant recent studies focused on who participates in the IBDP shed light on enrollment and access gaps related to ethnicity, gender, and school location. An analysis of recorded perceptions of the programme from a variety of stakeholders, including students and teachers, is also included to reveal the benefits and limitations of the programme. In light of the academic rigor associated with the IBDP balanced with calls to expand "IB for All", specific strategies are considered for de-tracking as well as identifying and supporting the unique social-emotional needs of IB students. A particular emphasis in research includes the importance of an equity-focused growth mindset and a shared vision to move "IB for All" from merely an idea to its full potential in implementation.

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CHAPTER I: INTRODUCTION

Context and Rationale

Since its inception in 1968, the International Baccalaureate (IB) has worked to create rigorous programmes that "encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right" (IBO, 2019, p. 4). While initially less well-known in the United States, the IB is becoming more widespread due in no small part to these aims to provide holistic and academically excellent education to all students.

There are currently 1,926 schools in the US offering one or more IB programmes, and of those, 1,712 are public schools (IBO, 2022). From the early 2000s to the present, there has been a "surge in enrollment" (Thier & Beach, 2021), and this increase has been studied throughout relevant literature. The IB Diploma Programme (IBDP) was the first programme created by the IB, and as such has a long history in scholarly research. As the International Baccalaureate itself notes, the IBDP "sought to provide a challenging yet balanced education" (IBO, 2019, p. 1) meant to prepare students to enter university.

The IB in the United States is often first recognized as an accelerated curriculum for high school students, in a similar vein as the Advanced Placement (AP) program or Dual Enrollment (DE) programs like the Post-Secondary Enrollment Options (PSEO) in Minnesota. Historically, the IB has been an option of choice for gifted or high-

performing students. Due to this, IB is sometimes seen as elitist or exclusionary, only for a certain 'kind' of student.

Both the IB itself as well as schools offering the IB have been trying to shift this narrative to broaden the programme to "IB for All." Considerations must be made for both access and equitable support. As with best practices for differentiation and multilingual learners, educators must consider how to ensure the execution of the IB contains high challenge paired with high support. Students within the IBDP are expected to complete tasks with high academic rigor, but it is vital to question what effective scaffolding and differentiation can look like in order to maintain fidelity to IB curricular standards while also supporting a variety of student needs and strengths.

Social-emotional wellness is of particular relevance, especially in light of the recent pandemic, as students' mental health struggles have become more obvious or more pronounced. Significant research has been done regarding students' perceptions of the IB and related stress, which can lead to pathways for change or support that schools must consider. Schools must analyze their execution of the IBDP in order to better support students and to encourage participation in order to fulfill both the IB mission statement and their own ethical responsibilities to provide high-quality education and support to all students.

Research Question and Significance

In order to truly understand the reach of "IB for All," stakeholders must consider the following research question: What efforts have been made within US schools to

ensure the IBDP is more equitably accessible to diverse groups of students, and that its support of those students' academic and social-emotional needs is likewise expanded?

If individual educators and the IB as a whole truly want to reach all students, one must consider recent historical trends in IB participation as a starting point. Perceptions of the IBDP are also closely related to this study, as students' and teachers' mindsets about IB have a large impact on participation, persistence, and performance. There are documented benefits of the IBDP, but its challenges and limitations also affect students and should be considered. Lastly, a review of existing research about programme structure, interventions, and student social-emotional wellbeing helps teachers and school leaders best support a wide range of students.

Key Terms

In addition to IB-related acronyms earlier defined in this section, a review of other key terms is helpful for understanding related literature in this area. First, in addition to IB courses, researchers often refer to "pre-IB" classes or training. While this term is not officially used by the International Baccalaureate, it has come to be used for courses offered in 9th and 10th grade before the IBDP and often includes academically rigorous coursework, critical thinking, or other preparation for the programme through skills like time and task management, research, and greater student independence. This is, of course, included in the Middle Years Programme (MYP) curriculum in IB-continuum schools.

Within the IBDP, students have the option of being “course candidates” (taking one or more IB courses in addition to other traditional high school classes) or “full diploma candidates” (taking all IB courses and completing other requirements such as IB’s Extended Essay, Creativity, Activity, Service (CAS) projects, and the Theory of Knowledge course). Students can receive recognition for satisfactory completion of their work, and college credit, as both course candidates and full IB diploma candidates, though the latter is considered to be more highly regarded. Individual schools determine any entrance criteria to the programme, including permitting course candidates or only full diploma candidates.

In addition to IB, many researchers choose to look at similar or related programs. Advanced Placement (AP) is similar to course candidacy, where students take classes in one or more subjects. Depending on the school, students may also only take the AP exam rather than being required to take an AP class. Another way of potentially earning college credit in high school is through dual- or concurrent enrollment, using programs such as Post-Secondary Enrollment Options (PSEO), College in the Schools, Youth Options, or early college. Likewise, G/T, or gifted-and-talented, programs, are often associated with IB participation as those students fall within traditional views of “typical” IB students. Related research also often discusses GPA, or grade point average, in relation to IB classes.

Lastly, a pair of related terms is used throughout the paper. There is an important distinction between accessibility and enrollment (or participation) when it

comes to the IBDP or other curriculum programs. Accessibility can be defined as when a program is offered at a school, while enrollment refers to the students who actually participate in that program. Enrollment is often used interchangeably with the term "participation." The distinction between access and participation/enrollment is critical to consider throughout this investigation.

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

In establishing the parameters of this literature review, a variety of databases and search terms were used to guide investigation. Databases utilized included ERIC, Academic Search Premier, ProQuest Education Database, PsycINFO, SAGE, and Google Scholar. To locate specific studies, the list was narrowed to studies from peer-reviewed publications from 2006-2022. This was further focused through the inclusion of studies conducted in the United States. The keywords that were used included “IB for All”, “International Baccalaureate + equity”, “International Baccalaureate + perception”, “International Baccalaureate + tracking”, “International Baccalaureate + access”, and “IB + programme.” The structure of this chapter is to review the selected literature in four sections in this order: Access and Participation in the IBDP; Perceptions of the IBDP; Detracking and Moving to “IB for All”; and Identifying and Supporting All Students’ Needs.

Section 1: Access and Participation in the IBDP

With the increase in enrollment, it is likewise important to ask who does and does not participate in the International Baccalaureate Diploma Programme (IBDP) in the United States in order to more clearly consider its impact on students and how to best support them.

Programme Availability

In 2021, researchers Thier and Beach studied the availability of the International Baccalaureate (IB) at the national level. Thier and Beach manually merged data from the IB's website and the National Center for Education Statistics Common Core of Data in order to match schools offering an IB programme with a school with similar characteristics, such as poverty, minority concentration, and proximity to cities.

Thier and Beach identified 1,562 public schools offering at least one IB programme, among the Primary Years Programme (PYP) for grades K-5, Middle Years Programme (MYP) for grades 6-10, and the Diploma Programme (DP) and/or the Career Programme (CP) for grades 11-12. Thier and Beach determined poverty through the proportion of students eligible for free-and-reduced lunch and defined proximity to cities with a five-level ordinal variable, categorized as "cities, suburbs, …fringe, distant, and remote town/rural areas" (p. 185).

Thier and Beach (2021) then matched each individual school with a comparable non-IB school, controlling for poverty concentration, minority concentration, and geographic location relative to city proximity. This information was then compared and analyzed to denote any relations between IB availability and these characteristics in comparison to both a matching non-IB school and US public schools overall. Researchers described some limitations in matching schools, resulting in 95 schools that were unable to be matched and excluded from further analysis, in addition to 13 schools in Washington, D.C., whose location was deemed to be too close to large cities, which

would inflate data. Due to limited data available for private schools, Thier and Beach only looked at programme availability and proximity to cities. No mention was made of charter schools when describing methods.

Through computational analyses and a variety of logistic regression models focused on each characteristic, Thier and Beach (2021) were able to control variables for the other two characteristics. For example, while running through their four models holistically, IB availability did not depend on whether a school had a high degree of poverty, but rather "how diverse that high-poverty school was or if that high-poverty school was very far from a city" (p. 190). They found that there was a positive relation between school diversity and availability, meaning schools that were more diverse were more likely to offer IB programmes. Their most conclusive finding was that the further a school was from a city, the less likely it was to have any IB options when considering each of the five ordinal variable definitions of proximity.

Similar to Thier and Beach, Burns et al. (2019) recognized the importance of looking nationwide at the availability of IB programmes. In a report for the National Center for Educational Statistics, Burns et al. took a holistic approach looking at the availability of IB in concert with other accelerated curriculum options like Advanced Placement (AP) and Dual Enrollment (DE). Noting the lack of updated research on IB availability, Burns et al. utilized the High School Longitudinal Study of 2009 (HSLS:09) and the 2013 Updated and High School Transcripts Restricted-Use Data File from the US Department of Education to collect and analyze data on enrollment and demographics,

as well as post-secondary plans. The HSLS:09 pulled data from 944 schools across the US, made up of more than 23,000 students. Burns et al. (2019) found that, on average, participating schools offered 12.1 AP or higher-level (HL) IB courses, with 1.9 math courses and 2.6 science courses, on average.

Further data correlates to Thier and Beach's (2021) findings in two ways. First, Burns et al. (2019) learned that schools with an English-Language Learner population greater than 5% had more AP/IB/DE courses. Second, Burns et al. found that city schools and suburban schools offered more AP/IB/DE courses total than the national average, at 13.4 and 14.7 on average, respectively, and significantly more than rural schools at 9.8 courses on average. However, when looking at poverty-concentration and socioeconomic status, the findings differed. Burns et al.'s study revealed that when schools with a small number of students receiving free and reduced lunch (n=0-18%) had 14.7 AP/IB/DE courses, whereas schools with a high population of free-and-reduced-lunch students (n=68-100%) had only 9.8 AP/IB/DE course options. This difference may be due to the fact that Burns et al. (2019) studied only high schools while Thier and Beach (2021) looked at K-12, in addition to the time between studies.

Burns et al. (2019) also compiled data on the percentage of students earning high school credits in any AP/IB/DE courses as well as the average number of credits, categorized by socioeconomic status. Students with the highest SES took 70% of AP/IB/DE. Students from families with fewer resources also earned fewer AP/IB/DE credits, at 2.8 on average, compared to 4.3 credits from the highest fifth of socio-

economic status, leading to critical implications related to participation and socioeconomic status.

A more recent study conducted by Price in 2021 also worked to assess what schools offer college-preparatory classes, such as AP, IB, or dual-enrollment, which students participate, and which students earn credit or demonstrate mastery. Price utilized data from the Civil Rights Data Collection (CRDC), which collects data on AP and IB enrollment and test taking, including racial and ethnic classifications, information on school enrollment, Title 1 status, and school type. Price found only 6% of American high school students were enrolled in AP, and fewer than 1% are enrolled in at least one IB class, but recognizes that due to age restrictions or prerequisite courses, many students are too early in their high school career to enroll in AP/IB. Using their first model, Price found districts with more AP/IB seats per student had lower proportions of race-based disparity in accessing college prep curriculum. Schools that were defined as hypersegregated (serving 95% or more students of color) also showed a greater disparity in credits earned.

Perna et al. (2011) combined national data about IB participation and exams along with survey data from IB coordinators in one state, Florida, to study trends in demographics and IB availability at two levels. The research team chose to use Florida as their sample given that nearly 50% of public schools offering IB in the 2002-2003 school year were in the southeast and Florida offered the four core subjects more often than the national average while also having more schools than other states. Perna et al.

received a response from 52 schools, or 75%, and chose to limit the sample to public schools (n=45).

Through descriptive statistical analyses using cross-tabulation, chi-square, and t-tests to assess statistical significance, Perna et al. (2011) learned that in the US overall, the total number of schools offering the IBDP increased over time. There was also an increase in IB offered in rural areas and at Title 1 schools. Student participation increased by 477% between 1995-2009. In this timeframe, the population's gender composition did not change but the participation rate of non-White students increased, as did the rate of participation of students qualifying for free-and-reduced lunch, though only slightly. The research team also found that while schools offering the IBDP were becoming more diverse, the characteristics of actual participating students were less so, though they did note that this may connect to the number of magnet schools included in this sample.

Despite the increase in participation in IB overall, Perna et al. (2011) did find that in Florida, there was a large variation in the criteria to enter the IBDP, running from minimum GPA (in 35 of 42 schools), advanced/honors coursework (in 24 of 41), or letters of recommendation (12 of 36) and/or interviews (5 of 38), meaning even if the school was not specifically "tracked," not all students were eligible for participation in the IBDP. Of the schools that responded, 91% also required a minimum GPA to stay in the program. Interestingly, of those surveyed, 89% require students to be full diploma candidates, meaning students cannot pick and choose individual courses but instead are

required to take six courses and complete the DP core. At low-income schools, only 77% of programs require the full IB diploma path. Offering only the full IB diploma rather than course candidacy (taking individual courses) may also be limiting participation in the IBDP, though Perna et al. do not delve into this question within their body of work. These limitations and requirements of which students may enter the programme may also be influenced by systemic inequities related to race and ethnicity, though Perna et al. did not include this in their research. In combination, Burns et al., Price, and Perna et al. bring forth another main area of research regarding the access to the IBDP: gaps in participation in relation to race and ethnicity.

The Racial Participation Gap and Efforts Towards Mitigation

While much of the research surrounding participation in the IBDP includes data about race and ethnicity in addition to other factors nation-wide, other studies focus particularly on the participation gap at more local levels. Lamb et al.'s 2019 study noted that IB/AP/DE courses make up a large part of gifted-and-talented programming at the high school level. Nationwide, they noted that White and Asian students were over-represented in gifted and talented enrollment, but while 24.8% of the US Student population is Hispanic and 15.5% is Black, "only 18% of Hispanic students and 9.9% of Black students enrolled in GT programs" (p. 205). While they did not collect specific numbers related to IB, their findings indicated that similar over- and under-representation occurred in AP classes as well, with 68% being White or Asian, and only 19.6% Hispanic and 9.2% Black.

Lamb et al.'s (2019) work collected information on Texas schools in light of a 20% rule that guides gifted and talented enrollment to assess equitable enrollment. Given this rule, 20% of the schoolwide population of any given ethnic group within the school should be identified and served within G/T programming. Using data from the Office of Civil Rights and Texas Education Agency, Lamb et al. calculated an inequity score (IS) for each district. A positive score signified that a district had more than 20% enrollment, and a negative meant that a lower percentage was enrolled.

Lamb et al. (2019) focused on Hispanic representation in G/T programming, and 994 districts were included in the sample. Of these, over 70% (n=712) did not meet the 20% rule. However, 41 schools were within 1%. Given this, the authors pointed out that while states may have expectations for equitable access in GT programming, Texas did not offer specific metrics on what it meant to be reflective of the population either as a whole or given ethnic groups. Through this research, it was found a 20% rule worked most effectively in districts with over 800 students and a balanced representation of ethnicities, leaving questions as to how to best assess equitable enrollment in programs such as AP/IB/DE.

In a similar study of the access gap, Maina et al. (2020) limited the scope of their research to one county rather than state-wide, with Montgomery County Public Schools in Alabama, to assess the county's goals of closing race and income participation gaps and raising AP/IB performance with the Equal Opportunity Schools (EOS) initiative. Maina et al.'s study focused on three cohorts between the 2016-17 and the 2018-19

school years, with each cohort adding more schools to the data pool. Maina et al. compiled data from student enrollment, report cards, and AP/IB test results, to analyze demographics such as race/ethnicity, gender, free-and-reduced lunch (also known as FARMs) eligibility, academic achievement, previous experience in AP/IB, student attendance and suspensions, as well as enrollment in career/technical education or dual-enrollment programs.

Maina et al. (2020) found that Hispanic/Latino and Black/African American students were less likely to have any AP/IB experience compared to peers of other races. In the four Cohort 1 schools in the 2016-17 school year, three of the four schools increased AP/IB participation across ethnic and FARMS groups. Still, surprisingly in five of six Cohort 2 schools the following year, there was a lack of improvement in relation to equitable participation for Hispanic/Latino and Black/African American students, regardless of FARMS participation.

Maina et al. (2020) also noted a significantly higher number of exams taken by Cohort 1's schools compared to others in the state, but not in Cohort 2, perhaps due to schools' efforts to "push" exams. In Cohort 1 and 2, 94% and 93% earned a C or better from at least one AP/IB course. However, schools still had gaps related to race and income. Approximately one-third of Hispanic students and less than one-half of Black students earned college ready scores on AP/IB exams. As such, the effectiveness of the EOS initiative in Montgomery County Schools was not adequately shown through this research.

Similar efforts to promote college readiness have been enacted in other locations as well; in 2008, New Mexico state law began requiring high school students to complete at least one advanced course in order to graduate. Booth et al. (2017) examined the completion rates of students in New Mexico who began ninth grade between 2009 and 2011 and remained enrolled for four years. The sample included 57,826 students from 124 districts and 238 schools and was limited to students who entered a school in ninth grade and stayed enrolled for four years. Researchers limited the analyses to include Native American, Hispanic, and White students, as they make up 97% of New Mexico's student population. The study did not analyze the participation of African American or Asian students. Booth et al. found that of the total population, over 56% of students completed at least one advanced course in high school (including AP/IB/DE courses), while 44% completed zero courses. Statewide, 18% took only one advanced course and 39% took more than one.

However, there was a significant gap in advanced course completion between White students and those of other ethnicity groups: 17 percentage points difference between Native American students and White students, and 14 percentage points difference between Hispanic students and White students. When correlating this gap to student academic performance, 51-52% of lower-performing Native American and Hispanic students completed an advanced course, compared to 64% of lower-performing White students. While the gaps were smaller with high-performing students,

it is worth recognizing that “high-performing” included only 7% of the sample, limiting the applicability of this finding (Booth et al., 2017).

Similarly to Thier and Beach (2021) and Burns et al. (2019), Booth et al. (2017) determined that the percentage of students completing one or more advanced courses was lower among those eligible for free-and-reduced lunch, with 49% completing a course compared to the 73% of students who are not eligible, as well as the average number of advanced courses taken being lower, at a ratio of 1.7 to 3.7. Findings also included that gaps in course completion were largest among students in small schools with less than 750 students. Booth et al. also found a significant difference for course completion by English language learners (ELLs), noting that only 37% completed at least one AP/IB/DE course, compared to 60% non-ELL students. On average, ELLs completed 0.8 advanced courses, whereas non-ELL students completed 2.6 advanced courses.

This echoes the research completed by Kettler and Hurst in 2017, which noted that while AP/IB participation increased for all students over time, the gaps between Black/Hispanic student AP/IB participation and White student AP/IB participation neither increased nor decreased substantially from 2001 to 2011 in the schools analyzed. Kettler and Hurst hypothesized that Black and Hispanic student AP/IB participation would increase over time, as they collected data from 117 suburban high schools from 79 public districts in Texas. Schools that did not have AP or IB courses in 2001 and 2011 were eliminated, as well as those who had less than 5% population

representation from the three groups studied. Researchers defined participation as students who took at least one exam.

Kettler and Hurst (2017) found there were statistically significant increases in participation for all students over time, as well as for Black students, Hispanic, and White students separately. When studying the magnitude of the ethnicity gap, however, the changes were not statistically significant. Both in 2001 and 2011, there were gaps between White students and their peers, and the gap for African American students was somewhat larger than for Hispanic students.

Following this finding, Kettler and Hurst (2017) attempted to identify patterns to explain why some schools had larger gaps than others, through a variety of factors, including achievement, socio-economic status, proportion of minorities of students and teachers, and teacher experience, among others. They were unable to find a clear factor that predicted the testing gaps, noting inconsistencies in certain variables, such as the fact that high overall school performance is often strongly associated with a larger Black-White participation gap but was not a predictor for a Hispanic-White gap. Kettler and Hurst did note an inverse correlation that the greater proportion of minority faculty in a school, the smaller the gap for Hispanic students' participation in AP/IB.

Student Participation

It logically follows that it is likewise important to consider who does *not* participate in IB programmes. Of note, Kettler and Hurst's study (2017) found that when determining the proportion of students taking AP/IB exams, "students identified for and

served by special education services [were] excluded" (p. 9) when calculating the total number of students in Grades 11-12. While this was in an attempt to ensure that the size of a school's special education population did not impact the overall proportion, it brings to light a limitation of research in regards to the IBDP: very few studies focus on, or even include, the participation of students receiving special education services. In this case, by eliminating all students in Special Education, it is possible that students who did take an AP/IB course would not have been properly calculated within Kettler and Hurst's proportion or that the data itself may be self-segregating.

Freeman-Green et al. (2018) likewise discussed the importance of studying the participation of students with disabilities in college-ready programs. Freeman-Green et al. studied 15 programs across the US: Advanced Placement (AP), Advancement Via Individual Determination (AVID), Career Academics, dual enrollment, early college high schools, Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), High School/High Tech (HS/HT), High Schools That Work (HSTW), Institute for Student Achievement (ISA), International Baccalaureate Diploma Programme (IBDP), Junior Reserve Officer Training Corps (JROTC), Project Lead the Way (PLTW), Talent Search, Tech Prep, and Upward Bound. While all 15 programs indicated they served students with disabilities, only two (High School/High Tech and Tech Prep) were able to provide disaggregated data for those students at the time of the study.

Freeman-Green et al. (2018) found data from the Office of Civil Rights indicating that in the 2009-2010 school year, 3,295 students served under IDEA were in IBDP

classes, but the findings were not disaggregated for students with disabilities and were often limited. As a result, Freeman-Green et al. urged schools to collect data on students with disabilities and participation on college ready programs themselves in order to analyze the effectiveness of these programs. As with other students, they noted that being college and career ready is pivotal and a key motivator for students taking IB or other advanced courses.

Davis et al. would agree, as shown in their 2017 study focused on the graduating class of 2011 in Minnesota. Using a sample size of 59,499 students from all MN public high schools, researchers analyzed participation in AP, concurrent enrollment, PSEO (post-secondary options, taking classes from a college or university), IB, and other/unknown acceleration programs, to address five research questions regarding participation; credits awarded; characteristics of students, schools, and colleges; college enrollment, persistence, and readiness; and if participation in such programs affected the latter.

Davis et al. (2017) tracked student characteristics such as gender, race/ethnicity, eligibility for free-and-reduced lunch, American College Test (ACT) scores, and math/reading scores on the Minnesota Comprehensive Assessments (MCAs); school characteristics such as size and location; college characteristics such as college type and level of selectivity; and post-secondary data with enrollment and persistence, which they analyzed using hierarchical logistic regression models. In 2011, 48% of Minnesota high school graduates had participated in at least one program, with 26% taking AP

classes, 19% in concurrent enrollment, 7% in PSEO, and 2% in IB. The study also recognized that, in comparison to all 2011 Minnesota graduates, students participating in these programs were more likely to be female (57%), White (87%), and not receiving free-and-reduced lunch (73%). These statistics did differ for IB students versus AP, PSEO, and concurrent enrollment, as IB students had a higher likelihood of being Black or Hispanic, as well as having attended a nonrural high school.

Davis et al. (2017) also found that students who completed accelerated courses were more likely to enroll in a Minnesota college than non-participants and were more likely to be attending four-year institutions. Participants showed higher rates of college readiness and participation, whether or not their college awarded credit for their AP/IB/CE work. The study did mention limitations, such as including only students who graduated and enrolled on time, as well as a possible underrepresentation of students who took IB/AP courses but did not test. Nevertheless, it echoes previous research in recognizing some access gaps for racial/ethnic minority students, as well as those eligible for free-and-reduced lunch but at the same time, calls for recognizing the value of IB, and other accelerated courses for students' future studies.

Section 2: Perceptions of the IBDP

Consequently, it is imperative that similar studies on the advantages and disadvantages of participating in the IBDP are viewed through the recognition that participation has historically been inequitable or limited, as illustrated in Section 1. Studies surrounding the IBDP often carry a balance of positive and negative associations,

and these must be analyzed in order to consider the best support systems for all students.

Considering the Pros and Cons: Perspectives of Students and Teachers

Grose and Sanchez (2021) conducted a study of 11th and 12th-grade students in one high school in a western state with a dual focus on considering diversity within enrollment as well as students' perceptions of the IBDP. Ninety-two of 94 students participated in the study, completing a pencil-and-paper survey with 24 questions on a Likert-type scale. Within this school, it was found that female students made up a larger percentage of students (n=60%) in the IBDP compared to their proportion of total students at the school overall (n=50%). Similarly, 43% of the students in the DP were White, despite being only 20% of the overall population. Asians were also identified as over-represented, and Black and Native American students' participation was roughly proportionate. Latinos were underrepresented.

While keeping these limitations in mind, Grose and Sanchez (2021) looked to perceptions of the IB. Within the school's program, 77% of students reported that the programme was stressful and 58% reported feeling overwhelmed. Of those, female students were noted to report higher feelings of being overwhelmed and stressed compared to male students. However, females were overrepresented within the sample compared to the school's general population.

As with most studies focused on the IB, Grose and Sanchez (2021) found that 98% of students reported that IB helped prepare them for college and connected that to

their motivation to participate. Students also planned on applying for and attending college at high rates (98-99%), and the findings indicated participants perceive their expectations regarding college readiness and postsecondary success are met by the IBDP. Grose and Sanchez concluded that there are significant implications to consider regarding the IBDP and college and career readiness, including the need to help all students consider their post-secondary options, especially in light of over-representation of some demographics within the IBDP as well as a variety in student plans between four-year colleges and community or technical programs.

Coca et al. (2011) also looked at the impacts of the IBDP in Chicago Public Schools for the graduating classes of 2003-2007. In addition to an analysis of the diversity of IBDP students compared to both the public school enrollment and selective enrollment students, the researchers specifically considered college enrollment, college selectivity, and college persistence. The research team utilized quantitative data from the Chicago Public Schools and census data, with a sample size of 85,663 graduates in 122 high schools but did not include charter schools or special education students. The research team then reduced the sample in order to create a matched sample and afford more accurate results, both for students who completed pre-IB work in grades 9-10 but did not continue to the IBDP (approximately 38%) and those who finished the programme. They were also compared to selective enrollment schools within the district.

Coca et al. (2011) found IBDP students were more likely to be African American and Latino versus White or Asian, when compared to those in selective enrollment schools. Students who continued in the IBDP were 40% more likely to go to a four-year college, and 50% more likely to attend more selective schools, while also being significantly more likely to persist at that college for at least two years. When considering the data for the students who did not continue to the IBDP, Coca et al. pointed out that while there are not similarly significant benefits from pre-IB programming, students did not have negative effects, such as worse scores on other tests or worse college outcomes.

In addition to looking at the quantitative data, Coca et al. (2011) interviewed a sub-sample of 25 students who mirrored the racial/ethnic diversity of IBDP students across Chicago Public Schools in order to gain insight into the perceived benefits of the programme. The researchers analyzed the interviews and coded the results to find themes, which were then put into qualitative data arrays. Overall, students felt prepared for college, both academically through content and skills, as well as behaviorally through habits such as organization, time management, and self-motivation. Students also cited the sense of community with their IBDP cohort as helping with course content and/or motivation, as well as relationships and rapport with teachers as benefits to the programme.

Shaunessy et al. (2011) also looked at students' habits and performance in the IBDP, studying perfectionism. Shaunessy et al. explained that perfectionism could be

viewed as a spectrum, from maladaptive to adaptive, and found benefits associated with adaptive perfectionism for IB students. Maladaptive perfectionism is more associated with the negative side, including unrealistic expectations, dissatisfaction, and social-emotional problems including depression, anxiety, and suicidal ideation. On the other end of the spectrum, adaptive perfectionism, consisting of high standards but positivity if they fall short of those goals, can even be healthy for students.

While working in a high school with both an IB programme and a general education program, Shaunessy et al. (2011) aimed to determine mean levels of perfectionism in relation to the student's programme participation, psychological functioning, and academic performance. At the time of the study, there were 141 students in the IB programme and 178 general education students, across grades 9-12. Through a variety of surveys and forms, such as the Almost Perfect Scale-revised, to measure perfectionism; the Youth Self Report form, to measure problem behavior related to mental health; and Student Life Satisfaction Scale to measure happiness or satisfaction with one's life, the research team determined that across grades, IB students showed higher levels of adaptive (positive) perfectionism than their general-education peers. The results were less consistent for maladaptive perfectionism between IB and gen-ed students, with IB students in grade 12 showing higher mean levels of maladaptive perfectionism than any previous year, as well as higher than their general-education peers.

Shaunessy et al. (2011) found that among IB students, maladaptive perfectionism was correlated with higher levels and symptoms of anxiety, and a large inverse correlation with life satisfaction. More positive, adaptive perfectionism had no significant relation to anxiety and a small, positive correlation with global life satisfaction. When it came to GPA, maladaptive perfectionism had a small, inverse relationship with GPA for IB students but was unrelated for general education students. On the other hand, adaptive perfectionism had moderate correlations with higher GPAs for both groups.

Shaunessy et al.'s (2011) study also found that IB students overall had high levels of adaptive perfectionism and lower levels of maladaptive perfectionism when compared to the general education group, meaning that they generally showed more positive traits of perfectionism. However, since older IB students reported more maladaptive perfectionism, students' perfectionism may move to be more maladaptive, but as this was not a longitudinal study, Shaunessy et al. pointed out that this may be merely due to the differences within each cohort. The research team concluded that schools should work to reinforce adaptive perfectionism in order to further support students and their perceptions of the programme.

Matthews and Kitchen (2007) discussed perceptions of students and teachers regarding school-within-a-school gifted programs, including AP/IB programs. The study focused on three schools within one city, which each had 13-23% of the population in special programs of AP, IB, G/T or a science enrichment program. Matthews and Kitchen

used open-ended questions to survey 471 students, 227 of whom were in the gifted programs, in addition to 58 teachers who taught both gifted and gen-ed classes. Strengths recognized by the gifted-program students included challenging and more interesting coursework, strong teachers, and preparation for university. While general education students were found to be less likely to identify program strengths than their G/T peers, this is logical given that they do not participate in those programs, though it does highlight a need for all students to be educated on the opportunities they could have to participate in these programs.

When it came to discussing the limitations of gifted programs, Matthews and Kitchen (2007) found 73-92% participants in those programs recommended changes regarding workload, program flexibility, and teacher support through both social-emotional awareness and level of expectations. They also offered recommendations on social changes, such as social-emotional support, giving more time for personal and social life, and ensuring approaches to G/T programming were "less elitist or segregated" (p. 265).

In the same vein, general education students made their own suggestions, though at a lower rate than gifted-program students. Matthews and Kitchen (2007) found that of general education students who said that changes should *not* be made, many "made pointed comments suggesting that no changes were necessary because the program students had too many advantages already [or that] the program should be abolished" (p. 265). General education students who did suggest changes focused on

exclusivity or increasing access, allowing more flexible paths into the program, and providing more information on the program.

Matthews and Kitchen (2007) categorized teachers' responses as positive, negative, or neutral/mixed, with 20-43% of teachers in a given school responses as positive, 22-53% as negative, and 3-53% as neutral or mixed. Positive aspects included integrated activities, friendships with other students, and increased opportunities for participants. When asked, teachers also discussed exclusivity and elitism, stereotypes in both directions between participants and non-participants, and other challenges, real and perceived, of the school-within-a-school structure. The researchers concluded that schools must consider how to provide G/T programming without resentment or misunderstanding through transparency, communication, flexible and equitable access, and recognition of other pathways to success.

With a similar focus, Hertberg-Davis and Callahan (2008) collected data from 23 high schools in seven states through a qualitative study with focus groups made of three to five students, in addition to individual interviews with students who dropped out of the AP/IB programs, teachers, and administrators. Through this data, the researchers were able to highlight general takeaways as well as differences between AP and IB students. Most frequently, students interviewed discussed AP/IB courses as an escape from low-challenge or boring general education classes, because they appreciated the challenge to go above and beyond. However, students expressed dissatisfaction with differences in workload between AP/IB courses and general education courses.

Hertberg-Davis and Callahan found IB students complained about workload at more frequent rates than AP students. Across programs, students reported sacrificing both events in their social life as well as sleep; however, they seemed to believe these sacrifices were worth it in terms of getting a high-quality education. Some even bragged about the workload and late nights as pride in their abilities.

Hertberg-Davis and Callahan (2008) categorized student responses about AP/IB's improved learning environment into two main groups: learning with students with similar abilities, interests, and motivation, and adult-like relationships with teachers. Students noted that their teachers believed in them and that working with similarly motivated peers encouraged them to work harder. This was seen as a clear benefit to many participants.

However, on the other hand, when Hertberg-Davis and Callahan (2008) spoke with students who dropped out of the AP or IB programs at their schools, students cited rigidity or "one-size-fits-all" approaches that did not meet their unique needs or interests. Some also were challenged due to not having the same background skills like writing, study, and time management skills, and never being given the support to catch up. Other students felt as if they were expected to use skills or "just get" material without teaching or scaffolding.

With an eye to representation, it is also noteworthy to consider Hertberg-Davis and Callahan's (2008) finding that minority students and students from low-SES backgrounds offered some unique insights. First, some students from minority

backgrounds reported the lack of diversity made for an "inhospitable environment for learning" (p. 207). Second, they also offered different stakes related to the benefits of AP and IB students. While all or most participants referred to getting into college as a motivator, students from rural areas, lower SES backgrounds, or minority groups saw the stakes of IB to be much higher as they tried to disprove racial stereotypes or to meet goals like being first in their family to graduate or being able to escape a lifestyle or living situation. As such, the benefits and motivators for being part of AP/IB classes is not solely academic, nor is it the same for all students.

Foust joined Hertberg-Davis and Callahan to continue this discussion of the non-academic ramifications of IB enrollment in a 2009 study focused on both advantages and disadvantages from students' points of view. Through interviews that were qualitatively analyzed, Foust et al. (2009) focused on four high schools within one state that offered AP and/or IB programs. The schools were chosen for being representative of the demographics of the state as a whole in terms of gender and ethnicity. Eighty-four students participated in group interviews, and their responses were coded and collapsed to analyze prevalent themes.

Foust et al. (2009) identified advantages, these themes including a more productive classroom, special bonds among participants, and self-confidence or pride in completing rigorous work. Students in AP or IB described admiration for their teachers' abilities to make content challenging or fun and cultivate more adult-like relationships with students. They also expressed feelings of similarity to other AP/IB students, and

difference to non-AP/IB students, in terms of willingness to learn, the ability to be themselves, and the belief they were more motivated, or in fewer cases, “had greater intellectual ability than students not taking these courses” (p. 298). These feelings of difference may be connected to one disadvantage the students mentioned, which was negative stereotypes or the feeling of being “perceived by non-IB students as arrogant, ‘exclusive,’ or ‘snobby’” (p. 301).

When it comes to other disadvantages, Foust et al. (2009) IB students often expressed that the workload was time-consuming and limited their ability for being sociable both in and out of the classroom. They also cited that the rigidity of IB meant there were limits on the classes they could take, their time for extracurricular activities, as well as the ability to interact with students who were not in the IB. Another reported disadvantage was high levels of stress and fatigue. The students reported that they often used all their time for homework and that in order to complete that work, some students sacrificed sleep.

Foust et al. also studied IB students’ views on sacrificing sleep in an earlier study in 2008. Pulling data from 23 high schools in seven states, Foust et al. (2008) questioned if participants in AP/IB courses felt forced to choose between social acceptance and academic success, before narrowing their sample to four schools for an in-depth study where two offered AP and two offered IB. Using interviews with 84 students who were nominated to represent the sample as a whole in terms of gender, ethnicity, and experience, researchers coded responses for analysis. Foust et al. found AP/IB students

did not report a forced choice between social acceptance and academic achievement, though IB students reported perceived negative feelings between IB and non-IB students. Students in AP/IB both indicated they believed they could balance academics and their social life, but they chose to prioritize these over sleep. Students in IB more often discussed sacrificing sleep than AP students. Researchers noted that since their interview questions did not include a focus on sleep or sleep sacrifice, "their constant mention during the interviews was an unsettling surprise" (p. 125). As such, the research team concluded that more research needed to be done that specifically focused on stress, pressure, and sleep sacrifice, as seen in their later work.

As a case in point, in the 2009 study, Foust et al. discussed many implications and called for action in three main realms: improved learning environments for all, peer relations, and sleep sacrifice and stress. First, the researchers remarked on the concerning trend of IB students describing general education classes consisting of low levels of challenge or teacher-preparedness. Second, they called for recognition of the value of differentiation, and recognition that challenging curriculum should not be solely for advanced courses. Finally, they offered suggestions on helping high schools support AP/IB students experiencing stress and pressure through seminars or workshops about time and stress management, while also examining workload "to ensure that students are encountering rich, challenging curriculum, not simply 'more work'" (p. 308).

Comparatively, Vanderbrook's (2006) analysis of the perspectives of intellectually gifted females regarding their participation in AP/IB programs was

significantly more limited both in terms of sample size and diversity, and analysis that leaned more in favor of segregated or tracked programs. Vanderbrook's study focused on intellectually gifted female students, highlighting this group as particularly deserving of study because female students are less likely to speak up in class as well as less likely to receive attention from teachers, and when they do so, the questions they are asked are more often simple or concrete, rather than open-ended. Vanderbrook also cited literature indicating G/T teachers should "possess high intelligence, expertise, and a passion for the areas in which they teach" (p. 135), though she failed to consider the possibility that these could be considered traits of any highly successful educator, rather than just teachers of gifted students, or that all educators should cultivate these traits. Vanderbrook also did not adequately consider claims of elitism within G/T programming. It could be argued that the author seemed to favor more segregated programs or highly exclusive school-within-a-school structures.

Within this study with an admittedly limited sample size of only five students, Vanderbrook (2006) worked with transcripts of interviews that were coded and then recoded, as well as observations of the participants. All five participants were middle to upper-middle class, and their programs were either part of a magnet program or school-within-a-school model. Three of the participants were of European descent, one was Cuban-Lebanese, and the other was Chinese. There were two IB students and three AP students, and all were either former students of the researcher or students of a relative

to the researcher, but Vanderbrook did not necessarily consider if this relationship would skew or limit results.

Vanderbook (2006) investigated the participants' view of challenges in the program. The five students cited lack of preparation either with content or time- and workload-management skills, making the transition in junior and senior year an adjustment. The IB students remarked on the volume of work, and all students discussed difficulty in adjusting to a change from doing little work before AP/IB to doing much more in those programs.

In Vanderbrook's (2006) study, students generally found teachers who were intelligent and passionate to be more effective than those who did not seem knowledgeable or passionate, or those who did not connect with their students well. When it came to peers, all five participants discussed their classmates as sources of academic and emotional support. One IB participant cited feeling secure relating to peers, highlighting similar feelings of sameness as reported in Foust et al. (2009). Vanderbrook recommended ensuring G/T programs like AP and IB challenge students, build independent learning, and offer academic, emotional, and career support to enhance these benefits. Perhaps surprisingly, Vanderbrook did not seem to consider these as benefits for all students, and in fact went further to advocate for teacher training in G/T education for AP/IB teachers, rather than suggesting differentiation techniques or applying these techniques for all students.

In contrast, Culross and Tarver (2007) expanded the focus and participants of their IB-related study, considering the perceptions of teachers and students while working with a quasi-public lab school that had both IB and non-IB students and classes. Approximately one-third of the junior class in the 2001-02 school year was accepted into the IB programme, where they participated in interviews with Culross and Tarver, focusing on academic and social life, perceptions of others, and the short- and long-term effects of the IB programme. Students cited a variety of motivations for joining the IB programme, which align with benefits cited in other studies, including gaining advantages for college admissions, being in an environment they saw as more conducive to learning, and increasing breadth and depth of subject area knowledge.

Teachers were also interviewed by Culross and Tarver's (2007) research team, and it was found that staff had a generally positive view of the IBDP, but did highlight the importance of resources and training, as the courses were considered to be both a high challenge for students and teachers. Teachers associated time management, organization, and work ethic or motivation as important factors to success. Failure was connected with "laziness, procrastination, or lack of time management skills" (p. 59). These negative associations were not further analyzed but set forth noteworthy implications for consideration, such as teachers' mindsets about students who are "good" IB students and those who are not.

The distinction between students who are successful in IB and those who are not is not the only division highlighted through Culross and Tarver's work (2007). Like

Matthews and Kitchen (2007), IB participants in this study noted a rift between students in the IB programme and the general education group, and also suggested providing more preparation in ninth and tenth grade to a larger group of students. The researcher team noted that the division between IB and non-IB means schools need to consider inclusivity, as well as to address relationships between both student and faculty groups.

Benefits from Graduates' Perspectives

While current students see benefits and challenges of IB programmes, it is worthwhile to also consider the viewpoint of IBDP graduates, particularly since most students cite college admission and readiness as a primary motivation for their participation (Coca et al., 2011; Grose & Sanchez, 2021; Matthews & Kitchen, 2007). Culross and Tarver (2011) published a summary of their previous findings on the IBDP. In addition to their 2007 study, this summary also shared data from an unpublished manuscript, which analyzed results of a survey of IBDP graduates from the classes of 2003-2006. Fifty-six graduates were contacted, with 50% (n=28) responding to a survey created with a Likert-type scale. Respondents ranged from their freshman year of college to graduate students. The survey found that 39% of respondents had done at least one honors class in college, and 25 of 28 had received advanced standing when they enrolled. Fifty percent of respondents received at least 15 credit hours from their DP courses. In addition to these more quantitative benefits, graduates reported advantages including an increased "international cultural awareness, … a greater

breadth and depth of knowledge, improved creative and critical thinking skills, and improved written communication skills" (p. 237).

This is echoed by other researchers supported by the IB itself. Conley et al. (2014) prepared a three-phase study of the impact of the IBDP on behalf of the IBO in collaboration with the Robert D. Clark Honors College at the University of Oregon. The study discussed academic and non-academic preparedness between IB and non-IB students. In Phase 1, researchers analyzed academic indicators including students' likelihood of being on track to earn their degree, persist in college, and maintain a high GPA. In Phase 2, students completed a survey meant to assess their adjustment to college, and in the final phase, they participated in interactive activities and discussion questions regarding academic and non-academic preparation, academic success, and adjustment to college.

Conley et al. (2014) worked with 60 IB students and 65 non-IB students in the honors college. Their findings suggested IBDP students adjust better to the rigor or expectations of college courses. Similarly, they reported lower levels of intimidation about workload and higher comfort levels in their ability to manage workload and time. It was found that the IB students persisted in college at a greater proportion than their non-IB counterparts. Researchers also concluded that the IB/Honors students were less concerned with grades than learning for the sake of learning, while also valuing critical thinking, interdisciplinary-learning, and consideration of multiple perspectives.

In Phase 3, where students participated in activities and discussions, they echoed other studies noting that despite the heavy workload, they saw the IBDP to be worthwhile and that they would recommend it to other students. In comparison to AP students, who only associated the program's value with the tests and credits, IB students did not perceive college credit as the sole or most valuable feature of the DP. Instead, they discussed the sense of community from the IBDP, their sense of pride in completing rigorous work, and overall, a more holistic view of their preparation to be developed as strong learners. Of course, as this study was sponsored by the IBO and the sample came from an honors college, it should be considered how or if the results may be replicated in other scenarios, especially when considering future action for schools and programmes.

Section 3: Detracking and Moving to "IB for All"

Given current participation and perceptions of the IBDP, stakeholders should devise methods to expand implementation of the programme for a variety of diverse learners and create strategies to best support those learners. As schools look to truly make "IB for All," there are a variety of steps to take in both school or programme structure and mindset shifts to create scaffolds and support.

Detracking's Impact on Participation and Results

One systemic change to be considered to further support diverse learners in the DP can be facilitated with the IB's emphasis on language acquisition. Generally, full Diploma students can take one "Literature" or "Language and Literature" course in their

home language or their school's majority language (Language A) and a Language Acquisition course in another language (Language B). However, the IB also offers a Bilingual Diploma in which students take two high level language courses to demonstrate high proficiency in both languages.

Lew (2020) examined such bilingual IB programmes at King High School, through a six-month ethnographic case study. Lew gathered data from interviews with the principal, programme coordinator, teachers, and linguistic minority students, as well as surveys and classroom observations. Located in the southern US, the school had 1100 students, with demographics as follows: "46% Latinx, 44% White, 5% Black, 2% Asian, and 3% other. Fifty-five percent of students received free/reduced-price lunch" (p. 4), highlighting the diverse population and how the school had leveraged the IBDP to support these students.

Lew (2020) noted King High School offered the Bilingual Diploma, and found it pivotal to attract language-minority students to their programme, as it allowed administrators and teachers to successfully recruit these students and increase their participation in IB. The school offered English A, English B, Spanish A, and self-taught Language A courses, though the latter had yet to be successfully accomplished by any of the three students who had attempted a self-taught course at the time of publication of Lew's study. Students were able to take their heritage language as their Language A course and complete either English A or English B and receive the Bilingual Diploma.

Lew (2020) also pointed out, in addition to the IB full diploma and IB Bilingual Diploma, the IB certificate in recognition of course candidacy allowed for more access, as students could pick and choose which courses interested or applied to them. This allowed students to balance IB with their lives outside of school or to pursue a variety of goals. Interviewees noted that the certificate option attracted more students, gave them more time to adjust, and helped better accommodate them as students. Through the participation, and promotion, of language minority students in IB courses, King High School leveraged their diversity and strengths in a way that improved the programme overall and also contributed to overcoming deficit-oriented views towards these linguistic-minority students' abilities. This permitted the school to build educational equity to ensure all multilingual students' ability to both access and succeed in the IBDP, Lew concluded.

Chae and Gray-Rice (2019) also noted the potential of IB courses to close opportunity and achievement gaps while completing their research with a public high school located in the Mid-Atlantic region of the US. While the school's population was 78% African American and 14% White, within the DP, White students were overrepresented compared to students of color, so the counseling department planned a shift to "IB for All". As such, the researchers wanted to increase participation in the programme. School staff worked specifically on increasing promotion and advising of students to join the IB programme. While working with the school, a concrete action plan was created. First, the counselors were assigned a cohort or grade level, and

looped with them throughout their high school career. This allowed them to build relationships and work with students to accomplish their goals within the IBDP. In addition to IB training, the school and research teams also focused on creating specific social-emotional learning (SEL) and academic advisory lessons, leading parent workshops, and frequent conferencing.

The advisory program began in ninth grade, bridging MYP to DP, and easing the transition to high school with skills such as stress management, organization, goal setting, and reflection. In 10th grade, students executed their MYP Personal Project. With the transition to DP, students continued to receive support for their classes in addition to preparing for college, through researching schools, writing applications, and looking for scholarships. This was further supplemented by workshops and parent nights to equip parents with strategies and skills to support their children's social and emotional wellbeing, to assist them in navigating academic rigor, and to discuss future plans after high school.

Chae and Gray Rice (2019) determined that through these planned efforts, student participation and success in the IB was expanded. In 2011, there were 159 total candidates and only seven of whom received the full Diploma. In 2018, after the advisory program and workshops, the new cohort of 208 candidates were awarded 52 full Diplomas, supporting the positive potential of "IB for All". Chae and Gray-Rice also cited the school leadership's shared vision as a large contributor to the success in increasing registration and awards from IB, as well as the shift to have all students take

at least one DP course. The fact that students' awards increased as the programme participation increased was regarded as a testament to the school's dedication to the philosophy of "IB for All."

A frequent argument against detracking is that it could have adverse effects on higher achievers. This common justification for keeping advanced classes as a separate track motivated Burris et al.'s 2008 study. The researchers partnered with a suburban district in Long Island, New York. In 1993, the school set a goal that 75% of students would receive a New York State Regents diploma, which similarly to IB requires rigorous exams. Through this initiative, low-track courses were eliminated and access to honors courses was opened. At first, the school found White majority, middle-class, regular-ed students made progress after the lower-track was eliminated, but students of color or poverty and those with disabilities were left behind.

Burris et al. (2008) then described the school's systemic changes including building accelerated math into middle school courses and offering math support workshops after school, as well as integrating special education in math, English, and social studies. As a result of the detracking, more students joined the IB programme. Burris et al. noted that the total number of IB exams taken increased more than tenfold between 1990 and 2005, from 75 exams to 993 exams. They also found that in the last five years of data (2001-2005), the percentage of students earning a 4 or higher on IB exams exceeded the percentage in early years (1990-1994). In fact, as the IBDP became

more inclusive, the highest scores of 6-7 increased in both number and proportion, suggesting that high achievers' performance was not adversely affected.

Through Burris et al.'s (2008) analysis of the data using multiple models to increase in complexity about interactions of a variety of variables and the programmatic variable of detracking, it was shown detracking led to a decrease in the rate of student dropouts, as well as an increase of about 70% in the likelihood of attaining an IB diploma. When cross-examined with students' aptitude scores, students in detracked IB programmes had greater odds of success than those in tracked programs. For example, "detracked students at the 25th percentile of aptitude would share the same IB odds ratio as their tracked counterparts at the 35th percentile of aptitude" (p. 14). In fact, the detracked cohort showed greater likelihood of receiving the IB diploma at virtually every level of aptitude, the research team concluded.

Burris et al. (2008) did point out that the generalizability of the study may be a potential limitation, but particularly focused on both other student supports (such as after school help periods and highly qualified teachers) as well as a school culture that held the same values and commitment to detracking at many levels, focusing on supporting all students.

Atteberry and Lacour joined Burris, Welner, and Murphy in a 2019 study that continued this focus on factors or perceptions that limit enrollment in IB or AP programs. Atteberry et al. (2019) continued work in Long Island, at a school with a

population of 3,500 students. As the school district's progress in detracking continued since the previous study, the most recent of the groups (Cohort 2011) had detracked experiences all the way through grades 6-12.

Atteberry et al. (2019) used PSAT data (taken before students entered the IBDP) to categorize students as starting initially low-, middle-, or high-performing, and compared their performance on IB exams before, during, and after detracking. The school in the study progressively detracked IB courses by grade, allowing for data collection and analysis at these three stages. Researchers learned that as lower grades (9-10) were detracked, enrollment in IB courses increased significantly, from 20-30% to 70-80%. The research team also discovered that detracking actually resulted in higher average performance on IB math exams for any group, rather than fears that it would be lower for students in the highest-achieving group. Across the English courses, there were some indicators of lower mean performance; however, Atteberry et al. noted this was not statistically significant and explained that many similar studies regarding the decrease in learning for high-achievers often fail to control for factors in high-level, tracked classes such as differentiation, more-skilled teachers, or a better classroom environment. All in all, the research team concluded that by detracking, higher achievers continued to succeed and lower achievers averaged the same or higher IB scores, even as the number of lower achievers in the programme increased significantly, further supporting Burris' (2008) conclusions in the earlier study. Atteberry et al. (2019)

highlighted the importance of support for struggling learners and high expectations for all students as well as support for teachers through training and leadership.

Teacher Mindset and Success for All

Tabron et al. (2021) also considered the effects of detracking through a more qualitative analysis of teacher empathy interviews using a sociopolitical lens at a diverse urban school, rather than focusing solely on participation numbers and scores. Researchers noted that the school was 41% Latinx, 28% White, 22% Black, 2% Asian, and 7% of students were of multiple races. The study's participants were made up of five math teachers, the principal, assistant principal, and IB Coordinator, who were interviewed about school culture and diversity, equity, and detracking the IB math courses at their school. Tabron et al. went on listening tours, analyzed school documents and related literature, conducted student surveys, facilitated peer-to-peer observations, observed classrooms themselves, and led semi-structured interviews. The most helpful information and conclusion was drawn from the interviews in which researchers identified common themes in participants' responses, including the school's cultural and linguistic diversity, the importance of detracking early, and the power of "equity-oriented growth mindsets" (p. 5). In short, teachers' ideas of what detracking was and its benefits had a large impact on their views of its applicability and efficacy in their classrooms. Within this school, the goal was for students to enroll in at least two IB courses by junior year.

Tabron et al.'s (2021) study also determined some tensions regarding detracking; some of the teachers interviewed expressed doubts or concerns that all students could or *should* be enrolled in IB courses and meet the rigor of the classes. Interviewees discussed open-mindedness and helping students to be risk-takers who persevere through challenges, calling on elements of IB's philosophy. Teacher and student mindsets were often considered. For example, one teacher noted that "the name IB scares a lot of kids … [and] teachers" (p. 6), but a shift in mindset on their capabilities could help ease this, in addition to preparing students earlier in high school to meet high expectations. This shift away from deficit thinking, focusing on what students *cannot* do, rather than their potential to achieve and learn, will help students and teachers to more successfully expand their expectations for all learners. Tabron et al. noted that to help teachers and stakeholders develop this mindset, professional development ought to support teachers as they "critically interrogate their assumptions and beliefs about students and their abilities to be successful" (pp. 7-8) in advanced courses, while also reminding teachers that detracking requires teachers to be willing to grow and meet the diverse needs of all students.

Mayer's earlier study (2008) also emphasized the importance of teachers' beliefs in students' capability to meet high expectations paired with support structures. Mayer spent one day a week in the 2003-2004 school year visiting a Title 1 school and used semi-structured interviews with teachers, leadership, and parents, coding and analyzing those responses to identify key features. The school's IB Diploma Programme started in

1993. At the time of the study, the school's population was 60% Latino, 13% Asian, 12% African American, 10% White, and 5% Native American, making it more diverse than other schools offering the IBDP.

Through the interviews, Mayer (2008) learned that in the early years of implementation, both teachers and students lacked confidence and were unsure that their students *could* succeed in IB. In 1999, new coordinators came to the programme and brought about several systemic changes. One coordinator pointed to the new open enrollment policy as one of the main reasons for the growth of the IBDP. Unlike other schools, such as those mentioned in Perna et al.'s 2011 study, there are no entrance requirements, like exams, GPA minimums, or interviews.

Like Lew (2020), Mayer (2008) also noted that schools might need to shift their thinking away from all students pursuing the full Diploma. They may also need to shift their goals from all students achieving sixes and sevens in all their courses, to widening their perspective that *who* can achieve success in the IBDP and their journey to do so is perhaps more important than the scores themselves, which may be threes and fours. Mayer noted that educators and schools who lacked open-mindedness became a barrier to widened access to the programme. One IBO representative interviewed noted that some teachers might be too focused on student scores or the validation they feel from those scores. The representative also mentioned that counselors need to be open to allowing more students into the program, opening up further avenues for teacher and staff training.

Within the school studied, Mayer (2008) identified a variety of supports for IB students. These scaffolds include counseling, academic enrichment, and social scaffolds. The school prioritized IB professional development training for their counselor to aid in tracking progress, identifying struggling students, and more effectively counseling students about life after high school. Academic enrichment came from the use of IB-caliber curriculum before DP in grades 9-10, as well as tutoring and summer school. Uniquely, this school also included social scaffolds for students, noting the benefits that come for IB students from positive, academically oriented peer groups. These social scaffolds included a weekly IB club with activities for students; an orientation week for freshmen to develop study skills, applying their learning and teamwork strategies; and a full IB diploma candidate retreat each fall to work on Extended Essay and receive support, motivation, and encouragement from peers and teachers. Both the coordinators and Mayer credit these scaffolds and the open enrollment policy as the source of the growth of the DP, noting that while this process may face challenges, these scaffolds can help all students meet the challenge of academic rigor.

Kyburg et al. (2007) similarly focused on the balance of belief in students' ability to succeed and scaffolding to support and challenge students through an analysis of learning environments in AP and IB programs. Researchers completed classroom observations and interviews with administrators, counselors, teachers, and students in three urban high schools in mid-Atlantic states. Two of the schools offered only AP and the third offered both AP and IB. One principal summed up the research findings

succinctly: “The most important thing is the systematic belief that minority kids can achieve” (p. 197), and most leaders agreed, using professional development that focuses on teacher expectations and hiring practices that look for teachers who want to leverage gifted education theory to increase achievement for all students. Other supports included building a network of AP/IB teachers, creating discussion groups for counselors to support minority students, and allocation of resources, both time and money, to ensure programme effectiveness. Likewise, teachers needed to implement supplemental scaffolding for students and recognize different students may require different types of support.

Kyburg et al. (2007) identified some frustrations, or inhibitors, to programme success, including having multiple major assignments due at the same time, views that the AP/IB program is too uniform or inflexible to meet diverse students’ needs, and that some teachers’ comments may reveal or allude to low expectations. The researchers concluded that supporting all learners requires a shared vision, communication, and a unified plan.

All in all, most researchers agreed that “IB for All” initiatives can increase student participation, but it is equally important to consider other factors such as teacher mindset and support systems for an expanded group of students.

Section 4: Identifying and Supporting All Students' Needs

As noted in Section 2, students and teachers often associate participation in the IB with heightened stress and other factors relating to both academic and social-emotional health. Especially as programmes expand to include a more diverse range of students, it is of paramount importance to consider the ways to support students beyond just academics.

Student Success, Coping Strategies, and Support Needs

As research of the IB has increased over the course of the last two decades, one growing group of researchers has similarly increased analysis of the psychological wellbeing of programme candidates. In 2006, Shaunessy et al. explored students' academics, emotional distress, and psychological wellbeing through a study of 122 IB students and 179 general education students. The school in this study houses both IB and general education programs within one building, and 23 of 25 teachers work within both programs. In this particular study, 65% of the IB population participated while only 20% of general education students participated in the surveys used.

Shaunessy's (2006) research team looked at academic performance and social-emotional wellbeing for three groups: students in the IB programme, gifted IB students, and general education students. To do so, they used two survey instruments, Haynes et al.'s School Climate Scale and Muris' Self-Efficacy Questionnaire for children, and school records to First, when it came to academics, both IB groups achieved better grades and

indicated feeling more confident in their academic work. They were also more likely to have better attendance and fewer discipline referrals than general education students.

Shaunessy et al. (2006) found all three groups of students were comparable in their reports of overall happiness in their lives. Researchers did note that IB participation (both for those who were identified as gifted and those who were not) had moderate to strong effects on both scholastic work and mental health, with academic achievement and peer interpersonal relationships showing larger effect sizes than the moderate effects related to self-efficacy, school climate, views of teacher/student relations, and problem behaviors. Shaunessy et al. noted that the similarity between the gifted and non-gifted IB groups highlights the suitability of IB for high-achieving students who may not be recognized as intellectually gifted. Though the study mentioned a 3.0 GPA requirement for this school's IBDP and alluded to a school-within-a-school structure, researchers did not mention the suitability of the IBDP for all students within this publication. Instead, their work focused on current participants.

Perhaps surprisingly, Shaunessy et al. (2006) found IB participants did not show higher levels of internalizing problems, such as anxiety and depression, at higher rates than general education students. In fact, IB students showed fewer "externalizing symptoms (e.g., delinquent or aggressive behavior) than their gen. ed. classmates" (p. 85).

In conjunction with Shaunessy's team, a later study by Suldo et al. (2018b) continued the focus on connections between academic performance and social-emotional wellbeing, this time on a larger scale. The team's goal was to identify factors associated with success for students in AP or IB classes in 20 school programs throughout their state, looking at mental health and academic performance. Suldo et al.'s sample included 2,379 high school students from 19 different schools, spanning diverse geographic locations, genders, SES, and ethnicities (2018b). Suldo et al. used pen and paper surveys, transcripts of interviews, and students' exam results to identify predictors of success.

Suldo et al. (2018b) found that between 15-30% of students in the sample showed low emotional wellbeing through low levels of life satisfaction or mental health issues. Almost 25% had a GPA under 3.0, and less than 50% earned a passing score on their exams for AP/IB. This showed that while students in AP and IB are often considered high-achievers, they are not without social-emotional or academic challenges, and schools should consider their students' wellbeing holistically.

At the school in Suldo et al.'s (2018b) study, the average AP pass rate was 49.1%, while 74.7% of IB seniors (n=300) earned the full Diploma. It may be possible that many schools require students to complete the full Diploma rather than allow students to be course candidates, which would perhaps skew the data here. This is also in addition to the fact that only IB seniors take exams, but students can take AP tests at various points in their high school career, depending on their school's program and testing schedules.

Suldo et al. (2018b) noted that students in the AP/IB showed more signs of stress more frequently, which predicted greater burnout towards school and unhealthy coping behaviors. Overall, they identified promotive factors that positively affected student mental health, as well as risk factors that impact achievement and social-emotional wellness but noted that there is currently unmet need for support with this population.

Following this study, Suldo et al. (2018a) turned to consider what these supports for AP/IB students could be. Building on the data collected in the previous study, this article described and evaluated possible tools for identifying at risk-AP/IB students. The proposed tools included screening, students self-reporting via surveys or interviews, and teacher nominations. Specifically, Suldo et al. recommended explicit teaching of strategies to respond to academic stress, such as time management, positive self-talk, mindfulness, and asking for support, either through workshops, lessons, or summer 'boot camps'.

Suldo et al. (2018a) noted that students in AP and IB may need support even if they are not showing obvious signs of risk. Students surveyed expressed that the DP was not truly a measure of intellect but rather the ability to apply new learning, as well as that many students may need to come to terms with the fact that they may not "get" the material as quickly as they have in previous years or classes. Suldo et al.'s recommendations for schools and further research shaped the team's future work as well.

In the Parker et al. (2019) study, the group continued to analyze predictors of student success, focusing on help-seeking behaviors in ninth grade students in AP/IB classes. Similar to Shaunesy's (2011) earlier discussion of perfectionism, Parker et al. considered types of help-seeking, defining adaptive (or instrumental) help-seeking as more positive when students advocate for help in order to master the content independently in the future. In contrast, expedient help-seeking consists of asking for correct answers and avoidant help-seeking is when a student refuses to ask for help even when needed. The aim of the study was to consider the correlation between help-seeking and academic success, perfectionism, attitudes, and teacher support.

Parker et al.'s (2019) sample included 311 ninth graders from two public high schools, with 172 in AP classes, 139 in pre-IB classes, and the rest of the sample consisting of non-AP/IB students. Using Likert-type scales to measure help-seeking behaviors, attitudes towards help-seeking and perfectionism, as well as the Academic Self-Perception scale and a four-item measure to assess perceptions of emotional support from teachers, the team collected data in spring 2017 by conducting surveys in a 45-minute class and utilized statistical analysis to look at multivariate associations and create regression models.

Parker et al. (2019) found students with higher levels of adaptive perfectionism were more likely to show adaptive help-seeking. They were also more likely to have adaptive help-seeking when they perceived help-seeking as beneficial and their teachers as emotionally supportive. The team concluded that AP/IB students might be more likely

to be adaptive help-seekers than their non-AP/IB peers. Students who perceived threats or disadvantages related to help-seeking, or maladaptive perfectionism, showed an inverse relation to the likelihood of positive help-seeking behavior. Males were more likely to show low levels of adaptive help seeking.

Parker et al. (2019) recommended increasing positive help-seeking behaviors in AP/IB students through instruction on the definition of adaptive help-seeking in addition to modeling and reinforcement or corrective feedback. They also provided suggestions to assist teachers in displaying emotional support. Examples included "respecting students' opinions, trying to understand how students feel, acknowledging students' feelings, providing support when students are sad or upset, being available to provide help, and treating students fairly" (p. 665). Parker et al. advocated that support from programme coordinators and administration in teacher professional development in these areas would have an impact on students' help-seeking behaviors.

In addition to help-seeking, there are a variety of other coping strategies that students use in IB programmes, as Suldo et al. (2008) found when questioning why some students adapt to stress while others do not do so successfully. The aim of the study was to identify IB students' coping strategies and differentiate these strategies with different levels of student anxiety. The sample consisted of 48 IB students, 23 of whom were identified as having above average anxiety and the others had some/low anxiety. Sixty-eight percent of low-anxiety students and 87% of above-average anxiety students were White, though this does not fully take into account the lack of diversity in

the sample itself. In the above-average anxiety subsample, 83% of students were female. While this could correlate to Grose and Sanchez's findings that female IB participants report more feelings of anxiety (2021), it was unclear if females were overrepresented in the sample or programme participation within Suldo et al.'s research.

Suldo et al. (2008) completed 45 to 75 minute interviews in small groups and coded students' responses to see emergent responses and analyze frequency. Reported coping strategies fell into seven categories: taking deliberate steps to address problems, avoiding demands, seeking support, positive emotions, maintaining relationships, sleeping, and reducing workload. Students with lower levels of anxiety were more likely to mention avoiding demands, engaging in positive emotions, and reducing workload compared to their peers. On the other hand, students with high levels of anxiety more often discussed seeking social support and being alone. These higher-anxiety students were also nine times more likely to rely on maintaining relationships, especially with classmates not in IB.

Suldo et al. (2008) also had students discuss which coping strategies were ineffective. In general, all students discussed how avoiding demands (such as doing unrelated things, procrastinating, or fixating on problems without taking action) was ineffective. High anxiety students mentioned the inefficacy of venting more often than lower anxiety peers. When it came to positive or helpful coping strategies, students discussed managing stress through problem solving and taking steps to make progress.

Suldo et al. (2008) suggested that through advising IB students, schools can model and help students through support of positive coping mechanisms, such as taking deliberate steps, using adaptive procrastination (or taking time to have fun) while considering time management and social support, or practicing problem-solving skills.

Many researchers highlighted that students may have limited awareness of the skills and behaviors that lead to success or good coping strategies in these programmes. As such, many authors of relevant literature discussed application in regards to teachers and school leaders best supporting students who may need reinforcement of these strategies.

Strategies to Identify and Support Students

To this end, in 2019, Suldo worked with fellow researchers Storey, O'Brennan, Shaunessy-Dedrick, Ferron, Dedrick, and Parker to create screening methods for students in accelerated courses. Suldo et al.'s (2019) research team created and evaluated an approach to identify AP/IB students who showed risk with stress, affective engagement, and academic performance. Through a study of 304 high school freshmen in AP/IB programs in two schools, researchers collaborated with five teachers to collect data. Suldo et al. noted that these students have been underrepresented in previous studies because their high achievement may be associated with the perception of a diminished need for social-emotional support. As also shown in previous studies by Suldo's team and others (Grose & Sanchez, 2021; Matthews & Kitchen, 2007;

Vanderbrook, 2006), AP/IB students did experience stress and mental health issues, and needed support or intervention, though those services should be adapted for their work with accelerated curricula and unique stressors in addition to their unique strengths related to motivation and engagement.

Using the multi-tiered systems of support (MTSS) framework, Suldo et al. (2019) endeavored to investigate teacher accuracy in identifying students who are at risk due to mental health and academic performance. The MTSS framework consists of a variety of interventions to be implemented with differing groups of students. In this study, first, all students experienced a Tier 1 intervention with an SEL lesson series targeting engagement and coping skills for academic stress, based on earlier findings summarized in previous sections of this review. Mid-year students completed a survey based on perceived stress and student life satisfaction. Later, Tier 2 and Tier 3 interventions would be discussed in other studies by Suldo et al.

Suldo et al.'s (2019) student survey used a Likert-type scale to assess how often students perceived signs of stress, ranging from never (1) to very often (5) from Cohen, Kamark and Memelstein's 1983 Perceived Stress Scale, while also integrating Huebner's 1994 Multidimensional Student Life Satisfaction Scale. Of the students sampled (n=304), 117 students had risk in at least one of the following areas: stress, engagement, or academic performance. Very few identified with two or all three areas at risk, with 27 and 6 respectively. Through this survey, a baseline was determined that would be later used to assess teacher accuracy in identifying student stress and other risk factors.

For the study (Suldo et al., 2019), participating AP/IB teachers were required to read about risk signs of academic stress and low school-satisfaction. When provided with a roster, teachers then indicated if a student showed any signs of risk by circling "yes" or "no." Researchers analyzed the accuracy of teacher identification for any risk as well as through specific categories including stress, low school satisfaction, and low academic performance. Researchers found that teachers have lower cognizance of academic or emotional problems, given that they identified 25% of students, while 39% of students showed signs of risk on their self-report survey.

Suldo et al. (2019) noted one limitation regarding teacher accuracy: two nominating teachers had very low sensitivity (identifying 3.1%-26.7% of students) compared to three others who identified 60-77% of students. Teachers accurately identified 46 of 117 students who showed any type of emotional or academic risk. However, researchers also found that if teacher nomination was the only way students were identified, students who showed true signs of risk were missed at a rate of 64.3%. Teachers did not nominate 157 of the 187 non-risk students, showing an 84% correct identification by intentionally not nominating these students. Only 30 students were falsely identified as showing risk, or about 16.5%.

Teachers were also more likely to be more accurate in nominating students when they had lower grades, and were less accurate in identifying low school satisfaction or engagement compared to student stress, Suldo et al. (2019) found. For example, while 15 of 46 high stress students were correctly nominated, 31 were missed,

resulting in a 60.4% miss rate. Forty-nine students reported low school satisfaction, but only 14 were correctly identified, and 72.1% were missed. Comparatively, only 24 of 61 students with low academic performance (40.1%) were missed. This is further shown through the researchers' findings that teachers were more likely to accurately identify students who had lower GPAs or letter grades. Students who received Cs were more accurately identified, and increased accuracy for a 2.0 GPA versus a 3.0 GPA was statistically significant at 0.87 to 0.51, respectively.

As a result, Suldo et al. (2019) concluded that further support and research are needed, especially those that are tailored to AP/IB students. They specifically pointed to teacher training on detecting signs of problem behavior as well as future Tier 2 and Tier 3 supports.

The research team continued their work with the MTSS research in studies by O'Brennan et al. (2020) and Suldo et al. (2021). O'Brennan et al. (2020) found that while 71% of earlier samples showed symptoms of burnout, there were limited supports or interventions in place. The team turned to Motivational, Assessment, and Planning (MAP) interventions as a Tier 2 support. The MAP interventions consisted of four stages: engage, focus, evoke, and planning. In two schools with 155 IB students and 176 AP students, the Tier 1 advisory program described in Suldo et al.'s 2019 research was executed. From this group, 28 IB students and 21 AP students participated in the MAP/Tier 2 intervention. Students completed surveys and interviews with coaches from an affiliated school psychology doctoral program consisting of one faculty member, two

postdoctoral fellows, and four graduate students. In these interviews, students were prompted to create goals (engage), identify target behaviors to change (focus), engage in "change talk" or give reasons for positive change (evoke), and show commitment and confidence in their next steps (plan). There were two meetings, first to establish rapport and goals, and then later to check on progress.

Following O'Brennan et al.'s (2020) interviews, students were surveyed on their perceived success and limitations of the new Tier 2 intervention. Students indicated three common takeaways that were of interest to them: 44% enjoyed comparing their coping skills with other students (using data from Suldo et al.'s 2019 study), 28% highlighted the action plan as the most useful, and 24% reported that the personalized discussion was the most helpful and interesting. Limitations included the length of the meeting (20.4% saying it was too long), lack of specific data in student-familiar quantities, such as grades or GPA (mentioned by 8%), and the use of difficult questions (4%).

O'Brennan et al. (2020) also surveyed the coaches following the meetings, and it was found that 100% indicated they could develop a working relationship with the students. Five of the seven (71%) also appreciated the focus on strengths, values, and goals, and the same percentage reported at least one student engaged in positive change talk. Common challenges included working with students who did not elaborate (85.7%) and time constraints (71.4%). Additionally, other challenges not related to the intervention, like health concerns or family issues, presented difficulty in keeping the

MAP interview from proceeding in its desired fashion. Another challenge included that students often did not follow through on their plan, despite a handwritten letter from their coach, perhaps due to absences or other factors.

O'Brennan et al. (2020) also found that students focused more on coping with academic stressors over other types. Generally, 25-50% of students chose time or task management as their area of focus for self-improvement, while other areas included positive thinking, help-seeking, and relaxation.

These challenges and trends shaped Suldo et al.'s 2021 study with a second sample, continuing the use of motivational interviewing as a Tier 2 intervention. In this sample, 547 high school freshmen participated, coming from 15 AP/IB programs in 14 schools. Within that sample, 351 students participated in the advisory lessons about coping strategies and stress, and 332 later participated in mid-year screening. Through this screening, 135 students were identified as at risk. In addition to six peer-leaders, who had been identified as successful and well-adjusted, 121 at-risk students participated in MAP meetings. In response to previous findings, the meetings were adjusted to fit within 50 minute class periods or a study hall, and researchers also hand-delivered reminders between Meeting 1 and Meeting 2. As a result, 94% of students elected to come back for the second meeting.

Yet again, Suldo et al. (2021) found students' most popular target coping strategy was related to time and task management, both in Meeting 1 and Meeting 2.

Students with the Tier 2 intervention also targeted behaviors like not reducing effort on school work, increasing positive thinking, and increasing help-seeking from peers, teachers, and family. In the second meeting, 93 students (81.6%) reported full completion of at least one step of their plan for improvement, and only two students reported no progress.

Suldo et al. (2021) learned students identified the action-planning process as the most interesting and useful, and 18 students expressed positive feelings about the process or relationships with a coach after Meeting 1. Once again, the biggest barrier was the lack of time to complete all four steps of the MAP intervention. Suldo et al. also noted that compared to usual Tier 2 interventions, the group was proportionately too high compared to the overall school population, which may relate to feelings that MAP interventions would be challenging to execute with more than a handful of students. However, they concluded that MAP interventions and motivational interviewing do hold potential as a plausible way to provide early support for students who may be misidentified, not identified at all, and/or later develop severe challenges. This strategy, among others, holds the potential for future support of all students in IB.

CHAPTER III: DISCUSSION AND CONCLUSION

Summary of Literature

The implementation of the International Baccalaureate Diploma Programme (IBDP) in the US has increased in the last two decades. Yet, it remains important to analyze accessibility, related effects, and supports for students. Though the IBDP in the US continues to grow both in terms of schools and student participation, there continues to be a lack of diversity in a variety of ways. First, implementation of the programme is often limited by the location and size of the school, as smaller, rural schools are less likely to offer IBDP classes (Booth et al., 2017; Burns et al., 2018; Thier & Beach, 2021). Similarly, schools with high populations of students with free-and-reduced lunch and/or lower socioeconomic status (SES) are less likely to offer IB classes or have those students proportionately represented in IB classes (Booth et al., 2017; Burns et al., 2019; Davis et al., 2017; Hertberg-Davis & Callahan, 2008; Maina et al., 2020).

When it comes to ethnic diversity, research has found that White and Asian students are over-represented in IBDP participation in comparison to a school or state's ethnic makeup (Booth et al., 2017; Chae & Gray-Rice, 2019; Davis et al., 2017; Grose & Sanchez, 2021; Lamb et al., 2019; Maina et al., 2020; Perna et al., 2011). Black, Latino, and Native American students are often under-represented in AP/IB and gifted/talented programs (Booth et al., 2017; Davis et al., 2017; Grose & Sanchez, 2021; Lamb et al., 2019; Lew, 2020; Maina et al., 2020; Perna et al., 2011; Price, 2021; Thier & Beach, 2021). Often, special education students are either under-identified (Freeman-Green et

al., 2018) or left out of research entirely (Kettler & Hurst, 2017). As the lack of equitability in accessibility and participation is a prevalent portion of IB-related research, it is clear that schools offering the IBDP must analyze their own programmes and consider ways to address this, in order to bring about full benefits of the IBDP to all students.

Another large portion of research surrounding the IBDP focused on the perceived benefits of the programme, as well as its challenges. Current and former students often cite college preparedness and college credit as the main motivation for completing IBDP classes, and research showed that the programme does succeed at preparing students for postsecondary education (Coca et al., 2011; Culross & Tarver, 2007; Culross & Tarver, 2011; Grose & Sanchez, 2021; Matthews & Kitchen, 2007). Students who participate in the IBDP, regardless of earning credit, are more likely to enroll in colleges and persist in college for at least two years (Coca et al., 2011; Conley et al., 2014; Davis et al., 2017). Students see a balance of tangible and intangible effects, the former through college success in terms of GPA and course completion (Culross & Tarver, 2007; Vanderbrook, 2006) as well as skills gained or improved as a result of the programme (Conley et al., 2014; Culross & Tarver, 2011; Parker et al., 2019).

Through surveys and interviews, multiple researchers have also found that IBDP students report positive views on the challenge and learning opportunities in the programme (Conley et al., 2014; Culross & Tarver, 2007; Foust et al., 2009; Hertberg-Davis & Callahan, 2008; Matthews & Kitchen, 2007; Shaunessy et al., 2006), as well as

better teachers and learning environments (Foust et al., 2009; Matthews & Kitchen, 2007). Many students also cite feelings of sameness with other IB participants in terms of motivation, engagement, and interests (Foust et al., 2009; Vanderbrook, 2006) or inversely, feelings of difference or a divide between IB and non-IB students (Culross & Tarver, 2007; Foust et al., 2009; Matthews & Kitchen, 2007).

Despite these feelings of difference, there has been a push in recent years to detrack IB programmes and integrate more students into the programme. Some opponents point to concerns that such detracking efforts may have negative effects on current or traditional high-achieving students, however, thus far, it has been shown that detracking does not have statistically significant negative effects on high achievers and actually yields positive results for students at all levels in studies dedicated to investigating this process (Atteberry et al., 2019; Burris et al., 2008; Chae & Gray-Rice, 2019).

However, research has not solely focused on the positive effects or perceptions of the program, as students often report the need for improvement on certain aspects of the IBDP through interviews and surveys conducted by researchers. Overwhelmingly, students comment on stress as one of the largest negative effects of their participation in the IBDP, and this focus has yielded many discussions in the relevant literature (Grose & Sanchez, 2021; Matthews & Kitchen, 2007; Shaunessy et al., 2011; Suldo et al., 2018a; Suldo et al., 2018b; Suldo et al., 2019; Vanderbrook, 2006), as well as prompted further research to support students. Hand in hand with stress comes the heavy workload

related to completing the full IB Diploma, and students often reported struggling to balance the demands of the programme (Foust et al., 2009; Hertberg-Davis & Callahan, 2008; Lew, 2020; Matthews & Kitchen, 2007). Another concerning trend found through a variety of studies was students' likelihood to sacrifice sleep, especially when trying to maintain both their academic work and social lives (Foust et al., 2009; Foust et al., 2011; Hertberg-Davis & Callahan, 2008). Many researchers and students also agreed that participants need adequate support from teachers in terms of relationship-building and encouragement (Hertberg-Davis & Callahan, 2008; Kettler & Hurst, 2017; Lew, 2020; Matthews & Kitchen, 2007; Vanderbrook, 2006).

As such, researchers turned to studying how teachers, leaders, and other administrators can best support students within the IBDP. The first step to support is creating methods and systems through which students in need of support can be accurately identified (Chae & Gray-Rice, 2019; Suldo et al., 2008; Suldo et al., 2018b; Suldo et al., 2019). Proposed supports vary from social activities like summer programs, student events, and family information sessions (Chae & Gray-Rice, 2019; Mayer, 2008) to teacher- or administrator-led scaffolding through differentiation and academic support after school (Lew, 2020; Mayer, 2008; Suldo et al., 2018a). Some success has been found through skills lessons focused on help-seeking, time and task management, and effective coping strategies (Mayer, 2008; Parker et al., 2019; Suldo et al., 2008; Suldo et al., 2018b). One research team in particular has worked to create a series of steps to identify students with signs of stress and support them through counseling,

one-on-one interventions, and relationship-building (O'Brennan et al., 2020; Suldo et al., 2008; Suldo et al., 2019; Suldo et al., 2021).

Another noteworthy and unifying factor of research about support for students in the IBDP relates to teacher perception and mindset. In order to best support students, schools who are committed to "IB for All" must ensure that teachers have a growth-mindset and believe in the capabilities of all students for success within the DP (Chae & Gray-Rice, 2019; Kyburg et al., 2007; Matthews & Kitchen, 2007; Suldo et al., 2018a; Tabron et al., 2021). Generally, research agrees that to create authentically equitable and supportive learning environments for IBDP students, programme leaders must help teachers and students truly buy into the idea of "IB for All."

Limitations of the Research

Though the IB was founded in 1968, its implementation in the United States began to grow in the early 2000s, as did the push to expand access to more diverse groups of students. As an international programme, the IBDP exists in multiple countries, as does relevant research. For the sake of this review, the original search parameters were limited to studies conducted solely in the US, as the IBDP exists in both public and private schools and data is more easily comparable. Additionally, since ethnic diversity is a large part of studies related to IBDP accessibility and enrollment, it was logical to limit the studies to one country where the same ethnic and cultural groups and proportions are represented.

The research was also limited to include studies on the Diploma Programme, rather than those focused on other programmes such as the Primary Years Programme (PYP, grades K-5), Middle Years Programme (MYP, grades 6-10), or the Career Programme (CP, grades 11-12). The latter is conducted in the same years as the DP, and even includes IBDP classes in addition to more career/technical education focused components, but as the CP only started in 2016, pertinent research was limited in both number and scope, and often only tangentially related to the other studies in this review.

This review was also limited to include studies from the last fifteen years, with a few related articles from a one to two-year period prior that were cited in later studies. Though the IBDP has continued to grow, this focus on recent studies allowed for analysis of trends over time regarding enrollment, student performance, and shifts in programme organization and structures.

Interestingly, though the IBDP offers two pathways to achieve credit or recognition for coursework, most studies do not differentiate between "course candidacy" and "full diploma candidacy," meaning many schools' IB programmes may be limited to students who are taking only IBDP courses, rather than a variety of courses. By failing to describe course candidates in their work clearly, researchers may also be contributing unwittingly to the idea of who makes a "good" IB student. Similarly, data collected by researchers may not be fully representative of students depending on entrance policies to the IBDP at the district level; for example, one school that allows

course candidacy could have more students enrolled but potentially fewer (or proportionately fewer) exams than a school that only allows diploma candidates.

While much research has been done regarding the inclusion of culturally diverse groups, little to no research exists about the participation of special education students in the IBDP. As more public or charter schools within the United States adopt the IBDP, more Special Education students should become eligible to take those classes, and research will need to include them.

Implications for Future Research

As noted previously, special education students and course candidates both provide nuances for future research, as their unique circumstances and needs will necessitate new techniques and scaffolds within the programme. Additionally, as more schools consider the possibility of detracking or opening IBDP courses to all students, researchers will have the ability to expand their samples to include more diverse students. While many recent studies focus on gifted and talented students or compare IB and non-IB students within the same school, detracked schools and programmes will offer a unique vantage point for future research.

International Baccalaureate may also consider partnering with researchers in the future, as relevant data can be collected through the registration process for exams. This could be particularly helpful when considering students with special education or access arrangements as indicated when schools sign students up for exams. Though not considered in the research within this review, the cost of IB exams is also high and may

be limiting individual student participation or programme adoption at the school level. Future research could analyze this barrier to more equitable access as well.

While many studies discuss the value of a growth mindset or a shared vision, few concrete suggestions were offered on how to cultivate this within an IB school or programme for staff or students.

Implications for Professional Application

As educators know, it is of utmost importance that teachers prepare for all learners' success in the classroom in order to prepare them for success after traditional K-12 education. In order to best equip students, it is crucial that teachers have a growth mindset for their students and truly believe that all students are able to succeed, even and *especially* in challenging and rigorous courses. Through this research and other related literature, teachers can reflect on their own mindsets regarding student participation and success in the IBDP as well as the general education classroom. Teacher self-reflection allows educators to address any unconscious biases, support other teachers, and better prepare students to excel in these courses. Teachers may need to take on the challenging work of tackling and dismantling ideas of "ideal" or "good" IB students in order to teach the students they currently have and to expand the benefits of the IBDP to even more students.

Teachers of IBDP courses also have the responsibility of differentiating curriculum and considering the best support for their students' needs. There should be careful thought put into lesson design and scaffolding in order to allow multiple avenues

of learning for a variety of students. Teachers should likewise be aware of barriers traditionally impacting students' access, participation, and success in the IBDP in order to recruit more diverse students into the programme or these classes. Similarly, leaders and administrators should consider enrollment policies for the IBDP, as well as systemic supports such as advisory lessons, counseling, and social activities for students and families.

IBDP teachers and school leaders, such as principals and programme coordinators, should also regularly engage with students about their views on the programme, particularly in regard to challenges with workload, stress, and social-emotional wellness. Whether this is on a large scale with planned interventions or a smaller scale within the classroom, the focus on students' wellbeing is as important, or even more so, than the academic rigors and benefits also associated with the IBDP. Regular opportunities for students to reflect on their experiences will allow teachers and leaders to adjust and support students individually and collectively.

Lastly, through awareness of shortcomings of the programme, such as workload and perceived rigidity, as well as tensions that may exist between IB and non-IB students, school leaders and teachers can truly act to create change within individual classes and schools that will have a positive impact on IB overall. The United States is perhaps in a unique position to further the goals of "IB for All" through the inclusion of ethnically diverse students, students of varying SES backgrounds, and special education students as IB is implemented in more public schools. Teachers and administrators in IB

schools have the potential to share more stories and research as they tackle these unique challenges and work to create change in supporting the IBDP for all students. Through formal research or more informal avenues like conferences, blogs, and social media, these practices can be shared and enrich IB programmes around the world.

Conclusion

While the implementation of the International Baccalaureate Diploma Programme has grown in the last few decades in the United States, equitable access has continued to be the focus of multiple studies. Though some progress has been made in increasing the availability of the programme, White and Asian students are often overrepresented, while Black, Latino, and Native American students are underrepresented. In addition, students from diverse socio-economic status (SES) backgrounds or students receiving free-and-reduced lunch are less likely to be involved in IB classes, and limited research is available about special education students' participation. Detracking and opening "IB for All" allows for more diverse groups of students to be involved in the IBDP, but targeted interventions and scaffolds are needed to best support all students through the academic rigors and related social-emotional challenges that come with participation. Student and teacher perceptions also impact success in the programme. Through teacher relationships, interventions, programme design, and social activities like advisory lessons or family meetings, schools offering the IBDP can make efforts to support diverse students' academic and social-emotional

needs. Through a shared vision and growth mindset, the IBDP truly can be a pathway to success for all students.

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