

DISSERTATION

A STUDY OF THE OUTCOMES OF AN INTERNATIONAL BACCALAUREATE
DIPLOMA PROGRAM EDUCATION

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ABSTRACT

A STUDY OF THE OUTCOMES OF AN INTERNATIONAL BACCALAUREATE DIPLOMA PROGRAM EDUCATION

The International Baccalaureate Diploma Program is noted by universities and researchers as one of high academic rigor and standards (Culross & Tarver, 2011; Taylor & Porath, 2006); however, students enrolled in IBDPs often cite high levels of perceived stress and lack of social interaction as a result of the rigor (Shaunessy & Suldo, 2010). Anecdotally, parents and educators question the value of an IB education if it puts the mental and social well-being of the child at risk, and yet, there is research supporting the claim that participation in an IBDP prepares students with the knowledge and academic and non-academic skills required to be successful in post-secondary pursuits including university or work force readiness (Bergeron, 2015; Conley, 2008, 2010). Thus, this study addresses the problem between the benefits and risks of an IB education by examining alumni perceptions of the role of the DP in preparing them for post-secondary pursuits.

Surveying 20 alumni from the graduating classes of 2006-2014 at Poudre High School in Fort Collins, CO, provided data to examine the outcomes of participation in the IBDP and to measure the quality and effectiveness of the PHS program. The results of this study will provide information for the existing IBDP at PHS to refine, revise, and develop the program with the goal of increasing student enrollment by providing information on the outcomes of an IB education to incoming students and families.

A phenomenological approach was taken with this qualitative study because it explored the reflections and lived experiences of participants. Participants' lived experiences in the PHS IBDP and their perceptions of how those experiences impacted their post-secondary pursuits helped to explain what the experience of IBDP was like. The descriptions of alumni experiences and the ways in which those experiences informed other aspects of their life, shed light on the essence of the program itself and the outcomes of participation in that program.

Analysis of the data revealed a) participants felt well prepared for post-secondary pursuits, b) influence of the core components was significant but not direct, c) participants felt that overall the program was of value with long term benefits, and d) high levels of stress discussed in the literature were not a major concern for participants in this study.

This study was limited by the fact that it was one site in a middle class school district with a consistently high diploma pass rate. Additionally, the DP is housed within the larger comprehensive high school creating a cohort of like-minded learners.

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And finally, I must acknowledge my husband who never let me quit, never doubted my abilities, and always reminded me of my own strength. I would not have started this or finished it without your support and love.

DEDICATION

This paper is dedicated to my mom, Carol Ann Hixon, who always wanted a PhD of her own. Mom, you inspired me to start this and your unconditional belief in my abilities allowed me to complete it. Thank you for being a part of this process, encouraging me to build castles in the air, and helping me put the foundations under them.

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CHAPTER ONE: INTRODUCTION

Background to the Problem

In 2006, the United States Department of Education published a final report outlining the successes and failures of the U.S. higher education system. The report acknowledged that higher education plays an important role in today's knowledge-driven society because the university system is a pipeline for developing intellectual capital needed for national productivity and growth (U.S. Department of Education, 2006). Thus, the United States' ability to compete and sustain in the world economy is, in part, based on the national capacity for excellence, innovation, and leadership in higher education.

However, there is a notable disconnect between higher education and high school preparation, creating an "expectations gap" (Spellings, 2006, p. 1) between what colleges require for success and what skills high school graduates actually acquire. Although more high school graduates are going on to college than in past decades, fewer are completing degrees and too many students must take remedial classes simply to catch up. In fact, 70% of high school graduates enter college with fewer than half obtaining a degree; and of those 70%, at least 28% must take a remedial English or math course during their first semester (U.S. Department of Education, National Center for Education Statistics, 1997; U.S. Department of Education, National Center for Education Statistics, 2003). Seemingly, although students know what to do to obtain admittance to college, they still have not figured out how to succeed once they are there (Conley, 2005). This lack of preparation is, in turn, costing the United States billions of dollars in remediation, lost revenue, and expenses (Roderick, Nagaoka, & Coca, 2009; Spellings, 2006). The lack of preparation is highlighted in the business world wherein employers struggle to find

employees with skills that meet their expectations and needs. In a 2015 survey of Massachusetts employers from a wide range of industries, 69% reported difficulty hiring people with the right competencies to fill open positions. The lack of applied, real world skills and an inability to think critically were most often cited as areas of concern for these employers (Massachusetts Business Alliance for Education, Center for Assessment, 2015). Further studies reveal many employers no longer equate a high school diploma with attainment of basic skills in grammar, spelling, writing, and basic math. The result is a \$40 million per year financial burden for a single state's employers to offer remedial training in reading, writing, and math (Greene, 2000). Clearly, the economic stakes are high for all involved, emphasizing the importance of a well-educated, highly skilled workforce that is critical for the nation to thrive and grow.

In response, the nation has seen a rise in initiatives and programs intended to address the academic disconnect and improve student chances of postsecondary success. Specifically, over the last fifteen years, credit-based transition programs have grown in popularity as solutions to the achievement gap (Bailey & Karp, 2003). These programs provide high school students opportunities to earn college credit, either at the high school or on a college campus, while still enrolled at a traditional high school campus. Originally, the programs were intended to accelerate the progress of high-achieving, college-bound students but now are seen as another venue to facilitate college access and success for middle-and even lower-performing students (Andrews, 2001; Bailey & Karp, 2003). In a review of literature, Bailey and Karp (2003) found the most common credit-based transition programs are dual enrollment, Tech-Prep, Advanced Placement (AP), and International Baccalaureate (IB). Students in dual enrollment courses concurrently enroll and take classes in high school and college. Tech-Prep is most often used to identify courses offered at the high school through community or technical schools that shorten

certificate and applied degrees, and AP and IB offer accelerated curriculums based on college level material with the potential for college credit upon successful completion of exams. Each of these programs vary in their delivery and focus, but all offer high school students the opportunity to experience college-level work and earn some form of college or community college credit with the goal of preparing students with skills to be “college ready” (Conley, 2008, pg. 2) rather than merely “college eligible” (Conley, 2008, pg. 2) upon high school graduation.

The focus of this study is the IB, which is a comprehensive, academic program that aims to bridge the expectation gap and prepare students for postsecondary learning (International Baccalaureate Organization [IBO], 2005). The IB Diploma Program (IBDP), delivered in the last two years of high school, prepares students with cognitive and non-cognitive skills allowing them to take ownership of their learning, which, according to research on college readiness, is an important factor to student success in completing postsecondary learning options (Brunold-Conesa 2010; Conley, 2008; Van Oord, 2007). Despite the IB’s growth in recent years, there is relatively little data on the impact of IB as preparation for post-secondary pursuits and even less on alumni perspectives; nonetheless, both positive and negative outcomes of the program are illustrated in the literature (Culross & Tarver, 2011; Hertberg-Davis & Callahan, 2008; Taylor & Porath, 2006; Wright, 2015).

This study presents another facet in the discussion of IB as a postsecondary preparatory program. Specifically, it examines alumni perceptions of participation in the program including acquisition of academic and personal skills and the value of participation in the program.

Problem Statement

The IBDP is noted by universities and researchers as one of high academic rigor and standards (Culross & Tarver, 2011; Taylor & Porath, 2006); however, students enrolled in IBDPs

often cite high levels of perceived stress and lack of social interaction as a result of the rigor (Shaunessy & Suldo, 2010). Anecdotally, parents and educators question the value of an IB education if it puts the mental and social well-being of the child at risk, and yet, there is research supporting the claim that participation in an IBDP prepares students with the knowledge and academic and non-academic skills required to be successful in post-secondary pursuits including university or work force readiness (Bergeron, 2015; Conley, 2008, 2010). Thus, this study addresses the problem between the benefits and risks of an IB education by examining alumni perceptions of the role of the DP in preparing them for post-secondary pursuits.

Purpose of This Study

The purpose of this study is to examine outcomes of participation in the Poudre High School's (PHS) IBDP, located in Fort Collins, Colorado, from the perspective of alumni who graduated within the last eight years between 2008 and 2015. Surveying alumni assumes that an institution's, in this case the PHS IBDP, quality and effectiveness can be measured by monitoring and surveying what alumni have accomplished and perceived in the years following graduation (Cabrera, Weerts, & Zulick, 2005). Therefore, this study will inform the existing IBDP program at PHS allowing the faculty to further address to the outcomes of an IB education.

Significance of This Study

Leadership changes and gaps in the curriculum plagued the early 1990s for Fort Collins' Poudre School District (PSD). At the district level, two superintendents were hired and fired within five years and one specific high school, Rocky Mountain, experienced rapid turnover in leadership. Alternative learning programs, charter schools, and school of choice were just being introduced across the country but were not popular in PSD and AP programs were the only option for those seeking challenge. At this same time, though, the district mandated

modifications to advanced curriculum in an effort to ensure high test scores. In the same mandate, they requested that teachers focus instruction on the students in the middle of achievement rather than those on either end of the spectrum. As a result, teachers across the district, and especially at Rocky Mountain, became disgruntled and disillusioned with the current state of education. This, in turn, led two veteran teachers employed at Rocky Mountain to explore options outside the traditional educational offerings. By chance, one of the veteran teachers had a relative who attended an IB school and the teacher was drawn to the program because of the academic challenge, specific standards and assessment, accountability, and world perspective. After visiting the school and speaking with students, the veteran teacher decided to pursue authorization of an IB school in PSD.

The application for authorization was completed in 1993 and PHS was the only school that offered to house the program. At the time, the local community viewed PHS as a school with low test scores, low graduation rates, and underachieving students; therefore, PHS's leadership saw IB as a way to bolster the school with academic rigor and accountability. The first IB classes were taught at PHS in 1994 by 11 handpicked teachers, most of whom came from within the district. Countless community meetings and forums were held to recruit students from the district and neighboring cities up to 30 miles away. Newspaper ads, radio spots, posters, and rallies were held to advertise the program resulting in 35 students at the 9th and 30 students at the 10th grade level who chose to enroll in the IB program. For the majority of these students, PHS was not their assigned high school and so they were thrown in to a small school within a school wherein the IB community of 60 functioned independently of the PHS community. The cohort developed through similar experiences and they developed a culture unique to the students and teachers within IB.

In 1997, 16 of the original 30 10th grade students completed the Diploma Program and graduated with an IB diploma. And while initially only the DP was taught, in 2001 the Middle Years Program (MYP) at grades 9th and 10th was added. This increased the enrollment in the IB program, but the original cohort culture from 1994 remained intact and exists today. This cohort culture is what draws many families and students to the program as students and parents look for ways to make a large high school of 1,750 students feel smaller.

The success of the IBDP at PHS is another reason families are drawn to the program. Since its inception, the program has had diploma pass rates in the upper 90%, compared with the national average of 79% (IBO, 2016). On individual exams, PHS's IBDP students average scores on English and History exams are 5.5 and 5.7; well above world-wide averages of 4.75 and 4.24 (IBO, 2016). On average, students earn 24 college credits for their performance on the IB exit exams. In Northern Colorado, the PHS's IBDP is considered to be of excellent caliber and is held in high regard by PDS and the PHS faculty.

However, with the increased academic challenge associated with the program, there is an increased work load and level of stress. Across the nation, students in the IBDP face countless hours of homework and the level of stress associated with the program is perceived to be considerably higher than the average high school student experience (Shaunesey & Suldo, 2010). As a result, students and parents find themselves weighing the benefit of the program in relation to the cost of personal and family health and wellness. In spite of the stress and work load, in 2016, 81,000 students nationwide chose to complete the program (IBO, 2016).

At PHS, student enrollment in the DP has fluctuated over the years and based on PDS enrollment statistics for the past ten years, it has never been more than 1% of the PHS total school population (Colorado Department of Education, 2016). Arguments for this include the

fact that the DP is rigorous, it is not for everyone, and the stress it invokes is unhealthy for students and their families. Nonetheless, growing the program to encompass a more robust and diverse student population is an identified goal of the IBDP staff. Thus, the results of this study will provide information for the existing IBDP at PHS to refine, revise, and develop the program with the goal of increasing student enrollment by providing incoming students and families with information on the outcomes of an IB education.

Researcher's Perspective

The researcher's interest in the study stemmed from her role as IB Director at PHS. Prior to this role, she was an English, History, and Humanities teacher at the school and for the first ten years of her career, she taught the 9th grade pre-IB world history course before the MYP was officially introduced. As the lead teacher for the 9th grade team, she worked closely with the DP teachers to vertically align curriculum and ensure that the students were prepared with skills necessary for the courses at the upper levels. Upon accepting the position of Director, the researcher was asked by the staff to examine and consider the following aspects of the program: student and teacher workload, benefits and limitations to participation, existing practices and policies, and ways to recruit more diverse students to subsequently grow the program. Additionally, as Director, parent complaints and concerns were highlighted as more and more parents reported feeling that their student was overwhelmed, overworked, and mentally and physically unhealthy. As a result, the researcher undertook this study to determine the outcomes of participation in the IBDP so as to provide data to address the concerns of parents, students, and staff. After collecting anecdotal information from current students and parents and comparing it to stories from graduates returning for homecoming celebrations, the researcher noticed that alumni perspectives offered an interesting and different viewpoint on outcomes of

participation. Moreover, the researcher had access to contact information for graduates from all 20 classes at PHS allowing for a robust sampling. Thus, this study turned to examining alumni perceptions of participation in the program so as to inform the existing IBDP at PHS and provide research-based data for parents, students, and staff.

Research Questions

1. What components of the IB experience did IBDP alumni identify as significant?
2. Do alumni perceive participation in IB to have contributed to post-secondary life?
3. Do alumni feel their participation in the program was of value?

Delimitations

PHS is a public school, located in northern Colorado in a well-educated, middle class city. Many residents are employed by large employers including: Colorado State University, Anheuser Busch, Banner Health, and Woodward Governor. The school's demographics average 70% Caucasian, 23% Hispanic, 3% Asian, and 5% other races; graduates from the IBDP at PHS for the last 20 years are 87% Caucasian, 9% Asian, and 4% other races or not declared (PHS, 2016). The parameters of this study were delimited by the convenience sample selected from graduating classes at PHS from 2006-2014. The sample included students who graduated from PHS IBDP and provided the program with their contact information including email addresses. The investigation took place via electronic surveys over the course of one month and the participants voluntarily responded to the survey.

Limitations

Natural conditions that influenced the outcomes of the study included access to participants and the candor or descriptiveness of participants' responses. Participants were randomly selected from a database of alumni for the years 2006-2014. The survey questions

were crafted to encourage open responses, and only the participants know the degree to which each question was answered fully and sincerely. Factors out of the researcher's control included participants' ability to recall and describe their experiences in the program and the impact of IBDP on their subsequent career or life path.

CHAPTER TWO: LITERATURE REVIEW

The International Baccalaureate Program, originally developed in Europe post-World War II, and intended for high-achieving students seeking university entrance, today offers 5,934 programs worldwide. The purpose of this study is to examine the outcomes of participation in this program by analyzing alumni responses about how the program did or did not prepare them for life after high school. This chapter presents relevant literature that provides a broader context for understanding the role of IB in academic and social preparation as it relates to post-secondary pursuits including university enrollment.

This chapter is organized into five sections. The first section provides background on the history and programs of the IB including required, prescribed components. The second section reviews existing IB research and studies on benefits, limitations, and barriers to participation. In this section, research conducted apart from IB as well as those studies commissioned by IB are included. The third section provides research on alumni studies in terms of their value in assessing program practices and policies. The fourth section reviews existing literature and research on college readiness. The final section discusses gaps in the literature and considers ways this study can contribute to the literature.

International Baccalaureate Program

History of International Baccalaureate

By the 1960s, education trends in the United States were moving from traditional to more progressive means of instruction. Pedagogical structures like memorization, teacher centered classrooms, norm referenced grading, and national perspectives gave way to critical thinking, student centered classrooms, criterion referenced grading, and multiple, international

perspectives (Resnick & Hall, 1998). At the same time, the International Passport to Higher Education, an academic program that provided curricular stability for children of diplomats, was gaining attention because of its direct focus on internationalism and critical thinking (IBO, 2015c). In 1962, the International Passport to Higher Education was renamed the International Baccalaureate (IB). The foundational influences of men like John Dewey, Jean Piaget, and Jerome Bruner ensured that IB maintained focus on critical thinking and analysis. For these men, democracy, constructivism, and the cultural relevance of education were prominent ideas that, according to the IB, are found in the core components of the program (IBO, 2015c).

While these ideas influenced the pedagogical philosophy behind IB, Peterson's (1960) *Arts and Sciences in the Sixth Form* directly influenced the curriculum. Some of Peterson's ideas that were incorporated into the curriculum included: emphasizing a broad education while allowing for areas of specialization; critical analysis and learning to learn versus rote memorization; and highlighting and integrating humanities and sciences with traditional subjects like reading, writing, and mathematics.

Thus, amid the progressive trends in education, and with a foundational philosophy promoting such trends, leaders of the IB Program officially registered the program in Geneva, Switzerland in 1968. While IB is promoted as an acceptable, standardized, world-wide college preparatory curriculum with high academic standards and rigor, the IB Mission Statement also identifies the program as one that aims to:

Develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments, and international organizations to develop challenging programs of international education and rigorous assessment.

These programs 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, 2005)

As of 2014, the organization works with more than 4,000 schools in 144 countries to offer four academic programs to over a million students worldwide (IBO, 2015c). The programs include: Primary Years Program (PYP) for students aged 3-12; Middle Years Program (MYP) for 11 to 16 year olds; the Diploma Program (DP) for 16-19 year olds in the last two years of their secondary career; and the Career Program (CP) for 16-19 year olds who want to specialize in career-related learning. All four programs emphasize the importance of inquiry, critical thinking, and analysis in creating citizens who positively contribute to society.

The IB Diploma Program (IBDP) is the focus of this study and is offered to college bound students in the last two years of their secondary career. The IBDP is a comprehensive, student-centered curriculum for students of high motivation and ability (Culross & Tarver, 2011). Although it is not limited to “gifted” students, it is cited as the “Cadillac of College Prep” programs (Gehring, 2001) as evidenced by publications like *Newsweek* and *US News & World Report* that cite completion of the IBDP as one criterion for ranking top high schools in the nation. In a 2006 article in *Education Week*, Nassirian of American Association of Collegiate Registrars and Admissions Officers, called the Diploma Program, "The best-kept secret in high school reform," and "the gold standard of high school curriculum in admissions circles" (as cited in Gehring, 2006, p. 19).

To earn an IB Diploma, students complete coursework and exams in six subject areas including language arts, social studies, science, mathematics, world language, and the arts. Upon completion of the exit exams at the end of the second year, students are eligible for college credit depending on the score and institutions' acceptance of IB coursework



Figure 2.1. IB diploma curriculum. From “The IB Diploma Programme Model,” by IBO, (2015d), Copyright 2015 by International Baccalaureate Organization. Reprinted with permission. Retrieved from <http://www.ibo.org/globalassets/digital-toolkit/brochures/1511-dp-brochure-en.pdf>

Core Components

According to the IB Mission Statement, the organization seeks to educate the “whole person” and prepare students for success “in a global society” (IBO, 2015a). This is reinforced by the IB Learner Profile that explicitly lays out ten cognitive and non-cognitive attributes IB learners strive to achieve. These qualities prepare students to make positive contributions to their communities. The traits include: inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective. Table 2.1 defines the traits further.

Table 2.1
Learner Profile Traits

Trait	Definition
Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

Note. From “The IB Learner Profile,” by IBO, 2015c, Copyright 2010 by International Baccalaureate Organization. Reprinted with permission. Retrieved from <http://www.ibo.org/globalassets/publications/recognition/learnerprofile-en.pdf>

The core components provide students a means to apply these traits and develop skills needed for the global society in the 21st century. The three core components are theory of knowledge (TOK), extended essay (EE), and creativity, activity and service (CAS). According to IBO (year):

[TOK] develops a coherent approach to learning that unifies the academic disciplines. In this course on critical thinking, students inquire into the nature of knowing and deepen their understanding of knowledge as a human construction.

The EE provides an opportunity for students to do independent research by engaging in in-depth study of a question relating to one of the DP subjects. IBO (2015a) stated:

CAS emphasizes helping students to develop their own identities, in accordance with the ethical principles embodied in the IB mission statement and the IB learner profile. CAS complements a challenging academic programme in a holistic way, providing opportunities for self-determination, collaboration, accomplishment and enjoyment. It involves students in a range of activities alongside their academic studies throughout the DP.

To earn the IB diploma the student must complete these components which encompass the critical thinking, writing, research, and service skills emphasized by the program.

Studies of the core components are typically embedded in larger studies of the curriculum and many studies are commissioned by the IBO for purposes of program evaluation.

Nonetheless, two studies, in particular, are often cited in literature as relevant to the discussion of the core components and their role within the whole program. The first, independently conducted by Wright and Lee (2014), is a multi-site case study of five elite IBDP schools in China. The researchers used semi-structured interviews for 27 IBDP teachers and administrators

and 17 IBDP students from five IBDP schools located in Beijing and Shanghai, to explore the following research questions:

1. How successful is the IBDP in facilitating the development of 21st-century skills?
2. Which features of the IBDP are particularly conducive to 21st-century skills development?
3. What challenges do IBDP practitioners face in the promotion of 21st-century skills in the context of elite IBDP schools in China? (Wright & Lee, 2014)

After coding the interviews for themes and cross-referencing codes among three researchers, Wright and Lee (2014) reported that “IBDP-specific pedagogy was deemed conducive to the development of 21st-century skills, such as those set out in the IB Learner Profile” (p. 207) and that the core requirements played a key role in developing such skills. Specifically, interviewees reported that participation in CAS activities that encouraged service and action in the community were relevant to intrapersonal non-cognitive skills (Wright & Lee, 2014). The EE was also viewed positively as valuable for the development of cognitive and non-cognitive skills. Wright and Lee found that cognitive skills, such as creativity, might be developed through the writing process of choosing a topic, researching, and organizing ideas onto paper, and, the independent nature of the EE requires time management and self-motivation, which are interpersonal, non-cognitive skills. Finally, Wright and Lee reported that teachers and administrators felt the debates and metacognitive skills promoted in TOK helped develop cognitive “higher-order thinking skills” like critical thinking and self-reflection (p. 210).

Wright and Lee’s (2014) study found that while the core requirements had great potential for impacting university transitions, they also ran the risk of being under prioritized by IBDP students because of the minimal impact on the IB score. TOK and the EE, for example, can

provide up to three points out of a total of 45; whereas, the other six subject areas are out of seven, and CAS is a binary pass/fail. Wright and Lee surmised that cultural issues may impact the importance of the requirements and is one of the challenges facing universal implementation of IB programs worldwide. In China, for example, where high test scores are of the highest priority, core requirements may be overlooked in favor of subjects that hold greater weight in the final score (Wright & Lee, 2014).

Conley, McGaughy, Davis-Molin, Farkas, & Fukuda (2014) in a study commissioned by the IBO through the Education Policy Improvement Center, similarly found that the components had an impact on students in IBDP. This study focused on the impact of IBDP on college readiness and compared data from two groups of high-achieving students who matriculated to an honors program at the University of Oregon. One group of students completed the DP in high school, and the other did not. Like Wright and Lee (2014), these students were enrolled in a high-achieving high school with a high IB diploma pass rate. Quantitative and qualitative data was collected using observation protocols, discussion questions, and web-based survey instruments. To explore the role of components specifically, the researchers used a T-chart activity to identify aspects of the program that were “easy,” “challenging,” “most valuable,” and “least valuable” (Conley, et al., 2014). On this T-chart, CAS received mixed responses in terms of its value and challenge level showing that students thought CAS was good in theory but difficult to integrate into the full program. Conley et al. (2014) reported 25% of students were frustrated by the arduous process to meet CAS requirements. Because they felt they were naturally doing these activities, the added documentation felt redundant and made CAS feel disconnected from the curriculum. Similarly, Wright and Lee (2014) found that some students

saw CAS as a box-ticking exercise and students and teachers voiced concern about how to truly measure authentic engagement in CAS.

With regard to the EE, Conley, et al. (2014) reported all 10 IB/Honors students who placed the EE on their chart rated it as a “valuable” component of the IBDP. Much like Wright and Lee’s (2014) findings, students stated that the process of finding relevant sources, determining the credibility of sources, organizing information, producing a coherent extended paper, and citing sources were useful skills for university coursework (Conley et al., 2014). Students in both studies also indicated that as a result of writing the EE, they felt more prepared for research and writing as compared to their peers who did not have the same experience (Wright & Lee, 2014; Conley et al., 2014).

The third component, TOK, appeared in all four quadrants of the T-Chart in Conley, et al’s (2014) study, indicating mixed experiences with this aspect of the program. Analysis revealed that the “value” and “challenge” level of TOK is largely dependent on the teacher; meaning, the more effective the teacher, the more challenging and engaging the course, while students with less effective teachers considered the course to be a poor use of time (Conley et al, 2014). However, Conley et al. found that the largest cluster of TOK on the T-chart was in the “Most Valuable/Easy” quadrant because students saw the course as building critical thinking skills through quality discussions. Likewise, Wright and Lee (2014) reported teachers and administrators found TOK valuable because of the cognitive skills like problem solving developed through the discussion-based philosophy of the course.

Both Wright and Lee (2014) and Conley, et al. (2014) conclude that the components, in conjunction with the IB curriculum as a whole, play a role in preparing students for post-secondary pursuits and developing 21st century skills. Wright and Lee report that in their study,

the “Core Requirements had the strongest potential to promote 21st-century skills” (p. 208) including cognitive skills, intrapersonal non-cognitive skills, and promotion of tolerance. Similarly, Conley, et al. (2014) conclude that the core components, which are central to the program as a whole, allow DP students to develop skills that in turn make them more prepared for college than those who do not complete an IBDP. Those skills include the ability to cope with the heavy workload, rigor and expectations of college, as well as skills like writing, researching, critical thinking, and time management.

Existing Research and Studies on International Baccalaureate Education

Benefits

Although IB programs are rapidly increasing worldwide, there is still relatively little research on the overall benefits and weaknesses (limitations) of all four programs, including the DP. However, the existing evidence demonstrates there are long and short term, cognitive and non-cognitive benefits to participation in the IBDP (Panich, 2001; Poelzer & Feldhausen, 1996; Taylor & Porath, 2006). According to Wright (2015), for example, “IB has the potential to powerfully shape the lives of students who participate in its programs” (p. 1).

Several studies, including Culross and Tarver (2011) and Taylor and Porath (2005), supported the claim that the benefits of participation in the IBDP are numerous. Culross and Tarver (2011) conducted a series of four research studies examining perceptions of participation in an IB program from the student, teacher, alumni, and university perspective. The study began with a micro study in one high performing high school in the United States and expanded to explore the IBDP within a much larger context. Using standard interview protocols and open ended survey instruments, Culross & Tarver gleaned information from participants in each phase of the four part research study. The first series, student perceptions of participation in the

program, was conducted using open ended survey questions that were audio recorded, transcribed, and scored by multiple scorers to ensure consistency and illicit categories of general trends in response to questions about short-term and long-term effects of the program. Results of the first study indicated that, as a result of participation in the program, IBDP students “perceived they had a greater breadth and depth of knowledge, improved creative and critical thinking skills, and improved oral and written communication skills” (Culross & Tarver, 2011, p. 234). In the second and third series of studies, teacher and graduate perceptions were sought and, much like student perceptions, revealed generally positive views of the IBDP. Teachers, graduates, and students all agreed that participation in the program increases ones’ skills in critical thinking, written and oral communication as well as promoting open-mindedness (Culross & Tarver, 2011).

Taylor and Porath (2005) echoed these general findings of participation in the program in their study that reported the majority of respondents felt better prepared for introductory-level postsecondary and advanced courses than those not in IB. Rather than looking at current students, teachers, and administrator, Taylor and Porath focused on DP graduates in one of two public DP schools in British Columbia, Canada in 1996 and 2000. Of the 76 graduates in 1996 and 79 in 2000, researchers located current contact information for only 26 of all graduates. These graduates were contacted by mail or email and were invited to respond to the survey via either method. In total, seven graduates from 1996 and nine from 2000 responded. Taylor and Porath divided the survey into two parts: Part one asked participants to respond to a series of twenty statements using a 4-point Likert scale; Part two consisted of seven open-ended questions about DP graduates’ experiences in the program and their sense of preparation as they transitioned to the university. The years 1996 and 2000 were selected to allow for students who

had just completed, or were near completion, of their undergraduate degree and those who were in postgraduate studies or a career. Thus, both groups were positioned to reflect on experiences in the IB and determine whether or not they were prepared for postsecondary pursuits (Taylor & Porath, 2005).

Notably, all sixteen participants said that the program gave them a strong work ethic, critical thinking, organizational, time management, and communication skills, a broader perspective of the world, and a desire for life-long learning that allowed them to succeed at the university (Taylor & Porath, 2005). This study also addressed the personal sense of confidence that participants reported in terms of their ability to complete college-level work and to approach professors and peers in a productive manner. The results of these two studies (Culross & Tarver, 2011; Taylor & Porath, 2005) suggested the cognitive and non-cognitive preparation of the IBDP allows student to successfully access and complete post-secondary pursuits. Adding to this research are several studies showing that the IBDP not only prepares students for postsecondary education but also encourages students to enroll, persist, and graduate on time at notably higher rates nationwide than those students who do not participate in the IBDP (Coca et al., 2012; Bergeron, 2015; Shah, Dean, & Chen, 2010).

Further, literature reveals that for many students the challenge of IB courses is a primary reason they continue in the program once they begin (Culross & Tarver, 2011; Hertberg-Davis & Callahan, 2008). Hertberg-Davis and Callahan's (2008) qualitative study of approximately 525 participants investigated how gifted students perceive and evaluate the curriculum, instruction, and learning environments in Advanced Placement (AP) and IB courses. These programs were selected because, although not developed for gifted education, they are seen as programs that meet the needs of academically gifted students. Using observation and/or interviews, Hertberg-

Davis and Callahan researched 200 teachers, 300 students, 25 administrators, and eight program coordinators provided input specific to instructional approaches, teacher-student interactions, instructional resources, and degree of challenge/rigor within the classroom. Students currently in AP/IB, those who withdrew from the programs, and those who were eligible but never participated were all included to provide multiple viewpoints. Responses indicated that most students saw the challenge of AP/IB courses as appropriate for their learning and was a way to escape the “boredom” and “busy work” of general education courses (Hertberg-Davis & Callahan, 2008). Participants noted that they joined the programs to challenge themselves and often stayed because they felt they were receiving the best education offered by their high school. However, the study also noted that the challenge of the courses was seen as both a benefit and weakness because of the work load associated with the challenging curriculum (Hertberg-Davis and Callahan, 2008). This aspect will be discussed further in the limitations.

Taylor and Porath’s (2005) alumni study revealed similar trends regarding challenge in terms of initial motivation for joining the program and how that challenge translated to the coursework. In response to a survey question asking why students chose to participate in the IB program, Taylor and Porath reported three reasons: a more challenging secondary program, preparation for university, and encouragement by parents. When asked specifically about the challenge and rigor of the courses, 87.5% indicated they preferred the more challenging and intellectually stimulating IB classes to regular-track classes because they felt they had more opportunities to explore their own interests and develop individual learning strategies, and 62.5% indicated they would have been bored in high school if they had not had the challenge of the IB classes (Taylor & Porath, 2005).

Both Hertberg-Davis and Callahan (2008) and Taylor and Porath (2005) concluded that overall, a majority of study participants felt that the IBDP provided them with an intellectually stimulating curriculum, which in turn, encouraged them to persevere through work load and content challenges.

Another benefit of participation in the program as reported in the literature is the cohort culture of being with like-minded individuals experiencing similar events and emotions, paired with a learning environment that fosters a desire for knowledge. Both Hertberg-Davis and Callahan (2008) and Shaunessy, Suldo, Hardesty and Shaffer (2006) examined the nature of the IB culture and climate and its impact on students enrolled in the program. Hertberg-Davis and Callahan's study of 525 students, teachers, administrators, and coordinators found that the quality of teachers, student-to-student relationships, and student-to-teacher relationships played a significant role in supporting and encouraging students to complete the IB diploma. In general, students reported that the knowledge and skill level of AP/IB teachers made them the most qualified teachers in the school and they felt supported throughout the program (Hertberg-Davis and Callahan, 2008). Responses also indicated that the overall environment was supportive and encouraging, and the classes were more fulfilling perhaps as a result of the experiences and the people within the program (Hertberg-Davis & Callahan, 2008). Additionally, participants cited being among learners with similar abilities and motivational levels as a benefit to taking AP/IB courses because it encouraged them to work harder. A focus group of IB students in the study noted that the student-to-teacher relationships were strong and supportive; students felt as if they were treated as adults. Within this learning environment, Hertberg-Davis and Callahan concluded that students reported a sense of belonging and support that was seen as a beneficial outcome of participation in the IB program.

Shaunnessy et al.'s (2006) study examined the psychological and social well-being of IB students and similarly concluded that the inherent culture and climate of IB is perceived as a beneficial outcome of participation. The study compared the academic and psychological functioning of 122 gifted and high-achieving students enrolled in an IB program ($n=122$; gifted $n=33$; high achieving $n=89$) to that of 176 general education students educated in the same school. Students were identified as gifted or high achieving based on a minimum Grade Point Average of 3.0 out of 4.0 and whether or not they met the state criteria for intellectually gifted (Shaunnessy, et al., 2006). The use of two instruments allowed data on academic functioning to be obtained: (a) school climate scale (SCS; Haynes, Emmons, & Ben-Avie, 2001), and (b) self-efficacy questionnaire for children (SEQ-C; Muris, 2001). To test the overall effect of group membership (IB-gifted, IB-high-achieving, general education) on school climate, academic functioning, life satisfaction, and psychopathology, four between-subjects multivariate analysis of variances (MANOVA) were used. Shaunnessy et al. defined school climate as including perceptions of order and discipline, equal sharing of resources, student interpersonal relations, and teacher-student relations. Univariate tests for those four aspects of school climate reached statistical significance ($p < .05$), indicating a difference among groups of learners within the same school (Shaunnessy et al., 2006). The effect of group membership, IB Gifted, IB High Achieving, or general education on equal sharing of resources was moderate (Cohen's $d=.27$). But large effect sizes ($d=.39-.42$) yielded for the remaining three aspects of school climate (perceptions of order and discipline, student interpersonal relations, and teacher-student relations) (Shaunnessy et al., 2006). Much like the conclusions of Hertberg-Davis and Callahan (2008) as previously discussed, IB students in Shaunnessy et al.'s study reported more positive perceptions of student-teacher relations and student interpersonal relations than those in general

education. Based on these findings Shaunnessy et al. concluded that students in the IB program, whether gifted or high-achieving, had positive perceptions of crucial aspects of the school climate. Together, findings from Hertberg-Davis & Callahan and Shaunnessy et al. conclude that the IB program, by the nature of the students it attracts and the curriculum it delivers, creates a positive culture and climate for learning.

Additionally, university acceptance and financial savings are benefits of participation in IBDP that cannot be overlooked. One review of the IBDP curriculum concluded that IB standards were highly aligned with the knowledge and skills needed for academic success in entry-level college courses (Conley, 2008). Consistent with this observation, many colleges and universities are now recognizing the academic rigor required to earn an IB Diploma and award college credits to IB Diploma holders, thus, suggesting acceptance that the IBDP effectively prepares secondary school students for higher education. Certainly, as more IB graduates enter postsecondary institutions, universities are witnessing how an IB education impacts student learning and achievement (Bergeron, 2015; Brunold-Conesa, 2010; IBO, 2014; Van Oord, 2007; Wright & Lee, 2015). As a result, IBDP graduates receive tangible benefits like a high rate of acceptance in universities and transferable college credit.

In a study that merged existing data from two sources, the National Student Clearinghouse (NSC) student tracker system and the IB student data system (IBIS), Bergeron (2015) found that 92% of diploma students who graduated from U.S. high schools in 2008 enrolled in U.S. postsecondary institutions between May, 2008 and May, 2014. Seventy-eight percent enrolled immediately upon graduation (Bergeron, 2015). By comparison, in 2008 the national rate of immediate enrollment was 69% (Bureau of Labor Statistics, U.S. Department of Labor, 2009). Notable for universities is that of those IBDP graduates who enrolled immediately

after graduation, 84% graduated within four years and 87% graduated within six years (Bergeron, 2015). This study supports the claim that IBDP students enroll, persist, and achieve in post-secondary institutions at a higher level and rate than those who do not complete the IBDP.

Adding another dimension to this research, Hertberg-Davis and Callahan (2008) examined student perceptions of university acceptance and found that students saw the value of IB and believed that by taking and remaining in IB courses, their chances of admission to competitive colleges was vastly improved and provided the “necessary steps in their paths toward successful futures” (p. 208). In fact, students and parents often viewed IBDP as a ticket into prestigious colleges and universities because of the recognition as excellent preparation for post-secondary pursuits (Hertberg-Davis & Callahan, 2008). In Hertberg-Davis & Callahan’s study, participants reported a primary reason for taking and staying in AP/IB courses was university admittance at an institution that would offer them the best education and opportunities.

Once admitted to the university, a potential financial benefit of an IB education exists in the opportunity to complete a bachelor’s degree in shorter time, thus, saving money on tuition. Legislation in several states, including Colorado, for example, ensures students a minimum number of college credits upon completion of the IB diploma (College Credit for IB Diploma and Act of 2003, 2003). For some students, this can translate to a semester or years’ worth of college credit, and subsequently, a year’s worth of tuition savings. However, much of the evidence supporting tuition savings is anecdotal and a strong research base to verify the percent of IB students who actually complete college in less than four years and save substantial money on tuition does not exist. Clearly, this is an area for further study as the potential implications could benefit many families and students.

Although the financial benefits are not clear, the literature reveals that other benefits of participation in the IBDP do exist. Overall, students' perceptions of IB programs are favorable and the challenge level, skills taught and learning environments within are superior to other non IB courses making it beneficial preparation for postsecondary and future pursuits.

Limitations

Although the IBDP is credited with being the “Cadillac of academic programs,” as previously noted, there are weaknesses within the program; however, literature on these is less obvious. Nonetheless, several studies directly address point of access and the intense workloads and levels of student stress as potential barriers and limitations to successful completion of the IBDP.

Point of access. First, it should be noted that in most cases, student access to IB programs at the primary and middle years level is virtually unlimited; in fact, the IBO does not have formal admission guidelines for any students at any level (Mayer, 2008). However, the DP is a program of choice open to those who voluntarily opt to participate in rigorous, college level work. This has led to one of the frequently cited limitations of IBDP programs: The participant demographics and unequal access for all students. Bailey and Karp's (2003) review of 21 articles related to credit-based transition programs acknowledged that the IBDP tends to attract and enroll high-achieving, college bound students from families who are aware of the program and know the potential benefits of college readiness and subsequent college admission. These students also tend to come from higher income families with well-educated parents (Chen, Wu, & Tasoff, 2010). An unintended result is that IB programs have not needed to emphasize support services that might be necessary for less well-prepared students or those from families and backgrounds that have not provided students with the scaffolds and resources to navigate the

college experience (Bailey & Karp, 2003). This trend has led to the perceived notion that IB is elitist and unavailable to and unattainable for those of lower SES or minority status (Perna et al., 2015). While the IBO actively promotes open access in schools throughout the United States, several studies demonstrated there are numerous factors at work making point of access a continuous limitation for IB programs.

Perna et al.'s (2015) longitudinal analysis of IB data and characteristics from International Baccalaureate Information System (IBIS), and the Common Core of Data (CCD), and a survey of IB coordinators in Florida, for example, found one of the biggest barriers to access was simply availability of the DP program in locations traditionally serving underrepresented populations. Sisken, Weinstein, and Sperling's (2010) qualitative study of the implementation of IB in Title I high schools with IB programs further found that even when the program is available to underrepresented populations, individuals, such as guidance counselors, play a crucial role in not only recruiting students but also determining which students can or should participate. These two studies (Perna et al., 2015; Sisken et al., 2010) suggest that program availability nationwide is limited.

Seemingly, point of access could be remedied merely by implementing more programs throughout the nation; however, the program requires a commitment of finances and resources that may not be available in all schools or districts. Before a school can be approved as an IB school, considerable time, effort, and finances must be invested by the school and the district. Once the school completes the application and the \$4,000.00 application fee is paid by the school, representatives from IB visit the school, make recommendations for implementation and ultimately determine whether or not the school is prepared to implement the program with fidelity. Following approval by the IBO, schools must be prepared to pay additional program

fees associated with each program from Primary Years, Middle Years, to Diploma Program (IBO, 2014).

At the DP level specifically, the financial commitment is substantial with an annual program fee, examination fees, and examination expenses totaling approximately \$15,000.00-\$20,000.00 (IBO, 2015). Because of this, the literature suggests that policymakers recognize that the limited financial resources of many school districts minimize opportunities for students to acquire advanced coursework in high school (Perna et al., 2015). Without advanced coursework in high school, students in those districts are at a disadvantage for gaining entrance to better colleges and universities or reaching higher levels of academic achievement and success within high school (Culross & Tarver, 2011). In essence, the financial burden of the program limits access for students in districts that cannot or do not support IB, thus, creating a secondary limitation for students who may not be prepared or eligible for post-secondary pursuits.

In 2006, the IBO acknowledged the unequal distribution of programs and candidates worldwide saying:

Despite our best intentions, our growth is not distributed evenly . . . indeed; there is good evidence to show that our growth is mainly benefitting the economically advantaged. Even in high-income countries, we know that the majority of students come from better socio-economic backgrounds. (p. 3)

Five years later, Walker, former director general of IB, admitted that, “solving the problem of access to a wider, less privileged socioeconomic group of students remains one of the IB’s greatest challenges” (as cited in IBO, 2011, p. 15). Thus, the distribution gap based on financial status continues to be a limiting factor to student access and a point of discussion for the IBO.

This gap is especially notable for minority students and students of low SES. Using descriptive analyses of national and Florida data to describe characteristics, growth, and availability of IBDP programs and participants from 1995 to 2008, Perna et al. (2015) revealed

that although progress in terms of numbers of minority and low SES candidates enrolled in IB programs has been made, there is still room for growth. Specifically, the study found between 1995-2008, the percentage of African-American students enrolled in IBDP programs nationwide hovered at 28-32%. Hispanic enrollment, on the other hand, increased from 8% to 15% and students qualifying for free or reduced price lunch rate jumped from 12% to 25% (Perna et al., 2015). These findings may reflect changes in national demographics as representation of Hispanic students attending schools has increased nationwide. Perna et al. also looked at characteristics of schools offering the program and revealed that from 1995 to 2009, there was a substantial increase in the number of rural schools offering the program (from 5% to 17% over this period); whereas, urban and suburban schools offering the program decreased from 50% to 45% and 45% to 38%, respectively. On the other hand, between 1999-2003, the percentage of IBDPs offered at Title I eligible schools—schools who receive federal funding due to the high percentage of students from low-income families—increased from 3% to 16%; a statistic that increases dramatically by 2009 wherein 40% of IB schools were eligible for Title I funding (Perna, et al., 2015). These findings led researchers to conclude that while strides have been made toward greater access for schools and students of lower socio-economic and minority status, more work is required to reach those students who historically have had less access to the rigorous academic coursework that is required to enter and succeed in college (Perna et al., 2015). The findings also suggest that, although the IBDP has increased representation in rural schools and schools that serve greater proportions of Hispanic and economically disadvantaged students, the actual characteristics of students participating in the program do not reflect the same demographics. Therefore, access to IB programs continues to be a barrier for students of minority and low SES status and a topic for further discussion and research.

Rigidity of curriculum. Another limitation of IB cited in the literature focuses on the rigidity of the curriculum and the curriculum content itself. Hertberg-Davis and Callahan (2008) found in their qualitative study at 23 U.S. high schools reflecting the perceptions and evaluations of approximately 200 teachers, 300 students, 25 administrators, and eight IB program coordinators who participated in IB and AP programs, that a lack of choice in the curriculum and an inflexible pedagogy were key reasons students left the program before completion (Hertberg-Davis & Callahan, 2008).

IBDP emphasizes studies in six disciplines: language arts, world languages, history, math, science, and the arts. To obtain the full diploma students must test in all content areas and complete three core components including community service, an extensive research essay, and a course in metacognition. Students who want to pursue a specific pathway, like mathematics or history, or those who do not excel in a specific discipline, see the prescriptive course work as cumbersome and limiting to pursuing their passions (Duarte, 2012; Hertberg-Davis & Callahan, 2008).

Additionally, in interviews with focus groups of students, teachers, and administrators representing diverse regions, poverty levels, and cultural groups, Hertberg-Davis and Callahan (2008) explored how students enrolled in AP and IB classrooms perceive and evaluate their learning experiences in these environments. Using grounded theory and inductive approach, Hertberg-Davis and Callahan found students who entered the DP without prior experience in an IB or honors curriculum saw the program as unachievable due to their lack of background knowledge including familiarity with IB vocabulary, acronyms, and learning and teaching pedagogy; thus, suggesting that in order to succeed in the IBDP, one must have access to honors or advanced curriculum creating another barrier for students who do not have such access.

The curriculum content is also targeted in literature as a limitation of the IBDP. Interestingly, several studies offer conflicting viewpoints stating the content is both too pro-western for students in Asia and Africa and paradoxically, too anti-western for those in North America (Drake, 2004; O’Conner, 2011). In the aftermath of September 11, for example, some criticized the international stance of the IB mission and principles as unpatriotic (O’Conner, 2011). Bunnell (2009) described a culture war in the United States over the IB curriculum wherein several instances of content choice have led to conflict in communities across North America.

Program implementation. Because there are no formal acceptance criteria put forth by the IBO, inconsistent implementation and acceptance practices create issues for IB programs. Utilizing databases from the Common Core of Data (CCD) and International Baccalaureate Information System (IBIS) and descriptive analysis of survey results from 52 IBDP coordinators in Florida, Perna et al. (2015) found that participation in an available IBDP depends on a variety of program features that vary from school to school, state to state including the number and percentage of applications accepted, the criteria used to admit students including minimum grade point averages and/or standardized test scores, prior advanced/honors coursework, letters of recommendation or writing samples, and parental signatures or agreement. Gollub et al. (2002) supported this noting there is limited, systematic information about IB programs as they are actually implemented in U.S. high schools. In their panel analysis of three IB and two AP mathematics courses, in particular, the researchers cited little evidence exists about instructional strategies used in individual classrooms, the structure of the syllabi in different schools, the quantity and quality of the facilities available, the preparation of teachers who teach the courses, and the ways in which students are prepared prior to advanced study (Gollub et al., 2002).

At the secondary level, this translates to inconsistent preparation for post-secondary coursework. At the university level, Bland and WoodworthS (2011) found that the varying admissions processes often led to different levels of student preparation, thus, requiring a multitude of resources and techniques to support student success in college. The possible conclusion reached by Perna et al. (2015) and Gollub et al. (2002) is that what constitutes an IBDP and the extent to which IBDP may truly promote academic readiness for college varies across high schools creating unequal standards of practice and implementation.

Stress. Much of the literature by and about IB focuses on levels of stress for participants. For students in rigorous academic programs, like the IBDP, the amount of stress perceived during adolescence may seem greater when compared to that of students enrolled in general education programs (Suldo, Shaunessy, & Hardesty, 2008). Suldo, Shaunessy, Thalji, Michalowski, and Shaffer's (2009) comparative study of 162 IB students and 157 students in general education in a rural, southeastern U.S. high school, revealed numerous and unique findings about sources of stress. Using factor analysis, the study defined seven categories of stressors: four of the categories related specifically to academic schooling like time management, homework load, meeting expectations; three categories focused on interpersonal stressors like relationships, home life, and financial concerns (Suldo et al., 2009). Findings verified IB students' primary source of stress was related to academic requirements; whereas, students in general education reported higher levels of stress associated with a wide variety of influences like family, peers, life transitions, and academic struggles (Suldo et al., 2009). Suldo et al. (2009) indicated that IB students inversely associated stress with academic functioning, but no sources of stress were significantly tied to worse academic achievement for those in general education.

The same study by Suldo et al. (2009) also revealed, in comparisons of correlations between categories of stressors and students' adjustment by curriculum group, that life-satisfaction and reduced stress co-occurred in both groups, but, IB students may experience more symptoms of psychopathology and reduced academic functioning suggesting they may demonstrate more negative effects of stress than other students. Interestingly, this finding contradicts previous findings by Suldo et al. (2008) regarding the relationship among stress, mental health and students in the IB program. Suldo et al. (2008) first found that despite perceived higher levels of stress, academic performance exceeds that of peers and IB students' average social-emotional functioning (i.e., life satisfaction and psychopathology) and is similar to that of their peers in general education (Shaunessy et al., 2006). Because the second study conducted by Suldo et al. (2009) had different conclusions, Suldo et al. (2009) surmise the demographics of this study's setting (resources available, affluent community) may contribute to this finding although no true conclusion is proposed.

Suldo et al. (2009) conclude that when considering stress as a limitation of the IB program, educators in schools with college preparatory programs like IB should be aware of the fact that IB students may experience elevated stress tied to academic demands, and although contradictory findings exist, practitioners should be aware of the negative impact of the stress that may come from a variety of unnamed sources.

A qualitative study by Foust, Hertberg-Davis, and Callahan (2009), provides added support for the previous study. In this study, the researchers used interviews and focus groups to obtain information about the following research questions:

- (a) Do AP and IB students perceive social and/or emotional advantages and disadvantages to AP/IB enrollment?
- (b) What are the differences between students' perceptions of social and/or emotional implications of enrollment in these courses?
- (c)

Do AP and IB students report experiencing a "forced-choice dilemma" whereby they must choose between academic success and social acceptance? (Foust, et al., 2009, p. 1)

Foust et al.'s (2009) study was part of a larger study of 24 high schools in seven states. Four high schools out of those 24 were selected for this multi-case in depth analysis. Stratified purposeful sampling (Strauss & Corbin, 1998) elicited stratifications of community size, student demographics, and advanced programs offered (AP and/or IB). Eighty-five students, representing former and current students in the AP/IB programs, were interviewed for this study. Foust et al.'s results suggested that students who participated in AP/ IB programs experienced both positive and negative social/emotional consequences. In alignment with previous studies mentioned in this chapter, the benefits of participation in AP/IB were (a) a better class atmosphere, (b) a special bond among participants, and (c) pride and self-confidence derived from completing the more challenging work offered in these courses.

On the other hand, and in alignment with Suldo et al.'s (2008) study previously mentioned, the disadvantages of participation were (a) stress and fatigue, (b) the socially limiting workload, and (c) the perception of unflattering stereotypes assigned to AP and IB students. With regard to advanced levels of stress, Foust et al. (2009) found that while both AP and IB students attributed negative emotional consequences to participation in the program, IB students reported emotional volatility, anxiety, and fatigue more frequently and with more intensity than AP students. Foust et al. (2009) also found a high degree of illness and fatigue as a result of this stress.

Foust et al. (2009) explain one possible source of stress experienced by those in advanced programs using Gross' (1989) concept of the "forced-choice dilemma" (as cited in Foust et al., 2009, p. 2). This dilemma is the idea that accelerated students face a unique conflict between their drive to pursue relationships and achievement. These students find themselves trying to

cultivate meaningful relationships with peers and family while simultaneously maintaining high academic standards. Pursuing both requires extensive time and effort, while pursuing one takes time away from the other. Thus, the forced choice dilemma becomes the choice between either academic excellence or relationships, effectively creating a situation where the student must choose between time allocation, fulfilling individual academic expectations, and being socially accepted (Foust et al., 2009). However, Foust et al. (2009) found that while students reported experiencing frequent stress and pressure to excel, the pressure to succeed and the resulting stress, was largely self-imposed, according to student comments. Further, the participants in Foust et al.'s study did not report experiencing the forced choice dilemma between academic achievement and social acceptance as theorized. Instead, by enrolling in AP/IB, students inherently prioritized academic achievement and reported they did not feel pressure to choose between having a social life and achieving academically, instead believing they could successfully balance both (Foust et al., 2009).

Thus, both Suldo et al. (2008) and Foust et al. (2009) concur that students in IB programs report feeling high levels of stress, but identifying specific causes and outcomes of the stress is difficult and complex leading to inconclusive and even contradictory evidence in the literature.

Alumni Studies

The practice of alumni surveys is not new to the United States and dates back to the 1930s when researchers sought to gather information from individuals about their experiences through the Great Depression and into World War II (Ewell, 2005). For years, alumni perspectives were haphazardly gathered mainly in relation to specific historical events. Then in the 1980s, colleges and universities began to realize the benefits of seeking alumni perspectives as institutions became increasingly dependent on tuition revenue creating a need for marketing of

programs and schools. In fact, as public interest in data, test scores to inform college selection increased, many post-secondary institutions were forced to find ways to quantify and justify their educational programs and output (Ewell, 2005). As a result, these institutions turned to alumni voices for justification because, as Cabrera, Weerts, and Zulick (2005) noted, institutional quality and effectiveness can in part be measured by the accomplishments of alumni in the years following graduation. However, in secondary public education, the use of alumni surveys is less prevalent and much of the existing research is limited in scope; the IBDP is no exception.

IBO (2016) stated, “Research plays a central role in the development, quality assurance, and assessment of impact of IB programs and services,” and a review by Hanover Research (2010) found that much of the literature about IB relates to one of four categories: ties to postsecondary success, perceptions of IB programs, case studies, and critiques of the program. Much of the research on IBDP outcomes falls under the first category, ties to postsecondary success, and focuses on the impacts of IB participation in the years immediately following graduation.

Several studies, however, address broader dimensions of the impact of the IBDP including mixed method studies by Culross and Tarver (2011) and Taylor and Porath (2006). Culross and Tarver’s 10 year, longitudinal study of the IBDP, for example, explored student, teacher, and alumni perceptions of the program. The series of studies first examined current student perceptions about the impact of the program on their lives. Then it looked at how the implementation of the IBDP influenced the school climate, culture, and performance. Finally, Culross and Tarver turned to alumni to answer the research question: “How do the IB DP graduates perceive the program upon or near completion of their college careers?” (p. 236). For this study, IBDP graduates from 2003-2006 were contacted; the majority of those individuals

were either nearing the end of the post-secondary experience or were enrolled in graduate school. Fifty-six students were contacted, and twenty-eight students responded to the survey that collected both demographic information and perceptions about the IBDP curriculum and objectives (Culross & Tarver, 2011). The survey included Likert scale statements as well as a section for comments related to students' perceptions of participation in the program. Findings revealed students believed participation in the IBDP was beneficial in helping them gain admission into selective post-secondary institutions, and they felt academically prepared for high level college work (Culross & Tarver, 2011).

Taylor and Porath's (2006) small study of two cohorts of IB graduates, from 1996 and 2000, also indicated that DP graduates experience lasting benefits. The qualitative survey of 16 IBDP graduates asked participants to reflect on and evaluate their experiences in the IB Program. The survey consisted of two parts: In part 1, participants responded to a series of 20 statements using a Likert scale; part 2 consisted of seven open-ended questions. All responses were coded, categorized, and analyzed for common themes. In the end, researchers found that, like Culross and Tarver's findings, participants believed IB gave them "a strong work ethic; critical thinking, organizational, time management, and communication skills; a broader perspective of the world; and life-long friendships" (Taylor & Porath, 2006, p. 154).

These studies provide a broad and general understanding of the impact of the IBDP on graduates, but they do not explore the impact beyond the academic preparation for university setting. As such, there is limited research on the longer-term impact of the IB and wider, subjective attributes in relation to the influence of IB participation over the course of participants' lives. Wright's (2015) in-depth qualitative study addressed this dearth in the research. Using a life history approach, the researcher conducted topic-focused semi-structured

interviews with 23 individuals aged 20-63 who participated in IB programs from the 1960s to 2010. Of those 23, six completed both the DP and MYP; 14 completed only the DP; two took IB classes but not complete the diploma; and one was a member of the initial DP exam trials in 1968 (Wright, 2015). Using life history, biographical, and life course approaches, prompts were developed to focus on subjects' recollections of IB and schooling, and reflections on the influence of IB within a broader context of participants' lives. Consideration of individual life stories as well as commonalities and differences among responses were included in the final analysis of data (Wright, 2015).

The researcher's findings supported those of previous studies including Culross and Tarver (2011) and Taylor and Porath (2006), in that subjects felt a lasting impact on their lives as a result of their participation in the IB program. Not only did participants feel there were academic and career impacts, several noted more subjective and lasting impacts on their dispositions and social values including broader perspectives on the world, critical thinking, and positive feelings toward lifelong learning (Wright, 2015). Several participants noted that while participation in IBDP did influence their choice of career or university, the greater influence was on how they approached their work, their thought processes and their orientations to the world (Wright, 2015).

It should be noted that this research was conducted for the IBO through an independent researcher; however, the methodology and findings contribute to and support the existing research on the impact of IB from alumni perspectives. Further, this study illuminates the need for further research with early graduates, especially those who completed the IB between 1970s to early 2000s, to provide an important complement to this and previous studies using alumni perspectives.

Research on College Readiness

Defining College Ready

Although the desire to describe the idea of college readiness is increasing in popularity, a singular, commonly accepted definition does not exist. One broad definition simplifies the idea of college ready to possessing the minimum qualifications needed for a college to even consider a student's application (Porter & Polikoff, 2011). Greene and Forster (2003) defined students who are college ready as possessing "basic literacy skills" (p. 16)—scoring at or above basic level on the National Assessment of Educational Progress (NAEP) twelfth-grade reading assessment—, graduating from high school, and taking and passing the minimum coursework requirements of four-year colleges with at least some admissions criteria. The ACT College Readiness Benchmarks include further specificity stating readiness is "a 75 percent chance that a student will earn a grade of C or better and approximately a 50 percent chance that a student will earn a grade of B or better" in the college freshman year (as cited in ACT, 2006). In multiple analyses studies of entry-level college courses, Conley (2007) determined that college readiness goes beyond academics and includes a range of cognitive strategies, study skills, time management, persistence, and ownership of learning.

Clearly, the definition of college ready is somewhat elusive, but Conley (2007), director of the Center for Educational Policy Research, operationally defines college ready as "the level of preparation a student needs in order to enroll and succeed—without remediation—in a credit bearing general education course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program" (p. 5).

Because "college ready" is a term not easily agreed upon, this portion of the chapter examines characteristics of college readiness and reviews several studies specific to skills and

outcomes associated with being prepared for college. Also, much of the literature reviewed for this section is based on the work of Conley (year) as the work is prominent in research, literature, and reviews about college readiness. Finally, it should be noted that Conley's studies (years) have been done both independently and commissioned by the IBO.

Indicators of Readiness

Traditionally, higher education utilizes several indicators to determine whether or not a student is ready to enter college. College freshman grade point average (GPA) has been the primary indicator of college readiness for several reasons, including: freshman year success is foundational for success throughout college, it is easy to measure and report, and it only requires one year of longitudinal tracking (Geiser & Studley, 2001; Porter & Polikoff, 2011). However, this may not be the best indicator because numerous factors contribute to an overall GPA including the level of difficulty in the course, individual student effort, and issues of transition. Additionally, the lack of a universal, standard grading system makes it difficult to consistently assess students or report on student achievement and growth.

A second indicator of readiness is simply the students' capacity to avoid enrollment in remedial coursework. Remediation as defined by the National Conference of State Legislatures (2012) are "classes taken on a college campus that are below college level. Students pay tuition and can use financial aid for remedial courses, but they do not receive college credit". A student who must take remedial classes during his/her freshman year clearly is not ready for college coursework and is deemed unprepared. Additionally, students who require remediation have graduation rates between 30% and 57% compared to a graduation rate of 69% for those who do not require remediation, thus, providing further support for the premise that a student in need of remediation is not ready to attend college (National Center for Education Statistics, 2004).

Finally, long term indicators like the rate of degree completion and college cumulative GPA may be better methods of defining college readiness, but completing college requires more than simply being ready to start (Porter & Polikoff, 2011). Thus, because all three traditional indicators have considerable limitations, they are minimally used in discussions of college readiness.

Predictors of Readiness

On the other hand, predictors are frequently referenced by educators in discussions of college readiness. These predictors, including standardized test scores, high school GPA, high school rigor, and content mastery are well researched and substantiated (Fleming & Garcia; 1998; Stanley & Porter, 1967; Zwick, 2004;).

Interestingly, current research on the correlation between student composite scores on scholastic aptitude tests like SAT and ACT and college success is varied. While educators in higher education once believed that high scores on the SAT or ACT meant high grades in college, researchers are questioning the validity of that relationship. A recent study by Hiss and Franks (2014) of 122,916 students and 33 higher education institutions, examined the importance of optional testing for high school students interested in enrolling and succeeding at the university. The study sought to answer the basic question of whether or not standardized testing was valuable in predicting success in college (Hiss and Franks, 2014). The 33 institutions represented in the study supplied a total of 122,916 student and alumni records across a maximum of eight years so as to accommodate recent graduates and current students. Cohen's d and chi square analyses were used to analyze the data.

Hiss and Franks (2014) found that for approximately 30% of the students who were admitted without submitting standardized test scores, there were no significant differences in

cumulative high school GPA or graduation rates between those who did and did not submit scores. In fact, non-submitters earned cumulative GPAs that were only .05 lower than those who did submit (Hiss & Franks, 2014). Interestingly, this study concluded that high school GPA did correspond to college performance; however, standardized testing was less predictable as it was not considered reliable across populations (Hiss & Franks, 2014).

A validity study conducted by the College Board Research & Development (2013) examined 2005 SAT exam revisions and revealed similar findings. Using a sample of individual level data on 196,364 students from 110 colleges and universities across the United States, researchers found that changes to the SAT did not substantially change or inform the predictability of first-year college performance. College Board Research & Development (2013) further concluded that a combination of high school GPA, SAT scores, and first year GPA was the best way to predict college success (Kobrin, Patterson, Mattern, Barbuti, 2008). Thus, although scholastic aptitude scores were once held in high regard as predictors of college success, they are becoming a less desirable measure of predictability.

As seen in the above studies, high school GPA or class rank, however, is still considered one reasonable predictor of college success. GPA is a measure of student academic ability and a high GPA suggests the student has the skills and knowledge needed to meet the academic and developmental demands of college. However, because each school assigns grades and rank differently, this is not necessarily a reliable predictor of readiness (Porter & Polikoff, 2011).

Academic rigor in the high school classroom is another powerful predictor of college success, yet it is one of the more difficult aspects to measure (College Board Research & Development, 2013; Roderick, 2009). In one study, students enrolled in classes with what they felt were high expectation were more than twice as likely to feel well prepared for college and to

obtain mostly A's in college classes (Conley, 2007). The importance of high expectations and rigor is echoed by college professors who note that high school does not adequately prepare students to deal with the rigor and fast pace required of college-level classes (American Diploma Project, 2004). To measure academic rigor, colleges traditionally have used enrollment in AP courses with the assumption being that AP courses offer advanced curriculum at an advanced pace and level of difficulty. Research verifies students who take college preparatory courses in high school are more likely to perform well in college than students who do not take such classes (Conley, 2005; Porter & Polikoff, 2011). Nonetheless, recently the legitimacy of AP courses has been questioned as schools across the nation compete with each other for superior ratings and outcomes by offering watered-down AP courses in an attempt to raise school performance scores (Conley, 2007; Wiley, Wyatt, & Camara, 2010).

Finally, the degree to which students have mastered the content experts deem necessary may predict college readiness. Content mastery is measured through state common assessments or university entrance level exams. Unfortunately, these assessments have limitations because there is not a universal metric for college entrance making it difficult to determine one's level of mastery. Thus, while research has identified a variety of indicators and predictors for college readiness and success, each has limitations adding to the complexity of defining college readiness.

Why College Readiness Matters

Even if a clear definition of college readiness does not exist, the benefits to the nation and the individual of being college ready are numerous, and thus the topic deserves attention.

Nationwide, College Board Research & Development (2013) estimated that by 2018, the United States will need 22 million new college degrees earned and at least 4.7 million new workers with

postsecondary certificates. This means that jobs requiring some level of postsecondary education will grow to 63% in the next decade (College Board Research & Development, 2013). Furthermore, those who receive a four-year college degree earn \$50,000 per year on average, which is 62% more than the \$31,500 earned by a full time, year-round worker with only a high school diploma (Wiley et al., 2010). Aside from the individual economic benefit, a college degree is associated with better citizenship, political involvement, volunteerism, job satisfaction, lawful behavior, and even life satisfaction (Bowen & Bok, 1998; Goldberg & Smith, 2008).

On the other hand, those who enter college after high school graduation but are not academically ready cost the nation billions of dollars. In fact, in 2007-08, the cost to the nation of college remediation was \$3.6 billion (citation). Research shows that if students who do not complete college due to lack of readiness could in fact enter prepared and graduate at the same rate as their peers, the U.S. could realize as much as \$2 billion in additional earnings for lifetime wages (College Board Research & Development, 2013). The arguments for the benefits of being college ready upon high school graduation are strong both for the nation and the individual.

What Makes a Student College Ready?

According to the work of Conley (2007), college readiness is a complex, multi-faceted concept that cannot be diluted to one or two predictors. Instead, the dialogue around what makes one college ready must include a variety of components addressing cognitive and non-cognitive skills like analysis, intellectual openness, problem solving and reasoning as well as perseverance and self-awareness (Conley, 2007). It must also consider skills not always intuitive like navigating institutional cultures and identifying reliable sources. Based on a two-year study involving input from over 200 educators nationwide, Conley (2007) identified 11 key standards for university success (KSUS) including inquisitiveness, openness to possible failure and critical

feedback, and using technology as a tool (see Appendix A). Adding to this research, Conley (2008) derived a comprehensive model of critical components needed for college readiness. This model includes four components: key cognitive strategies, academic knowledge and skills, academic behaviors, and contextual skills and awareness. These components are illustrated as multifaceted and interactive concentric circles that work with each other to create a complete picture of the skills, strategies, and behaviors necessary for success in college.

Key cognitive strategies are the “intentional and practiced behaviors that become a habitual way of working toward more thoughtful and intellectual action” (Costa & Kallick, 2000). In essence, they are the foundational elements that underlie various ways of knowing. In Conley’s model, the key cognitive strategies are identified as problem solving, research, reasoning and argumentation, interpretation, and precision and accuracy (Conley, 2008).

Academic knowledge and skills are the content knowledge and ways to achieve or access that knowledge that are necessary for college success. The content knowledge base represents concepts in the core disciplines of English, math, science, social studies, world languages, and the arts as identified by educators throughout the nation, and the skills emphasized are those specifically associated with writing and researching because the ability to write, organize, and support one’s views is critical to college success regardless of the content area (Conley, 2007, 2008). Thus, strong writing and research skills are highly emphasized as indicators of college readiness.

Academic behaviors, the third facet in the model, include non-cognitive behaviors like self-awareness, self-monitoring and self-control as well as metacognition. These behaviors also include study skills like time management, note taking, and task prioritization that are foundational to success in college (citation).

Finally, contextual skills and awareness describe the set of skills needed to understand how college operates as a system and culture (citation). Certainly, the college process beginning with the admission process through the completion of the degree can be overwhelming and difficult to navigate. Students who enter with a strong understanding of college culture and who have self-advocacy skills are less likely to be hampered by the system and more likely to succeed, persevere, and complete their degree (Conley, 2005; Robbins et al., 2004; Venezia, Kirst, and Antonio, 2004).

Summary and Implications

This chapter reviewed literature on four topics: background on the history and programs of the International Baccalaureate (IB) including required, prescribed components; existing IB research and studies on benefits, limitations, and barriers to participation; research on alumni studies in terms of their value in assessing program practices and policies; and, existing literature and research on college readiness. The IBO has produced an abundance of information on and about the programs and they have commissioned numerous studies in an effort to inform the public about the benefits and outcomes of participation; however, it appears that gaps in the research exist primarily in two areas: the limitations or weaknesses of the program, and long-term lasting impact of the program beyond enrollment in post-secondary institutions. One of the criticisms of IBOs research, as reported by Hanover Research (2010), is simply that the research is inherently biased making it difficult to have objective discussions about the benefits and limitations, for example. This chapter presented several studies not commissioned by the IBO and it reported their findings with regard to limitations around point of access and accessibility of the program.

A gap in the literature remains in terms of looking at outcomes of participation beyond the immediacy of college admission and preparation. The work of Conley (years) was presented in this chapter as foundational in the discussion of what is required to be college ready and what it means to be successful once in college. Conley's research works in conjunction with the established principles and practices of the IBO and is pivotal in much of the literature by and about IB and college readiness. As the literature review points out, the skills and knowledge gained through IB play out in the first years of college course work. However, what are the lasting impacts of an IB education beyond academics? It is this perspective that is missing in much of the literature, and if explored, would provide depth and breadth to the discussion. It is for this reason that this study explores alumni perspectives to answer the questions: What do IBDP alumni identify as significant components of the IB experience? In what ways did the IBDP prepare or not prepare you for life after high school? And, to what extent do alumni value the IBDP experience? Through these questions, exploration of cognitive and non-cognitive skills contributes to research about long-term outcomes.

CHAPTER THREE: METHODOLOGY

This qualitative descriptive study explored the outcomes of participation in the International Baccalaureate Diploma Program (IBDP) from the alumni perspective. This chapter presents the study's methodology and begins with the context of the study, followed by the research design including the research questions, participants, role of the researcher, instrumentation, data analysis, and validity. The chapter concludes with a summary.

Context of Study

To fully understand the context of this qualitative descriptive study, a comprehensive discussion of the setting and participants is necessary. The researcher defined the case as the existing International Baccalaureate (IB) program at Poudre High School (PHS) in Fort Collins, Colorado with emphasis on the Diploma Program (DP) in grades 11 and 12. The study explored alumni perceptions of the outcomes of participation in the IBDP. This case was selected for study because of its intrinsic interest to the researcher who worked at the site and sought a deeper understanding of the student rationale for pursuing and attaining a diploma in the IBDP. Additionally, the researcher had access to alumni of the PHS's IBDP from previous years because of existing databases maintained by the program and the researcher's role as director of the IB program at PHS.

Demographics & Culture

PHS is one of four comprehensive, public high schools in Fort Collins, Colorado, a well-educated, middle class city of approximately 161,000 located in northern Colorado. The city is home to several large employers including Colorado State University, Anheuser Busch, Banner Health, and Woodward Governor, and has been named one of the best places to live and retire

because of its proximity to the mountains and the high standard of living. In fact, since 2010, the population has grown 10% as people are drawn to the setting, university, and large employers (U.S. Census Bureau, 2016). According to the 2015 U. S. Census Bureau, the median income of Fort Collins was \$53,889.00 compared to \$60,629.00 for the state of Colorado; 52% of Fort Collins citizens hold a bachelor's degree or higher; and 89% of the citizens identify as white/Caucasian, 10% Hispanic, 1% other ethnicities (U.S. Census Bureau, 2015).

Within this setting, PHS sits in the northern portion of the city and is one of the more ethnically and socio-economically diverse high schools in the city. When it opened in 1969, it served the rural population in the northern part of the city. Today, the boundaries are roughly the size of Rhode Island and include students from diverse socio-economic, ethnic, and geographic backgrounds. Student enrollment in 2015 was 1,744 with 69% White, 23% Hispanic, 3% Asian, and 5% other races. It should be noted that the IB program at PHS does not reflect these demographics. From 2010-2015, for example, the graduating classes averaged 93% White, 3% Asian, and 4% other. PHS is also home to the Newcomer Academy for students new to the United States who have limited English language proficiency. Of the other three comprehensive, public high schools in the city, PHS has the highest Free and Reduced Lunch rate at 40%.

PHS offers a variety of programs and opportunities to meet the needs of the diverse student population. Some of those programs include: Pathway After Hours for students to earn their GED during evening hours; AVID for first generation college bound students; Pathway Academies with courses like geometry and construction; and, several credit-based transition programs including Concurrent Enrollment, Advanced Placement, and International Baccalaureate. Students also have the opportunity to participate in approximately 50 different extra-curricular sports, clubs, and teams as well as music and theatre performances.

International Baccalaureate at Poudre High School

The IB at PHS has been in existence since 1996. When it began, it was conceived as a school within a school allowing for a small cohort of twelve like-minded students with a culture of collaboration and support. Initially, just the DP was introduced and in 2001 the Middle Years Program (MYP) at grades 9 and 10 was added. This increased the enrollment in the IB program, but the cohort culture remained intact and exists today. This cohort culture is what draws many families and students to the program as students and parents look for ways to make a large high school of 1,750 students feel smaller.

The success of the IBDP at PHS is another reason families are drawn to the program. Since its inception, the program has had diploma pass rates near 90% and above, compared with the national average of 79% (IBO, 2016). On individual exams, PHS IBDP students' average scores on English and history exams are 5.5 and 5.7—well above world-wide averages of 4.75 and 4.24 (IBO, 2016). On average, students earn 24 college credits for their performance on the IB exit exams; some students earn enough credits to enter their first year of college as first semester sophomores. Thus, in northern Colorado, anecdotal evidence reveals the PHS IBDP is considered to be of excellent caliber and is held in high regard by Poudre School District and the PHS faculty. Table 3.1 compares diploma statistics for PHS and IB worldwide.

Table 3.1

IB Diploma Statistics Comparison PHS, World, Nation

IB class	# of IB diploma candidates (PHS)	% of students who earned IB diplomas (PHS)	% of students who earned IB diplomas (world)	% of students who earned IB diplomas (U.S.)	Average score on individual exams—out of 7.0 (PHS)
2006	70	93	82	74	5
2007	81	88	81	76	4.9
2008	72	94	83	75	5
2009	86	96	81	76	5
2010	80	91	83	77	5
2011	88	90	77	74	5.04
2012	90	89	76	71	5.1
2013	71	96	79	73	5.1
2014	76	94	79	69	5.1

Note. Data compiled from PHS IBDP databases.

Research Design

Qualitative research is useful when examining individuals' behaviors and the perceptions that drive those behaviors. Creswell (2009) described qualitative research as "a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (p. 4). Mack, Woodson, MacQueen, Guest, and Namey (2005) suggested such research seeks to understand a research problem or topic from the perspective of the local population and is especially useful when information about opinions and values is sought. As such, a strength of qualitative research is that it has the ability to provide complex textual descriptions of intangible experiences. Because this study specifically seeks to understand the opinions and perspectives of individual experiences, qualitative research is most appropriate.

Further, Strauss and Corbin (1990) identified specific reasons for engaging in qualitative research including: uncovering and understanding what lies behind a phenomenon; gaining fresh slants on information that may already exist; and, providing details on phenomenon that may be difficult to convey with quantitative methods. This study explores feelings and reflections about participation in the IB program; a program for which considerable research on quantifiable outcomes exists, and less on qualitative perceptions. Specifically, then, a phenomenological methodological approach was taken for this study because it “focuses on descriptions of what people experience and how it is that they experience what they experience” (Patton, 2002, p. 107). Participants’ lived experiences in the PHS IBDP and their perceptions of how those experiences impacted their post-secondary pursuits helped to explain what the experience of IBDP is like, one of the central aims of the phenomenological approach (Creswell, 2009).

Further, this approach is appropriate for this study because it assumes:

there is an essence or essences to shared experience. These essences are the core meanings mutually understood through a phenomenon commonly experienced. The essences of a phenomenon, for example, [can be] . . . the essence of being a participant in a particular program. (Patton, 2002, p. 106)

In this case, the study’s purpose aligns with a phenomenological approach because the researcher explored what it means to be an IBDP graduate and what significance or value is or is not found in that experience. The descriptions of alumni experiences, and the ways in which those experiences informed other aspects of their life, shed light on the essence of the program itself and the outcomes of participation in that program.

Research Questions

Following a descriptive research method, the research questions this study addressed included:

1. What do IBDP alumni identify as significant components of the IB experience?

2. In what ways do alumni perceive participation in IB to have contributed to post-secondary life?
3. Do alumni feel their participation in the program was of value?

Participants

The population for this study consisted of PHS IBDP graduates from the classes of 2006-2014. Specifically, the sample population were students who successfully earned a PHS diploma and completed the IBDP core components as well as required IB Internal and External Assessments. Whether or not students earned the IB diploma through successful completion of the IB exit exams was not a consideration in determining eligibility for participation in this study because the study focused on perceptions of participation rather than earning the diploma.

Quota sampling, sometimes considered a type of purposive sampling, is often used with qualitative studies such as this one. With quota sampling, while designing the study, the researcher determines how many people and which sample characteristics to include. The criteria chosen allows the researcher to focus on those who are most likely to experience, know about, or have insights into the topic of research (Mack et al., 2005). For this study, the researcher used quota sampling over purposive sampling because it allowed the researcher to choose the same number of participants from eight graduating classes to provide perspectives over time. The criteria for selection in the quota sample included students who graduated from PHS and completed the IB components, as noted above. The goal of this study was to examine graduate perspectives regarding outcomes of participation in the IBDP at PHS and so the criteria for selection was limited to those who graduated rather than other factors like gender, race and ethnicity, or socioeconomic status.

Between the years 2006 and 2014, the graduating classes averaged 84 students and the total number of graduates was 756. This number represents students enrolled in the full DP as well as students enrolled as course candidates who did not receive the full diploma. PHS graduates who received the full diploma between 2006 and 2014 was 714. The highest number of graduates was 92 in 2012, 2013, and 2008 and the fewest were 72 in 2006. Table 3.2 presents these numbers for comparison.

Table 3.2
PHS IBDP Number of Graduates by Academic Year

IB graduating year	# of PHS seniors taking exams (including course candidates)	# of PHS IB diploma candidates only
2006	72	70
2007	81	81
2008	77	72
2009	86	86
2010	81	80
2011	90	88
2012	92	90
2013	92	71
2014	85	76

Note. Information obtained from PHS IBDP graduation data.

To provide a robust sample representative of IBDP graduates over time, 25 students from each year were randomly selected for a total of 200 identified subjects. The rationale for selecting the eight years between 2006-2014 was based on the premise that program quality and effectiveness can be measured by monitoring what an individual has accomplished in the years after the event (Cabrera, Weerts, & Zulick, 2005). This alumni sample provided a wide range of

life experiences from those about to graduate from a university to those potentially employed; thus, varied reflections, memories, and accomplishments related to participation in the IBDP could be recorded.

Role of the Researcher

In qualitative research, the researcher becomes a “co-constructor of knowledge, of understanding and interpretation of the meaning of lived experiences” (Denzin & Lincoln, 2011, p. 196). The researcher facilitates the process of meaning making rather than directing information in a predetermined direction. Guba (1990) suggested that qualitative findings are the creation of the process of interaction between the subject and the researcher; they are inextricably entwined further emphasizing the researcher’s role in this iterative process.

Because the researcher is a “passionate participant” (Denzin & Lincoln, 2011, p. 110) in the reconstruction of experiences, it is important that both the expertise and biases are addressed. In this study, the researcher has a direct connection to the high school and the program so both expertise and bias are at play. The researcher has been an educator for 20 years; 19 of those at Poudre High School. She taught classes in English, History, and Humanities at grades 9-12 in both the IB program and general education. Prior to being hired at PHS, the researcher had a personal connection to the school because for 32 years the researcher’s mother taught English, History, and Humanities at PHS. While this may seem irrelevant, it played a key role in the researcher’s expertise with regard to the culture and climate of PHS. Additionally, the researcher’s expertise in IB was developed over the past three years of becoming the IB director, an administrative role that required incredible understanding and knowledge of the IB program as whole including MYP and DP.

Clearly, each individual brings unique experiences that allow for various perspectives when observing and recording phenomenon. Haller and Kleine (2001) pointed out that, "In examining a qualitative study, it is important to look for evidence that the researcher is attempting to come to grips with the role the researcher's perspective brings to the study" (p. 204). Creswell (2009) emphasized the need for researchers to position themselves in the research and openly acknowledge personal bias. The researcher's experience with the IB program and PHS have been positive throughout the years witnessing the benefits of the IB education for a diverse group of students. Aside from the academic credit that DP graduates earn, in general, students who are in the program tend to have strong study and time management skills, as well as a drive to excel and be involved in the community. Students' research skills and critical thinking often surpass those of students not enrolled in the program and their writing skills are phenomenal.

However, the researcher has also seen how the rigors of the program negatively impact students and their families. Medical and mental health issues arise and parents question the amount of time their son/daughter spends doing homework rather than engaging in family activities. Student stress levels are predictably high at certain times of the year based on program deadlines and much of the directors time is spent trying to alleviate or manage the mental health issues that inherently arise. Many students and parents ask the question, "Is the program worth it?" It is that question that the researcher wanted to explore through both the positive and negative lens. In acknowledging that both viewpoints exist, the researcher admits to bias and is open to understanding and exploring other ideas.

Instrumentation

Qualitative studies often employ instruments that are flexible, iterative, and open ended to enable the researcher to explore and describe the phenomena in question. Mack et al. (2005) note that instruments using open-ended questions tend to evoke responses that are rich and explanatory, unanticipated by the researcher, and personally meaningful to the participant. This type of question provides opportunity for participants to respond in their own words with individual interpretations of phenomenon. Thus, because this study focused on individual perceptions, feelings, and reflections, the researcher used a questionnaire with eleven open-ended questions (see Appendix B).

The participants in this study resided in various locations throughout the nation making email the most convenient and efficient means of communication. The questionnaire was therefore distributed electronically limiting the interaction between the researcher and participant. While direct dialogue between the researcher and participant was limited, open-ended questions still allowed participants to provide as much or as little information as they chose. The 11 open-ended survey questions were created by the researcher with input from a faculty member with extensive experience in the PHS DP program. Each question related to one of the three research questions with the inquiry aim to illicit information to aid in the understanding and reconstruction of students' experience in the program (see Appendix C).

Because this instrument was created by the researcher, it was field tested with 10 PHS IB graduates from the previous two years, 2015 and 2016. After completing the questionnaire, participants were asked to respond to the following:

1. The amount of time it took to complete the questionnaire.
2. Their ability to easily comprehend the questions.

3. The ease of accessing the questionnaire and returning it to the researcher.

Following input from these participants, the directions were amended to include the anticipated amount of time it would take to complete the questionnaire, and acronyms were clarified and defined to help recall components.

The decision to use alumni surveys, which have served a variety of purposes since the 1930s, was based on research that shows several benefits to the method. Notably, alumni surveys are an outcome-based approach that assumes alumni outcomes and accomplishments can be used to program quality and promote change. Alumni surveys measure and monitor achievements which may be indicative of a program or individuals' success or failure (Cabrera et al., 2005). This survey methodology tends to be popular because it is based on generally understood indicators of success like achievement in one's life or profession; however, there are limitations to this method like the fact that perceptions change over time and reflections may not be accurate recollections of events. Additionally, Pike's (1994) study on alumni reflections showed that one's current status can impact how one rates past experiences. If, for example, the individual is currently happy in his or her job, he or she is likely to rate prior experiences positively and vice versa. While alumni surveys have limitations, there is also great value to this approach in providing another perspective on program effectiveness.

Procedures

Before beginning the study, the researcher obtained consent from Colorado State University's institutional review board (IRB), PSD, and PHS Principal. Once consent was given to proceed, a participant database and the instrument were developed, a field test was conducted to refine the instrument, and following a general inductive approach, data was collected, coded, categorized, and themes and trends were identified.

Data Management

The IB program at PHS has maintained student contact records for the last 12 years. When students graduate, they are asked to provide email and contact information for both themselves and their parents. This information is maintained on the PHS server and does not contain information beyond name, emails, mailing addresses, and the year of graduation. This database allowed the researcher to identify participants using quota sampling, as previously stated, so that from the initial list of 690 graduates, 200 received an invitation to participate in the study.

To begin the process, the researcher sorted email addresses by graduation year and 25 students from each year were randomly selected for participation. The researcher then sent an email to the addresses on file informing the family and/or student about the study and inviting them to participate. The letter asked that interested individuals reply to the email and then the questionnaire was sent. The intent of this initial letter was two-fold: to gather accurate email addresses and to gain consent from subjects.

As subjects responded with consent to participate, they were added to an Excel spreadsheet that included the following fields: last name, first initial, accurate email, year of graduation, date subject responded, date questionnaire emailed, and date questionnaire was returned. As they responded, the researcher sent the questionnaire via email to the participant with a request to return the responses directly to the researcher within two weeks from receipt of the questionnaire.

The initial request for participation elicited 17 responses and of those 17, nine individuals returned questionnaires. Thus, using random sampling, a second request for participation was sent to 64 additional subjects. This second request elicited 10 responses of interest and of those

10, six individuals returned the questionnaire. At this point, analysis of the data set revealed gaps including gender and graduation years. Specifically, the years 2009, 2012, and 2013 were lacking representation as were male voices. The decision was then made to use purposeful sampling to identify and conduct interviews with male graduates from the three years. An amendment to the original IRB was submitted and approved which allowed for interviews with an additional five participants: four males, one female, three from 2009, one male and one female from 2012 and 2013. Of the five, due to circumstances, two participants completed the questionnaire electronically; the other three participated in interviews. One interview was held face-to-face, and the other two were phone interviews. All three were recorded and transcribed. The interviews themselves were semi-structured allowing for greater latitude in participants' responses which provided additional insights and information from the written questionnaire responses.

Data Analysis

Although qualitative data is typically accessible and frequently collected, strategies for analyzing data are not always as easy to define or access. Typically, various types of inductive and deductive approaches are utilized and often combined to facilitate rich interpretations of the data. According to Thomas (2006), inductive analysis in particular is useful for qualitative research because it encourages the development of concepts and themes through interpretations made from the data. This idea echoes Strauss and Corbin's (1998) description wherein, "The researcher begins with an area of study and allows the theory to emerge from the data" (p. 12). The inductive approach is fluid which allows findings to emerge from dominant or significant themes in the data. More specifically, a general inductive approach is useful to: condense text into summary; establish links between research objectives and the findings; and, develop a model

or theory about the underlying structures of experiences (Thomas, 2006). In the case of this study, the data were summarized to provide links enabling the researcher to understand the experiences of the participants in relation to their participation in the IB program; thus, this approach fit nicely with the intended outcome of the study.

The process for data analysis in this study followed a general inductive approach and included the following procedures:

1. Preparation of raw data in common format and saved files.
2. Close reading of the text to gain an understanding of themes.
3. Creation of categories based on the themes and the research questions. This included coding, annotating, and categorizing words and phrases.
4. Identifying overlapping coding and uncoded text to determine what may or may not be useful.
5. Continuous revisions of the codes and categories in search of new insights, contradictory views, or subtopics that get at the essence of the category and/or research (Thomas, 2006).

After receiving the responses, they were formatted in a Word document and saved under the participants' last name and graduation year. The responses were double spaced and the questions were left in the initial document to facilitate the close reading and categorization. After the responses were formatted and saved, they were printed for further analysis. For the three interviews, the audio recording was sent to an online third party for transcription. The transcriptions were reviewed and edited by the researcher for grammatical errors and cross referenced with the audio to ensure that all information was adequately recorded. Then the

transcriptions were saved, like the questionnaires, in a Word document, and printed. All of the responses were saved in an electronic folder.

Following the preparation of the data, the researcher began a close reading of all responses and created a list of recurring phrases, words, and ideas. From here, the printed responses were color coded based upon the question so that all responses to question one were underlined in brown, for example, and responses to question nine were underlined in pink, and so on. Then the researcher cut apart the responses and grouped them according to color. This began step three in the process and aided in the creation of categories.

Once all responses were gathered for a specific question and color, the researcher read them looking for common themes, annotating the individual responses, and identifying recurring words or phrases. A summary of the responses was then recorded and the researcher moved on to the next question. Through this process, five broad themes emerged providing an overview of participants' experiences. These themes included: program reputation and outside pressures; skill attainment; post-secondary influences and impacts; cohort culture; and reinforcement of personal attributes, interests, and skills.

However, the iterative nature of inductive analysis encourages refinement of the themes and so the next step included responses analysis in relation to the research questions. This was accomplished by reorganizing the responses in terms of survey questions tied to the study's research questions. Table 3.3 illustrates this alignment.

Table 3.3

Survey Questions Aligned With Research Questions

Survey question	Demographic	RQ #1 Components	RQ #2 Contribution	RQ #3 Value
What grade did you enter the IB program?	Grade entered			
Why did you initially enroll in the IB program?	Initially enroll			
After high school, describe the path you pursued (university, Peace Corps, gap year, etc.).	Path pursued			
What sort of things do you remember that were promoted as core values of the IB?		Memory of IB core values promoted		
In what ways, if any, do you regard the IB as having influenced your decision to attend (or not attend) a university?			Influence on university attendance	
Do you regard the IB, or any aspects of the IB program, as having influenced your choice of career? If so, how?			Influence on career	
What, if anything, did you learn or gain from your time in the IBDP that you utilize in your life currently?			Relevant skills used currently	
Were there any areas of life after graduation you felt			Areas of preparation	

more or less prepared for after your participation in the IBDP?				
Describe a memorable event during your time in the IBDP and explain why it was so memorable.				Memorable moments
What motivated you to continue with the program at the time you were enrolled?				Motivations
Would you recommend the IB program to others? Why or why not?				Recommendations

In this way, the researcher reorganized the responses and read responses to questions 5, 6, 7, and 8, for example, as a whole in terms of what they revealed about participants' beliefs regarding how the IB program contributed to future endeavors. This process helped refine categories and themes narrowing the themes to five: reasons for joining, significance of components, college preparation, impact of stress, and value of program.

In the final steps of analysis, the researcher revised themes, identified significant quotations that got at the essence of the study, and identified text that was not useful in the final analysis. Following these procedural steps for general inductive analysis allowed for a systematic approach to evaluate and process the data for this study.

Trustworthiness

When discussing issues of validity and reliability in relation to qualitative research, researchers often employ the term trustworthy. And, although explanations of qualitative inquiry

are ever changing and being redefined, Guba's (1981) four criteria for trustworthiness are accepted by many researchers and provide a framework for understanding the topic as it relates to this study (as cited in Shenton, 2004). The four criteria include: (a) credibility (in preference to internal validity), (b) transferability (in preference to external validity/generalizability), (c) dependability (in preference to reliability), (d) confirmability (in preference to objectivity).

Credibility in this study was initially established through the researcher's familiarity with the culture of Poudre High School and the IB program, as well as detailed descriptions of background and understanding as it related to the study. Additionally, the researcher employed well recognized qualitative research methods including random sampling, surveys, and interviews and took necessary steps to ensure a robust sample representative of the parameters of the study. Questionnaires and interviews with subjects of different genders and ages to provide depth to the experiences are represented in the study

Transferability refers to the idea the findings of one study are transferable to other studies and situations. However, in qualitative studies, often there are small numbers of participants involved making it difficult to suggest that the findings are applicable to other populations or situations. If qualitative studies are considered to be samples within the larger population, the findings may be considered an example that could in fact be transferable to other populations or studies (Shenton, 2004). Thus, in this study transferability as it relates to trustworthiness was addressed through the detailed description of PHS including the historical context for the IB program. Detailed descriptions of participant demographics illustrate the sample population creating a description of one particular site that may be transferred to similar sites or studies.

The third criteria in Guba's model, dependability, was addressed through the detailed description of the methodology and use of overlapping methods including questionnaires and

interviews. Lastly, the concept of objectivity is addressed in qualitative research through confirmability. Confirmability requires the researcher to take all necessary steps to ensure that the work and findings are results of the experiences of the participants rather than just summaries or characteristics of a larger population (Shenton, 2004). In order to attain this level of objectivity, the researcher began by revealing personal beliefs, assumptions, and potential biases regarding the study. Two forms of data collection from a variety of participants across the nation were included and the researcher acknowledged the shortcomings in study's methods and their potential effects. These things were done to ensure that the results were as objective as possible in this qualitative study. Thus, necessary steps as suggested by Guba's criteria, were taken to ensure trustworthiness within this study.

CHAPTER FOUR: FINDINGS

This chapter presents findings from survey and interview responses with 20 individuals who participated in the International Baccalaureate Diploma Programme at Poudre High School between the years 2006-2014. Descriptions of experiences are used to explore short and long-term outcomes of participation in the program. Table 4.1 illustrates the findings related to the research questions, themes, and number of references to each theme. The number of references to each theme is provided to show trends in the results as they relate to the questions and descriptions.

The research questions that guided this study:

1. What do IBDP alumni identify as significant components of the IB experience?
2. In what ways do alumni perceive participation in IB to have contributed to post-secondary life?
3. Do alumni feel their participation in the program was of value?

Table 4.1
Themes With Descriptions and Number of References

Research Question (RQ)	Description	Theme	No. of times referenced by sources
Demographics	Motivations for joining	Parents	5
		Friends	7
		Challenge	6
RQ #1	Recollection of significant components of IB program as identified by IBO	Learner Profile	2
		Theory Of Knowledge	5
		Creativity, Activity, Service	2
		Extended Essay	1
		TOK & CAS	1
	Recollection of values	Open-mindedness—direct	6

	Promoted by IB program	reference	
		Open-mindedness—derivations of term	9
		Critical Thinking	9
RQ #2	Influence on post-secondary pursuits	University Attendance—reinforced desire	14
Part I		Career Choice—direct influence	3
		Career Choice—indirect influence	8
Part II	Skill attainment/deficit	Critical analysis/thinking	9
		Writing	13
		Time management	4
		Confidence in abilities	3
	Emerging skills	Collaborative skills	5
		Content deficit	3
		Social skill deficit	4
RQ #3	Value of participation	Cohort/supportive culture	16
		Development of skills	7
		Pride & confidence in abilities to complete tasks	9

Note. Significant components referenced in RQ #1 include those identified by IBO and those self-identified by participants. The IBO defines the core components as the following: theory of knowledge (TOK) creativity, activity, and service (CAS), and Extended Essay (EE). These components are at the heart of the DP curriculum and successful completion of all three is a requirement for the IB diploma.

In order to provide context for the data and findings, the chapter begins with a general description of the participants, then emergent themes are presented as they relate to the research questions, and the chapter concludes with a summary.

Participant Descriptions

Twenty alumni participated in this study; 17 submitted written responses to a questionnaire and three provided oral responses through interviews with the researcher. Fourteen participants were female, six were male and the sample represented the following graduating classes: 2006, 2008, 2009, 2010, 2011, 2012, 2013, and 2014. Table 4.2 presents the

demographic data for the sample including participants' graduation year, gender, institution attended, degree earned, and additional information relevant to the study.

Table 4.2
Participant Summary

Year of graduation	Gender	Institution	BA, MA, or PhD	Additional information on major or experiences
2008	Female	Clark University	BA	BA Economics; lived in Beijing for one year
2013	Male	Stanford University	BA & MA	Athletic scholarship; entering Peace Corps
2011	Female	Unnamed	BA with multiple study abroad trips	Works in Chile
2010	Female	Lewis & Clark College	BA & MA	BA & MA in International studies; taught English in Spain between degrees
2009	Female	St Olaf College	BSN	Entrepreneur
2008	Male	University of Colorado	BA, MA, PhD	Chemical Engineering, Material Science and Engineering
2014	Female	Colorado State University	BA	Biomedicine & Microbiology
2009	Female	University of Missouri	BA, MA, MD	Internal Medicine
2011	Female	Colorado State University & Vanderbilt	BA, MA, PhD	
2009	Female	Unnamed	BA	
2014	Female	Colorado State University	BA	Will graduate in 2 years in Biomedicine
2011	Male	University of Colorado	BA	
2010	Female	Colorado State University, Bowdoin, Cornell	BA, MA, PhD	Classical Literature
2010	Female	Rotary Exchange, Switzerland University	BA	Exchange to Argentina; BA International Economics & Banking; lives in UAE
2009	Female	Gap year, University of Vermont, University of California at	BA, law degree	Spain; International Public Interest Law

		Berkeley		
2009	Male	University of Colorado	BA	English & electrical engineering; taught English in China 5 years
2009	Female	University of Colorado	BA	International Affairs; HR for software company in San Francisco
2009	Male	University of California at Berkeley	BA	Business Energy & Resources; International travel,
2012	Male	Occidental College	BA, MA, PhD	Athletic scholarship; mathematics
2006	Female	Colorado State University	Did not graduate	Dropped out of school due to numerous mental and health issues

Note. Bachelor of Arts (BA), Master of Arts (MA), Doctor of Philosophy (PhD), Medical Doctor (MD). Bachelor of Science in Nursing (BSN)

An eight-year time span separated these individuals so the experiences reported represent a variety of perspectives from recent college graduates to those with several years of work experience. This allowed for varied reflections on experiences in the program because some easily recalled high school, whereas others were removed 10-11 years.

Of the 20 participants, 17 immediately entered a four-year university or college upon graduation from high school. Fifteen of those completed their undergraduate degree in four or 4.5 years and two individuals have two years remaining in the undergraduate program. Of the 17 who entered the university, three transferred during their undergraduate and received degrees from an institution other than that which they initially enrolled. Three attended university on an athletic scholarship.

Of the remaining three individuals who did not immediately enter higher education upon graduation, two spent a year abroad doing a gap year and Rotary Exchange, respectively; the third dropped out of college due to health and mental illness. However, ultimately 19 of the participants reported that they graduated or are on track to graduate from a university with at

least a bachelor's degree. Two individuals completed both a Bachelor of Arts and Masters and five completed or are on track to complete a PhD in topics ranging from Classical Literature to Biomedicine.

It is interesting to note that eight of the participants reported engaging in international experiences either living or working abroad and five, specifically, majored in something related to internationalism like international relations, international law, or international economics and banking.

In terms of when participants entered the International Baccalaureate program and why, the findings show: four were enrolled in a Primary Years Program (PYP) beginning IB in kindergarten, six entered Middle Years Program (MYP) in 6th grade, nine enrolled at Poudre High School in the MYP program during their 9th grade year, and one student enrolled at PHS in 10th grade, which is the last year of the MYP program. PYP was introduced to the Poudre School District in 2005 and the four who initially began their IB career in kindergarten were members of the original PYP classes. The student who enrolled as a 10th grader transferred to the public high school from a local charter school that emphasized classical curriculum.

Motivations for Joining International Baccalaureate

IB is a program of choice and this study examined the outcomes of participation in the program; thus, one of the demographic questions participants were asked was, "Why did you initially enroll in an IB program?" Reasons for entering the program fell into three common, intertwined themes: parental decision and/or pressure, friends and peer pressure, and a desire for academic challenge.

Parental decision and/or pressure. Those who enrolled in the PYP acknowledged their parents made the initial decision regarding where they would attend school. "My mom enrolled

me at Dunn (a PYP school) because she had heard good things. Eventually all my friends and peers were also in IB—it seemed like a challenging and beneficial program.” Another stated, “Mom said I should, and my neighbors who were becoming good friends were both in IB.” For four participants, their siblings participated in the program and so their parents expected and encouraged them to do so as well.

Friends and peer pressure. For many students, the influence of peers was a deciding factor in entering an IB program or not. This was especially important for students entering the 9th grade because 9th graders are a part of the high school in PSD. The majority of students coming into Poudre High School came from feeder schools so their friends from middle school were likely to be in the same high school but not necessarily in the same program. The decision to enter the IB program, then, was heavily influenced by friends and peer pressure. One participant stated:

The IB program had a good reputation for academic rigor and a progressive curriculum. Moreover, a number of my friends and acquaintances from elementary school were also enrolling in the IB program, so this seemed like a fairly natural next step.

A desire for academic challenge. One participant simply stated enrollment was because “I considered it the best academic program in the area.” Another student acknowledged she wanted to learn to write better and manage her time, and as a homeschooled child, she wanted to get out of the house. For one participant, the academic challenge was seen as an opportunity to enter a quality university program. Two others mentioned the international perspectives as important in preparing them for higher education in other parts of the world.

Reasons for staying in the program generally reflected the desire to finish what was started and simply the ease of maintaining status quo. As one participant stated, “When I came

to Poudre in ninth grade, and when a lot of my friends decided to leave after their sophomore year of high school, I stayed mostly because I wasn't motivated to leave for any reason.”

Summary

Participants in this study represented a range of ages and experiences from those now solidly established in a career to those ready to graduate from college. The participants shared similar motivations for joining the program and continuing through to the end and all but one participant completed or is about to complete at minimum, a bachelor's degree. A focus on internationalism is represented in the career choices of participants who traveled abroad and/or studied topics related to internationalism.

Significant Components

The first research question in this study was, “What do IBDP alumni identify as significant components of the IB experience?” To answer this question, the researcher asked participants, “What types of things do you remember were promoted as core values of the IB?” A recurring theme was revealed after analyzing responses wherein participants recalled general values associated with the program but not IB specific titles or labels for the core values.

IB's mission statement clearly states that the program aims to develop “internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world” (International Baccalaureate Organization [IBO], 2015a). Further, the IB identifies 10 traits that all IB learners strive to attain and are described in the IB Learner Profile. Chapter 2 provided an overview of the traits including their definitions and an explanation of the relationship between the traits and core components (Table 2.1). Those traits include: inquirer, knowledgeable, thinker, communicator, principled, open-minded, caring, risk taker, balanced, and reflective.

Further, the Learner Profile traits are embedded in the IB curriculum and at the heart of the core components—theory of knowledge (TOK), creativity/activity/service (CAS), and extended essay (EE)—which are intended to allow Diploma Programme students to apply their understanding of the aims and traits. In other words, the three core components allow for the practical application of the Learner Profile traits, which are all representative of the IB values. The DP curriculum model in Figure 2.1 illustrates the relationship between and among the core components and the six subject areas.

Participants, when asked the aforementioned question about what they recalled were promoted as core values of IB, indirectly cited aspects of the Learner Profile including: open-mindedness, critical thinking, hard work, tolerance, respect, empathy, service, communication, inquiry, self-reflection, and international awareness. In general, participants did not label these as traits of the Learner Profile; rather they were seen as wholistic qualities of the program. However, 11 responses did directly refer by name to the Learner Profile, TOK, and/or CAS and one even recalled a phrase from the IB mission statement that “Others, with their differences, can also be right.” Of the 11 responses referencing components, five mentioned TOK, two addressed CAS, one referenced both TOK and CAS, one alluded to the EE, and two used “IB learner profile” in their response.

References to TOK were mostly positive and two students simply said that “TOK was great.” Another participant’s response was more specific and acknowledged the impact of TOK on “developing an introspective awareness of the workings of the inner mind and giving students new perspectives on many aspects of thinking and learning.” CAS references were more tentative as students recalled being required to complete service and activity hours and using phrases like, “I think it was called CAS” to explain the component. One student did

acknowledge that during her undergraduate career, she engaged in a great deal of service work due to the CAS project. One student alluded to the EE saying:

Writing the personal essay and doing my own at the source research was fascinating and changed the way I accepted experts and sources. It was also a great lesson in having your own thoughts proven wrong and learning to accept that as part of the process and not a failing.

Two students referenced the Learner Profile and expanded by including the traits they vividly recalled. In general, participants did not elaborate on their recollections of the values associated with TOK, CAS, or the EE; instead, they noted general values they recalled from completing those components and what was promoted by the Learner Profile.

The two most cited values in these responses were open-mindedness and critical thinking. IB defines open-mindedness as critically appreciating “our own cultures and personal histories, as well as the values and traditions of others. [IB learners] seek and evaluate a range of points of view, and are willing to grow from the experience” (IBO, 2015b). Six participants in this study used the term “open-minded” and nine others referenced subtopics of the term as defined by the learner profile. One participant, for example, said: “I often remember the core values of IB as including: hard work, diligence, respect for others, multicultural understanding, and perseverance—all qualities that I still try to embody in my work on a daily basis.” Other phrases used to explain open-mindedness included: “openness to other cultures and ideas;” “value of other culture/differences;” “alternate perspectives;” “multiplicity of perspectives;” and “understanding for others different from ourselves (in particular other cultures).” One participant said:

I remember that values such as open mindedness, diversity, and service are core values of the program, as well as for most of my teachers. I also think work ethic and organizational skills were emphasized as values of the program. And, of course, I remember my teachers always highlighting the importance of critical thinking.”

And another participant summarized her recollection of IB values saying:

Having been in IB since Kindergarten, I fondly remember coloring in the jigsaw man with the 12 IB attitudes, the ones I remember were open-minded, tolerant, respectful, empathetic, communicator, risk-taker, and inquirer. The overall sense I got from the program was that we were expected and taught how to be respectful, inquisitive, globally minded students who consider multiple sources and biases and are continually asked to shape their world view in such a way that we would have an answer for our opinions when asked, rather than just repeating something we had read without question or thought. I really appreciate that we were taught how to be good writers and develop our literacy skills; not only that but the IB program does require a lot more homework and especially essay writing than a normal high school education, which I have found to be invaluable.

For both of these participants, the values associated with the IB program were multi-dimensional. They acknowledged the importance of recognizing differences and multiple perspectives while also being able to think critically and support their opinions.

With regard to critical thinking, most participants acknowledged this was an important part of the program and something they remember as being heavily emphasized. Because of the instruction received, one participant recalled, “We would have an answer for our opinions when asked, rather than just repeating something we had read without question or thought.” Another student acknowledged the long-term impact of the program saying, “IB was all about fostering lifelong learners who are critical thinkers and continue to be curious and ask questions.” Other participants clearly stated their recollections of the program and the importance of critical thinking. One said:

Critical thinking was something that the IB program emphasized early on (especially employing it in written communication). The IB program encouraged constant reevaluation of information and careful analysis of argumentation. Moreover, I do think that the IB program valued diversity of opinion and identity in a way that wasn’t forced or artificial.

The following participant recalled critical thinking within teaching and learning:

Deep analysis of class subject matter—spending an entire day on a poem or a math problem. The teachers were relatively knowledgeable, and passionate. Cared about what they were teaching and wanted, even needed, you to care—opposite feeling of some other high school classes. IB community was tight, which I think was mostly a good thing.

Two participant’s responses identified values of participation in the PHS IB program, not necessarily of the program itself. The first participant fondly recalled a phrase from the IB mission statement and then addressed the PHS cohort specifically:

The core value I will always remember is ‘Others, with their differences, can also be right.’ I have shared this value with many since that time, and I think it was key learning that supported my ability to successfully live abroad and learn/work in a multicultural setting. Also, I’m not really sure this is a value that’s actively promoted by IB, but the PHS IB Program created an environment where it was safe and valuable to be different (aka, a nerd), at an age when everything around you is pushing you to conform. Since IB, I’ve found myself in many social groupings that I would describe as an Island of Misfit Toys, and they are the most beautiful, supportive and creative “families” that I’ve ever had the fortune to be a part of. My PHS IB class was my first experience of this and gave me an incredible baseline for human decency and the power of teamwork that has set a benchmark for my expectations of the type of people I choose to surround myself with. I will be forever grateful to them for this.

On the other hand, a different perspective of what was promoted within the PHS program were presented by a participant who stated:

Forgive my amusement. I remember multiculturalism, multiplicity of perspectives, and critical thinking being important. I still value these. However—and this is the part that makes me laugh—I also recall ‘IB, therefore, I BS.’ (I particularly remember that my class valedictorian was known for cheating. He was fully intelligent enough to make straight A’s without even breaking a sweat, but preferred laziness), [*sic*] pulling all-nighters, obsessing over scores as if they mattered more than life itself It’s funny the things that don’t matter at all after ten years.

Summary

The first research question explored alumni recollections of significant components of IB. By extension, these components encompass the values promoted by IB and in this study the values participants most frequently recalled were indirectly tied to the core components and more directly corresponded with the traits of the Learner Profile; however, it is not clear that the

participants knowingly referenced traits from the Learner Profile or simply referenced traits emphasized in the program. Whereas seven responses specifically used the names “Learner Profile,” “TOK,” or “CAS,” most recalled the overall importance of being tolerant, being respectful of others’ opinions, thinking critically, and working hard as core values promoted during their experience in the program.

Impact on Post-Secondary Pursuits

The second research question asked participants in what ways they felt participation in IB contributed to their post-secondary life. To assess this, the researcher asked participants to consider whether or not IB influenced post-secondary decisions, what skills were or were not useful in those pursuits, and in what areas the individual felt more or less prepared following graduation from IBDP. Two major themes emerged from this research question: influences on post-secondary decisions and degrees of skill attainment. In general, participants noted that IB indirectly influenced college and career choices and they felt prepared with skills needed for both college coursework and the work force.

Influence on University Attendance

The first theme, influence on post-secondary pursuits, included how participation in IBDP impacted participants’ decisions to attend university as well as their career choices and decisions. Most participants in the study revealed that even before joining the IB program, they planned to attend a university so the program did not directly influence their post-secondary decision. However, several participants cited the fact that while they always intended to go to a university, and IB opened doors to a variety of post-secondary options, unanticipated opportunities, and skill acquisition that may not have been available before participation. For example, one subject said:

I believe that I would have attended university regardless of whether or not I had participated in the IB program but I do believe that the IB program brought me to a more rigorous level of study than I would have pursued otherwise.

Others identified the role IB played in their college admittance. One participant said, “IB did not greatly influence my decision to attend a university, except to reinforce the idea that I wanted to attend college. However, I believe that IB did help me get into college.” Another student stated, “I had planned on going to university regardless of the IB, [sic] I do believe that the IB gave me many more options in terms of where I could attend university.” And, finally, one student shared, “IB did not influence my decision to attend a university, I would have attended regardless of the program I was in. That being said, IB may have provided me with a leg up when applying to Stanford.”

Others acknowledged that participation in the program opened their eyes to different perspectives and opportunities. One noted, “[I] already was very definitely planning on attending a university. But I would say that IB made me feel more inclined to go to a liberal arts school, and to generally pursue a more rounded education.” Another student credited the program with inspiring her to find a “more prestigious university in order to be intellectually challenged by the school.”

Three participants specifically referenced potential college credit as an outcome of the IB program that influenced their post-secondary pursuits. One said:

I believe I would have attended a university regardless of my participation in the IB program. However, my choice of universities (CSU) was influenced by the fact that CSU offered to accept around 60 credits worth of transfer credits, most of which were from IB coursework/exams. This meant that I was able to pursue multiple degrees in less time (because I had already met certain course requirements). The IB transfer credits played a big role in my decision to attend CSU.

Another student mentioned that the credit awarded from IB exams and coursework made it possible to graduate a semester earlier than expected. The third participant echoed the benefit of earning credit and stated:

I suppose I primarily chose to attend college because I knew I would be getting so many credits from the DP and AP tests. I also assumed that at least the first few years of college would be easier on us because we had been taking entry level college courses since 11th grade, and this proved to be true.

The cultural and social complexities associated with university admittance were highlighted by three participants who acknowledged their lack of choice due to issues of race and class. While this study did not collect demographic data on race, ethnicity, or socioeconomics, the responses by some indicate these were factors in the decision to enroll in IB and a university.

One participant said:

Due to my family's social class and my filial expectations, I'm not certain that not attending a university was an option that I gave much consideration However, the IB program was one of the reasons that I think I adapted quickly to the rigors of the university curriculum.

Another participant noted the privileged implications of a family history of scholars that left the participant with no other option than to continue the tradition. "My parents, and their parents, went to college. That I would, too, was a matter of fact—the privileged and racially nuanced nature of which I'm completely aware." A third participant was also influenced by family tradition and expectations and recognized the skills acquired in IB provided additional benefits:

Honestly, going to university was always part of my plan [sic], my mother and I always spoke about the day I would go to university. IB helped me get accepted into the universities I applied to because it focused on college preparation, building skills for college classrooms, requiring projects that helped strengthen my college entrance applications.

For these participants, complex issues of cultural and social expectations dictated university attendance and participation in the IBDP was a secondary benefit for skill development.

On the other hand, four individuals spoke critically about the IB program's influence on their post-secondary pursuits. For one participant, the culture of IB did not allow for optional university attendance: "In IB, it didn't really seem like there was the choice not to attend. Everyone around you was going and talking about their applications." The criticism of the culture was echoed by another participant who stated:

Time and experience have altered one aspect of IB's influence about my desire for a college education—that question of WHERE. In my class—and this may vary from class to class—anything less than Ivy League or private, prestigious university was second-best. Going to school in state or even, God forbid, a community college? You didn't even dare talk about it. No scholarship? You didn't do enough. There was entirely too much shaming. There was entirely too little encouragement to be anything other than a traditional, super-intelligent yet utterly clueless college freshman.

In the previous responses, the culture and cohort of IBDP created a restrictive environment wherein participants felt they had no option but to attend a university. For another participant, the academic pressure of the IBDP created an environment that negatively impacted future desires to attend university because,

I felt burnt out after the IB program and was not interested in taking any more classes. Eventually I realized I had been in denial about college or any other plans and I hadn't thought too much through. I come from a very academic family so felt pushed into university.

For another participant, the pressure was self-imposed, yet the consequences on the desire to attend the university were similar. This participant noted:

I'm a compulsive perfectionist, and I burned out in the IB program. Even though I was miserable throughout the program (I tried to drop out a few times), I think the greatest lesson I could have learned was to redefine happiness for myself.

Summary. Most participants in this study entered the IBDP with the intention of attending university after graduation. Whether it was family expectations or self-imposed

expectations, participants acknowledged that being in the program did not directly influence their choice of university attendance; rather, it provided the means for greater exploration of opportunities.

For some participants, the culture of the IB program that emphasized college attendance was a barrier to success. In fact, the expectation that all students attend a prestigious college paired with the rigorous course work left some participants feeling burned out on academics and less than confident in themselves. Responses did not indicate whether the expectations were communicated by staff and students or self-imposed and perceived by the individuals; nonetheless, participation in the IB program impacted university attendance both positively and negatively.

Influence on Career Choices and Decisions

In looking at the theme of influence on post-secondary pursuits, participation in IBDP impacted participants' decisions to attend university, as previously explained, as well as their career choices and decisions. Because the participants in this study were alumni of the IBDP, they were able to provide long term perspectives on how the program influenced their career and life choices. In general, participants felt the hard and soft skills taught or acquired through the IBDP indirectly influenced their career choices and definitely provided them with the tools needed to be successful in the 21st century.

For some participants, IB directly influenced their career choice, whereas others saw IB as having a subtle impact or reinforcing what they already wanted to pursue. Two participants saw a direct career influence as a result of the IBDP curriculum. One participant found that the curricular focus on other cultures and ideas had a profound impact on his interests and ultimately career path.

Yes, the international focus and how [the program] highly regarded international experience and cross-cultural exchange, has influenced my career significantly. Going through the IB program we were exposed to international perspectives and how important it is to learn about other places, travel if you can to see other places and ways of living, and learning to ask questions about other people's lives. In college, I studied international studies and built more on the foundation the IB program provided.

Another participant acknowledged the influence of specific skills like writing and thinking that were emphasized by the curriculum as having a direct impact on her career trajectory.

The IB program influenced my choice in career in a couple of ways. First, I was a relatively poor writer and analytical thinking when I began high school. The coaching on how to write . . . the lessons in how to structure an argument . . . and the lessons in critical thinking and fact based analysis all honed my writing and analytical skills tremendously. Because of that, I felt confident in my policy analysis skills at my previous job, and am successful as an urban planner, which requires copious amounts of analysis and writing.

For others, it was not curriculum in general that influenced career choices but specific courses. One participant, for example, credited the Higher Level (HL) History course with providing the foundation for her college and career saying, "The IBDP is where my passion for peace and conflict resolution started and I hope to use that in my career, whatever that is, going forward."

Similarly, HL Chemistry was cited by a student as a course that cultivated passion and provided the foundation for future studies.

I absolutely believe that IB influenced my career. I took HL chemistry and mathematics in the Diploma Program. I had designs of being an engineer and believed that I would likely be a mechanical engineer. After taking HL Chemistry, I had a desire to continue my studies in chemistry. At college orientation after being previously undecided on which engineering field to pursue, we were asked to say aloud which major we'd pursue when our names were called. I decided then to state my major as chemical engineering and never changed. I am now studying materials science and engineering in graduate school since it is the perfect nexus between my interests in engineering and chemistry and I owe a lot of it to HL chemistry.

While these individuals pointed to specific topics like internationalism or subjects like History that influenced their post-secondary pursuits, others felt that the influence on their career choice was more subtle. Whereas the first response in this section noted the international focus directly influenced college and career choices, this participant presented a less direct connection stating, “My interest in international relations, public interest work, and the law can be partly attributed to the perspectives and issues I was exposed to as part of the IB program. “

The indirect influence of IB is echoed in the response by the participant who found value in non-cognitive skills that led to life-long learning and embedded life skills.

I suspect that the IB program helped me to regard learning and research as natural faculties that I find it difficult to not engage in. The teachers in the IB program modelled an excellent learning community, and I’m hoping to remain embedded in similar types of discourse [in my current career].

Another participant similarly found the skills gained through participation to be instrumental in how she approaches situations and credits the IB with helping teach skills like perseverance and patience:

I feel that the IB program helped me to get significant training in rigorous study and I learned a great deal about hard work and time management. I feel that the program also teaches you to persevere and consider things from different perspectives. I often use the lessons learned during my time in the IB program to find a solution to a problem. If one way doesn’t work, I always have patience to pursue another way.

While the curriculum of IB did inspire specific areas of interest for some participants that translated into their career work, other responses indicated a broader connection between the curriculum and careers. For some, the broad connection translated to general career interests or preferred working environments rather than specific careers.

This participant, for example, found the curricular emphasis on multiple perspectives led him to pursue research through multiple lenses.

My fields of interest were not something that I really got into until I began my undergraduate studies. However, one thing from IB that really stayed with me was approaching an issue from multiple perspectives and situating topics in context. This was a theme that I remember being used in almost all of our classes and it made me more analytical and more willing to entertain and weigh alternatives. This led me to pursue neuroscientific research through multiple lenses—psychology, sociology, biology. In this sense, I think that the ways of thinking that I gained from the IB program have influenced my career by preparing me for a more analytical and inter-connected approach to understanding issues.

Another participant echoed the emphasis on multiple perspectives and life-long learning as aspects of participation that indirectly influenced his post-secondary pursuits:

IB somewhat influenced my career choice, but more so it influenced my desire to stay engaged with issues and interesting matters that do not necessarily have much to do with my current job. As I've moved through the stages of my career, it is progressively easier to get tunnel vision and lose the desire to pursue interests outside of what I deal with every day at work. IB encouraged a multi-disciplinary education and gave me the base educational tools to pursue interests outside my "wheelhouse."

Like the previous response, this participant found the multi-disciplinary nature of IB to be beneficial in creating a foundation for his current pursuits:

I don't know that the IB has influenced my choice of career very much. I studied electrical engineering and will one day work in the renewable generation space. I think that IB certainly provided a broad education and helped me to gain a knowledge base in lots of areas outside of math and science but I don't know that it affected my career interests very much at all. That being said, I don't know that it needs to. A high school education doesn't necessarily need to shape a student's career choices so much as provide a space to grow in a bunch of different areas.

For these individuals, participation in the IBDP indirectly provided foundational skills and interests that translated into future careers and interests.

A different perspective was provided by a more recent college graduate who noted that, unlike alumni who had graduated college, his experiences had not yet allowed him to reflect on the role of IB on his choice of career: "I suppose I don't really have my choice of career yet narrowed down so I can't really answer this question. It seems I am leaning towards

international work because I speak multiple languages and IB encouraged that.” Another student ironically credits IB’s broad education with leaving him without a career stating,

[I] don’t really have a career—maybe partly because of IB actually? I was always an English/writing person, but doing IB math made me respect math a lot more, how it challenged me.[sic] And I liked IB physics a lot. So I took a bunch of different classes my first two years at CU [University of Colorado Boulder], but a lot of physics and English classes.

Another influence on career and life choices was the confidence participants gained from being a part of and completing the IBDP. Self-efficacy, one’s belief in one’s abilities to succeed, was an indirect byproduct of participation and participants noted this in a variety of ways. One simply said, “I’m an entrepreneurial artist, and I think IB gave me the idea that I can accomplish impossible things.” Another participant elaborated on the development of confidence and said,

I believe my career choice was much more strongly influenced by my University experience, but up until I took my job I never really knew what I wanted to do (still don’t). However, after managing an IB course load from 14-18 years old, I left PHS with a newfound confidence in my capability and competency that meant I never shied away from an opportunity because it might be difficult. Learning to have intellectual stamina, discipline, time management and introspective awareness of how your mind works (TOK) at such a young age has been incredibly valuable.

The development of academic and life skills gained from the program, specifically writing and critical thinking, were associated with self-efficacy as indicated by this subject who said, “Rather than influencing my career choices directly, the IB gave me solid writing and problem-solving skills that set me up to pursue a variety of careers.” Another participant supported this saying, “...I do think that IB gave me skills—particularly critical thinking and writing—that will help me be successful in whatever career I pursue.”

Summary. The participants in this study reported that participation in the IB program influenced their career paths both directly and indirectly. Direct influences from specific courses inspired participants to delve deeper into careers associated with those topics and the development of academic skills useful in careers. Indirectly, the program influenced students to consider various viewpoints, persevere, and tackle large projects; all aspects of collaboration and tantamount to successful job completion and satisfaction.

Skill Attainment

The second research question in this study examined how IB contributed to participants' post-secondary life, and the previous section explained findings for the first theme related to this question: influence on post-secondary decisions. This section explains findings of the second theme—degrees of preparation for post-secondary life, specifically skill attainment and deficits.

Examination of the data revealed specific cognitive and non-cognitive skills gained from IB including: stress management, resilience, strong work ethic, collaborative learning, questioning, research and citation, and confidence. However, writing, critical analysis, and time management were most frequently cited as skills with solid preparation and relevant to participants' current pursuits.

Many participants recognized the value of writing, time management, and critical thinking as skills they use daily. One participant summarized the three skills in this way:

Writing skills—My peers struggle to put a couple good sounding sentences together and it comes second nature to me.

Time management—I remember getting to college and waiting for it to get hard. As it is, I work 4 part-time jobs, am starting my own business, am paying off a mortgage, and am a staple in my social community.

Critical thinking—I analyze everything and rarely struggle to see another person's perspective.

Writing Skills

A predominant skill gained through the program was writing. As seen in Table 4.1 (pg 70), thirteen participants referenced the writing preparation received in the IB program and noted how it prepared them for university coursework and career related tasks. Three participants specifically referenced the ease of freshman year as a result of their writing skills that put IB graduates at an advantage over others who struggled to write an essay. One participant acknowledged that because he did not have to struggle over writing assignments, he was able to put his focus into more difficult courses and challenge himself further.

Two participants acknowledged that the foundational skills in academic writing gave them an advantage in college because they did not struggle to craft a basic argument. One participant shared:

I felt very prepared for college after graduating from the IBDP. I felt very prepared to write in an academic environment. Knowing how to write my first semester of college was a huge advantage, [and] many kids struggled with how to structure essays and lab reports. I feel like I have grown in my writing ability, but I don't feel as though I've struggled with writing since I've been in college.

Knowing how to structure an argument in writing not only eased the struggle but also allowed this participant to apply the writing skills to a variety of genres:

Writing. Writing. Writing. I credit the IB program with teaching me how to write. To this day I feel that the IB program taught me all the necessary skills and gave me the proper tools to be able to write. Currently, as a law student I am learning how to write for the legal profession, which means adapting those skills I first learned in the IB to fit the new types of writing that I am doing now.

Time Management

The second skill attained and frequently referenced by participants was time management. In general, time management skills were not explicitly taught but rather embedded in the numerous assigned projects and deadlines which encouraged short-term immediate

deadlines and long-term goals. One participant specifically acknowledged time management skills learned from the IB program. The participant,

learned a great deal regarding time management from my time in the IB program—which prepared me to work hard throughout medical school/bachelor’s as my program of study had a year round curriculum fairly similar to that of IB’s.

Another participant credited IB with providing excellent time management skills so that to this day he has not encountered anything that demanded quite so much time and effort.

Critical Thinking

When participants were asked if they use any of the IB skills in their current situations, one participant said she uses critical thinking every day:

The skills that I developed in the IB program—writing and critical analysis, especially—are things that I use every day. I studied in several fields before finding one that I wanted to pursue, and the IB program gave me the breadth to transition seamlessly between them.

Another participant acknowledged the everyday importance of this skill saying, “IB’s insistence on questioning where knowledge comes from and maintaining self-reflection and integrity in making knowledge determinations is important for my career and life as a whole.”

One participant said that question and analysis, which are attributes of critical thinking taught in the program, were deeply instilled in her:

I still ask questions. Lots of them. I don’t take what I see for granted. I am still a decent writer. I still view issues from multiple perspectives, though I feel I have done that for most of my life—IB honed to skill-level a tendency I already had.

Echoing the idea that IB honed skills such as questioning, one participant stated, “During our senior convocation, I was called out as being very compassionate and I still think about that.

IBDP focused so much on critical thinking and challenging assumptions that it became second nature for me to question everything.”

Summary

Participants reported feeling well prepared for post-secondary pursuits specifically in the area of writing, time management, and critical thinking. These three skills were most often mentioned as relevant to current pursuits and participants felt the program prepared them well with these skills. Additionally, these were areas in which participants felt they had an advantage over their peers because of the high level of preparation they received during the program.

Emerging Skills

While many responses cited specific cognitive skills such as those mentioned above, others referenced the attainment of non-cognitive skills as tantamount to their experiences in the program. For three participants, life skills and the added confidence that came from participating in the program stood out. One noted the short and long term benefits of participation saying:

IB gave us a deep sense of appreciation for writing styles, intent, history, and so forth, and I still love to annotate any book I read. I appreciate how we, again, learned to approach situations with a critical eye, considering the source and evaluating opinions or anything, as I think this is a good life skill for anyone to have. In a general sense, sometimes when I get stressed or feel overwhelmed, I remember how we felt during the last few weeks of senior year, studying and preparing for finals, and use that as a comparison for my current course load and feel reassured that I have been well prepared.

In an interview, another participant provided this perspective on how the program developed his self-awareness and confidence:

Studying, synthesizing information, writing long papers, learning to read quickly and the cycles of reading and writing prepared us for success. We learned the soft skills associated with how to “best it out.” Like the EE—it’s repetitive and allows you to learn how you learn so by the time you go to college you know what works. You have self-awareness that others don’t have. You get the learning over earlier so you have a leg up.

Both of these participants recognized the value of the high school IBDP activities and events in preparing them for future life experiences. Similarly, a third participant recalled gaining confidence in her abilities as a result of involvement in the IBDP: “I learned what it feels like to

create something for which I worked hard, of which I am immensely proud. I can apply myself to an unfamiliar topic, interact with resident experts, and become proficient.”

Additionally, the ability to work with others and be part of a strong community emerged as outcomes of participation. Participants repeatedly noted that being surrounded by students who shared motivations and experiences was inspiring. One noted, “I gained a strong appreciation in being surrounded by people who were excited to learn and motivated to do so.” And a second participant said, “Working hard. I was surrounded by peers and mentors who were pushing limits and striving to be at the top. It was a very challenging program that made college feel relatively ‘easy’.” In an interview, one participant said, “I feel more motivated by people who inspire you and IB has that. When not surrounded by that, it’s hard to be motivated.”

By comparison, one participant noted that her current job situation was unsatisfying because of a lack of collaboration:

Currently I am not satisfied in my job because a nurse is always a physicians’ subordinate. I do not have the joy of collaboration, research, and creation that I experienced through IB. And yet, I know that I am capable of these things.

For others, the cohort culture was part of what helped develop skills that translated to post-secondary pursuits. One participant shared,

Undergraduate level coursework was very manageable in comparison. The community involvement the IBDP required, the Higher Level art show, and the examinations prepared me extremely well to thrive academically at university. I found that, in comparison to my peers, I was accomplished at public speaking, organizing group projects, and preparing for exams. I also discovered that I had developed a broad knowledge base for both the sciences and humanities. However, it wasn’t until after I graduated from the IBDP that I really learned healthy coping strategies for my depression and how to intentionally create a sustainable work-life balance.

Summary. This study asked students to reflect on ways in which the IBDP contributed to participants’ preparation for post-secondary pursuits. The majority of participants recognized the cognitive skills such as writing, time management, and critical thinking. What they also

noted, however, were the non-cognitive skills that emerged as a result of the development of the foundational academic skills: Confidence in one's abilities to successfully complete tasks, importance of a supportive cohort, and collaborative working skills emerged as outcomes of participation in the program that were not initially considered at the outset of this study.

Skill Deficits

Although participants in general felt the IB program prepared them for post-secondary pursuits, seven responses cited areas where they felt less prepared or where the program could improve. The seven responses fall into two main themes: content specific deficit and social skill deficit.

Content deficit. One participant addressed the general lack of content instruction in educational institutions, including PHS IB, stating, "As a criticism of education in general, I felt unprepared for things such as managing finances, current politics, things like that." Another stated that he felt underprepared in math, physics, and computer science, specifically:

I was one of the best in the IB class in math and physics but found myself to have much less experience and exposure than some of my college peers with similar interests. I also had never seen any computer science in school and jumped in to an engineering department where many students had been coding for years.

For another student the lack of math preparation was identified as problematic in successfully completing the entrance exam for graduate school. This participant said:

I did note a deficit in my lower-level math skills when I prepared for and took the GRE, and did not remember learning much of the material covered. While I had a good understanding of calculus and other processes, my basic algebra and trigonometry skills were subpar. This could be attributed more to the delay between my time in the IBDP and the time I took the GRE, and I may just not remember covering these skills in the program.

Social skill deficit. A lack of social preparation and awareness of one's place in society was also addressed as a deficit of the PHS IBDP program. The experience of one participant, in particular, illustrates this missing component:

College was academically easy for me, but socially difficult. My freshman year I developed an eating disorder, and the depression and anxiety I had begun to experience in high school became much more pronounced over the subsequent 4 years. IB helped me to internalize very high standards of achievement, but not the mechanism to recalibrate after failure. I felt intellectually very capable, but also extremely stressed because I couldn't discern between critical and non-critical obligations. My self-care sucked. In my experience, IB was an amazing opportunity for intellectual development, but I emerged somewhat unbalanced; I hadn't even held a regular job!

Another felt prepared with adequate study skills for university coursework but shared, "I felt less prepared to relax and explore the world around me (i.e. let loose and have fun), as I was used to dedicating my time to my studies."

For two participants, rather than the IB cohort being positive as in previous responses, they said it was detrimental because it led them to believe they would always be surrounded by motivated, like-minded individuals. Then after graduation, they felt unprepared for the realities of post-secondary life and interactions. One said:

You are fairly sheltered in the IB program. I definitely went out of my way to get out of the IB crowd and had lots of friends not in IB but it still was a surprise when afterward I was not constantly surrounded by people that were "star students."

And another participant suggested that IB students need to interact with the "general population" so that they have experiences with students from different backgrounds because,

The IB population bell-curve is strongly skewed towards people with any combination of intelligence, ambition and skill sets that result in high-performance humans. I went to a University with a normal distribution bell-curve of humans in terms of intelligence, ambition, organizational skills, etc. I now work at an office place with a normal bell-curve of humans. IB does not adequately prepare these high-performance students for what it's going to be like in the real world trying to generate high-quality results with people who may on average have less ambition, skill sets, or intelligence than your average IB classroom.

Summary

While participants generally felt confident in their academic preparation after participation in the program, a third of the participants identified deficits in content instruction and/or social skill preparation as areas of growth for the program. Specifically, both foundational and advanced math instruction and basic life management courses were referenced as not explicitly taught or offered at the high school. For the participants in this study, the addition of this content would have been beneficial. Additionally, exposure to a broader student population would have benefitted several participants who felt ill prepared for navigating the realities of and variety in society.

Value of the International Baccalaureate Program

The third research question asked if alumni felt their participation in the program was of value. To determine this, participants were asked to reflect on memorable moments, consider what motivated them to continue in the program, and whether or not they would personally recommend the program to others. In general, participants stated that it was a valuable experience both because of and in spite of the demands. A few participants, however, had reservations about whether the program would be valuable for all students.

All 20 participants reported feeling that the program was of value to at least some degree. After examining what participants acquired from the experience, three general themes emerged that are interwoven in many responses: (a) academic and life skill development, (b) confidence and pride, (c) supportive culture of teachers and peers.

Academic and Life Skills

For seven participants, the value of the program emerged in the academic and life skills obtained from participation. One response cited a specific English course and teacher, identified as “Mrs. X,” for developing valuable academic skills:

A memorable moment that I have from my time in IBDP is in my 12th grade HL English course with Mrs. X—we frequently had open class readings and Socratic seminars and I felt that I was able to really develop my skills in articulation and analysis during that course. Mrs. also X provided me with valuable feedback to improve my writing that year—and I still think about her advice whenever I sit down to write an analytical paper.

Another participant found that the program as a whole ignited an intrinsic motivation because it generated an increased curiosity: “Even when I was struggling with the amount of work required. I felt that I was actually learning important things and I started to see improvements in my abilities (analytical, writing, math) that encouraged me to continue.” A third participant recommended the program acknowledging the long term value of acquired academic skills:

I hate to speak ill of my own undergraduate students, but it’s painful to see that some of them struggle with writing and formulating arguments (and there isn’t a very good system to remedy this at the university level). This is certainly not their fault (this generation seems not to prioritize reading and the public school system in my state is inconsistent), but I’ve been especially grateful to the IB program lately. Moreover, and I hate to be repetitive, but I use the skills I started developing in the IB program on a daily basis and they’ve been invaluable as I have pursued my current career.

Acquisition of life skills, not just academics, were valuable outcomes for at least three participants. One said, “I don’t believe that the IB program is for everyone, but it does teach many important life skills and produced hard-working students to enter the world.” With regard to the Extended Essay, specifically, this participant acquired resilience, noting:

Writing the personal essay and doing my own ‘at the source’ research was fascinating and changed the way I accepted experts and sources. It was also a great lesson in having your own thoughts proven wrong and learning to accept that as part of the process and not a failing.

Lastly, one participant summed up the life skills she attained by saying,

Not only did it [the IB program] challenge me academically and teach me to be a better student, it helped me to become more conscious and self-aware person [*sic*]. I think the traits that IB fosters in students are important for all aspects of life.

Summary. Participants in this study indicated that the education they received in IBDP provided academic and life skills that were useful later in life. The ability to write, think critically, and have academic knowledge were cited as well as non-cognitive skills such as perseverance and curiosity. These skills allowed participants to feel and be successful in post-secondary pursuits.

Confidence and Pride

The third theme that emerged from the final research question looking at alumni perceptions of the value of the program is acquisition of confidence and a feeling of pride. In this study, nine participants specifically recognized the added self-confidence and sense of pride they felt after being in the program.

The IB required cumulative projects and assessments provided the opportunity for students to showcase their learning, and as one participant said,

The oral exam for the Higher Level art show was memorable for me because I got to see the fruits of two years of dedicated work all in one place. It was empowering to make decisions about how to display my work and then to experience public appreciation for what I had created. On top of that, having a meaningful dialogue with my examiner made me feel like an expert at something, which I think is rare for high school students.

Another participant recalled a series of cumulative IB projects:

I remember the cumulative projects. I remember the care with which I set up my senior art show, surrounded by my work, feeling for the first time like a legitimate artist. I remember turning in my bound, laminated, beautiful Standard Level Math Stats project, which had pages of equations proving correlations and conclusions for data I had collected myself, and about which I actually cared. I remember earning a 42 on my final exams, which is memorable partly because that number is arbitrary to me now, and then meant near perfection.

The senior art show referenced in the previous response elicited similar emotions for two other participants who recalled setting up the senior art show and being “surrounded by my work, feeling for the first time like a legitimate artist.” Another participant said, “I had my exposition for my HL Art class and everyone had their art pieces up in the gym. We each got interviewed and I felt so proud and accomplished looking at my little gallery of art pieces.”

Another cumulative project that inspired self-confidence and pride was the Internal Assessment in English where the instructor asked the participant questions about specific aspects of the text.

A memorable event during my time in IBDP was when I gave my first internal assessment in English the first semester of my IBDP career. I remember my teacher asking me questions about why metaphors in Annie Dillard’s *An American Childhood* were an appropriate literary device for what the author was trying to communicate. This was memorable for two reasons. The first is I was shyer in that time in my life and I had some adrenaline from presenting and being pushed to think deeper at the end of my presentation. The second and more important reason this event is memorable is because I felt like I grew and gained a better understanding of how literary analysis worked.

For the previous participants, a single, memorable event influenced their sense of self-efficacy and they took great pride in their accomplishments. Another participant reflected on the entire experience and the joy of completing the program.

Honestly the overwhelming sense of accomplishment at having completed the whole of IB at our IB graduation at the Lincoln center was one of the highlights. Having teachers come from elementary and middle school to see us and to be able to reflect on all the accomplishments meant a lot.

Others felt the immediate value in completing the program and added long term benefits as reflected through their experiences. For example, this participant stated that as a result of the program:

I learned what it feels like to create something for which I worked hard, of which I am immensely proud. I can apply myself to an unfamiliar topic, interact with resident experts, and become proficient . . . I have created big, successful projects in the past, and know that I can do it again. I have the tools.”

Another participant echoed the long term value of pride and a sense of accomplishment gained through the program stating:

I believe my career choice was much more strongly influenced by my university experience, but up until I took my job I never really knew what I wanted to do (still don't). However, after managing an IB course load from 14-18 years old, I left PHS with a newfound confidence in my capability and competency that meant I never shied away from an opportunity because it might be difficult. Learning to have intellectual stamina, discipline, time management and introspective awareness of how your mind works (TOK) at such a young age has been incredibly valuable.

The value of metacognition, as mentioned in the previous response, was central for another participant who spoke to the importance of the curricular structure in IB. In an interview, this participant stated that IB curriculum simultaneously has a lack of structure paired with a set curriculum. The Personal Project in Middle Years Program and the Extended Essay in the Diploma Program are two examples where students are given parameters to complete the task, but the topic and execution are solely up to the individual. For this participant, that pairing forced the development of metacognitive skills and was beneficial for life long pursuits. He noted:

More and more I'm recognizing the value of, sort of that lack of structure, almost, like with the Personal Project, paired with the opportunity to independently create something. Then, combined with the fact that the program provided structures and distinct opportunities in different areas for kids to be able to do that. I think trends in education are sort of heading that way . . . not just opportunities out of the textbook but opportunities to create things on their own that no one tells them to do. Opportunities for people to really light up on things they're passionate about and rise up out of that. Career value is added in lots of different, unique ways. Some of my most memorable moments in college were times when I carved out my own opportunities and IB helped me carve out those opportunities and develop my passion.

Summary. Participants in this study acknowledged the impact of cumulative projects, assessments, and final completion of the program as contributing to their own feelings of accomplishment. By completing independent and group tasks, participants felt a sense of accomplishment and pride that were favorable and valuable long-term outcomes.

Supportive Culture

When asked why participants stayed in the program and whether or not they would recommend the program to others, 16 participants responded that the supportive culture was their motivator to stay in the program, was part of what they remember most, and was the reasoning they would recommend the program to others. This sentiment was shared by this participant:

I was motivated by my peers to continue the program more than anything. It was something I put a great deal of value in and thought completing the program would help me get into college, so even when it was difficult I was invested in completing the program and taking those final exams for the diploma. Having other students around me who were also invested in the program made it a lot easier to continue. We were in it together and it really felt that way by the end of our four years together.

The comradery created and experienced by those in the IBDP influenced many participants to continue in the program even during stressful times. This participant emphasized her intrinsic motivation and the personal importance of the cohort saying:

I was initially disinterested in the program and was initially pushed by my parents. After beginning the program I was motivated to continue by the great friendships that I made in the program and also my insatiable desire to continue to learn. My friends and I kept one another going through the difficult times. I also wanted to continue to push myself. If I had unenrolled from the program, I would've felt that I wasn't pushing myself to be the best that I could be and that is one thing that has always motivated me.

Another participant agreed that the comradery was important in creating an environment that was safe and supportive.

I personally do not feel I could have gotten a better education in Fort Collins, and loved the comradery that us IB students had by being in all of the same classes together. Being an individual student in such a large school as Poudre High School would have been difficult, and I am grateful that I had a community of such intellectually curious students along for the ride with me.

The intense emotion related to being part of a group of supportive students was echoed in a participant's recommendation of the program.

I would and do recommend the IB program to others. It was a great experience for me and feel like it has shaped the person I am today. I made great friends who I am still

close with through participation in the IB program. It was difficult but not anything I couldn't handle. I felt ready for college when I got there and for that I am grateful.

For one participant, the entire experience in IBDP was memorable and the cumulating graduation ceremony illustrated the significance of the supportive cohort:

I remember the final senior convocation and the celebration we had directly after because it felt like a family saying goodbye and good luck to each other. We grew so close as a senior class, that final event together was very memorable for me. We had our futures planned out, or so we thought, and were ready to take on the world. Knowing we had such great friends who supported us no matter what helped us transition from high school to college. We had completed our IBDP exams and felt confident in our abilities to take on college material or whatever else we wanted to do. During the event we got to tell stories and celebrate each other with our families, friends, and mentors present. I'll always remember that night because it represents for me the end of high school and beginning of everything else.

Three participants specifically mentioned the impact of the teachers in creating a supportive culture that was valuable to them. One participant fondly recalled teachers as "caring, intelligent, passionate individuals" who contributed to a culture that enabled her to succeed.

Two others distinctly recalled events in their lives where the IB teachers were instrumental in providing needed support. One student described a traumatic event and the subsequent support she received from an IB teacher:

I went to speak with the head of the IB program about it. She was not only supportive, but had the ability to let my teachers in on what was going on with me without having them pity me. My healing needed a community and because of IBDP, I got through it and moved on.

Still another participant recalled a scheduling conflict with athletics and the exams at the end of the school year that required support from the IB director identified as "Ms. X":

One memorable event that I have is at the end of my junior year. I was competing in the state swim meet for Poudre at EPIC (the local public pool, Edora Pool and Ice Center) and my SL (Standard Level) psychology paper 2 exam was scheduled for the same time. Ms. X was generous enough to move the exam time up by an hour for the entire class to help accommodate me making the competition. I remember doing well on the exam, running out after the conclusion to my father's car in the parking lot. We sped across town where I changed into my swimsuit in the car. My coach was on the phone for the

ride and it seemed like I'd be close to making the 200 free prelim race. Arriving at EPIC I ran in at the last possible moment while stripping my clothes off, was announced and walked right onto the blocks and swam my race with no warm up. It wasn't my best time but it was a memory that I'll never forget. The balance of swimming and academics was one of the best parts of my high school experience.

Summary. The majority of participants in this study referenced the role of the PHS IBDP cohort and community in creating a memorable, thus, valuable experience. Specific recollections of events and the efforts of staff members reflect the importance of a culture of support for the participants.

Participant Reservations

While the majority of participants said they did value the program and would recommend the program to others because of the aforementioned outcomes, four couched their recommendations suggesting that the program may not be for everyone. One participant simply said, "Some people thrive in IB. Some people die." This was also supported by the participant who said that the recommendation would go to anyone driven enough or smart enough to handle it. Another participant stated,

IB is not one-size fits all. Not being a good fit doesn't mean you're not smart or intellectual. I can't stress that enough. I would recommend IB to someone ultimately interested in pursuing math, science, or medicine because it's such a good "big-picture" foundation for someone who's going to have really restrictive course requirements later on. I do not recommend it for someone interested in developing a life outside of school. I do recommend it to someone interested in making school their life.

The fourth participant provided more explanation for the reservation saying,

I think it's suitable for some and not for others. I would only recommend it on a case by case basis. I think it's a bit excessive in terms of work load, testing and pressure and is not necessary to generate the real value in IB which includes the thinking style, skills sets, self-awareness and discussions.

Summary. In this study, most responses indicated there was value in participating in the program because of the opportunity to be part of a supportive culture, the academic and life skills

attained, and the overall sense of confidence and pride gained after completing the program. The cumulative projects allowed students the chance to work with others and also showcase individual achievements, which created both a sense of community and pride—characteristics seen as valuable by alumni participants. However, it was also noted that though the program was valuable for some students, it may not be suitable for all because of the rigorous coursework and internal and external pressures.

Chapter Summary

This chapter reported the findings from data obtained by alumni from the PHS IBDP in order to determine the outcomes of an IB education. Data was analyzed and presented to provide information on what participants recalled being promoted by the IB program in terms of components and ideas. Data was also examined to determine what impact, if any, the program had on participants' post-secondary pursuits. Finally, this study presented data on whether or whether or not participants found the program to be of value.

In the final chapter, a summary of the study is presented and a discussion of the findings and conclusions from the study are offered. Limitation as well as recommendations for key stakeholders and future research are also provided.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter presents a summary of the study including the restatement of the problem, context, and purpose of the study. Then an overview of the data and methodology is followed by conclusions drawn from the findings of the study. Finally, recommendations for stakeholders and for future research are presented in the last part of the chapter.

Problem Statement

This study addressed the conflict between the benefits and risks of an International Baccalaureate (IB) education. Alumni perspectives from graduating classes of 2006-2014 provided data to evaluate this problem. The conflict between the benefits and risks arises because, though research supports the claim that participation in an IB Diploma Program (IBDP) prepares students with the knowledge and skills required to be successful in post-secondary pursuits (Bergeron, 2015; Conley, 2008, 2010), students enrolled in IBDPs cite high levels of stress and lack of social interaction as a result of the rigor (Shaunessy & Suldo, 2010). Thus, there is the question of whether or not the academic preparation is valuable in the long term.

Purpose of this Study

The purpose of this study was to examine outcomes of participation in the Poudre High School's IBDP from the perspective of alumni who graduated between 2006 and 2014. By surveying alumni, the quality and effectiveness of the PHS program was measured by monitoring and surveying what alumni accomplished and recalled in the years following graduation. The data from this study informs the existing IBDP program at PHS and allows faculty and staff to refine or reinforce existing practices.

Context of this Study

The existing IB program at PHS in Fort Collins, CO with emphasis on the Diploma Program (DP) in grades eleven and twelve defined this case. The study explored IBDP alumni perceptions of the results of participating in the program from the graduating classes of 2006-2014. This case was selected for study because of its intrinsic interest to the researcher who worked at the site and sought a deeper understanding of the student rationale for pursuing and attaining a diploma in the IBDP. Additionally, the researcher had access to alumni of the PHS IBDP because of existing databases maintained by the program and the researcher's role as director of the IB program at PHS.

Twenty alumni participated in the study with 17 completing an electronic, open-ended survey consisting of 11 questions and 3 completing semi-structured interviews.

Method

The researcher took a phenomenological approach with this qualitative study because it explored the reflections and lived experiences of participants. Participants' lived experiences in the PHS IBDP and their perceptions of how those experiences impacted their post-secondary pursuits helped to explain what the experience of IBDP was like, one of the central aims of the phenomenological approach (Creswell, 2009). Further, this approach was taken because of the assumption that shared experiences, such as participation in the IBDP, have a central essence that can be understood in terms of common themes. In this case, the study explored the experiences of IBDP graduates to determine what significance or value was or was not found in that experience. The descriptions of alumni experiences and the ways in which those experiences informed other aspects of their life shed light on the essence of the program and the outcomes of participation in that program.

To gather and analyze the data, random sampling was used to identify participants who then completed an open-ended survey. The sample included 20 participants with data from 17 surveys and 3 semi-structured interviews. Data were analyzed using a general inductive approach which included the following steps:

1. Raw data was first translated into a common format and the files were saved.
2. The text was read closely to gain an understanding of recurring themes.
3. Based on the recurring themes and the research questions, categories were created to organize the data. This step included coding, annotating, and categorizing words and phrases.
4. Once the categories were created, overlapping coding and uncoded text was further analyzed to determine what may or may not be useful.
5. The iterative nature of this approach requires continuous revision of codes and categories in search of new insights, contradictory views, or subtopics that get at the essence of the category and/or research (Thomas, 2006).

Research Questions

The research questions this study addressed were:

1. What do IBDP alumni identify as significant components of the IB experience?
2. Do alumni perceive participation in IB to have contributed to post-secondary life?
3. Do alumni feel their participation in the program was of value?

Significance of Study

The results of this study are useful for the PHS IBDP in two distinct ways: marketing and curriculum revision. To increase the student enrollment in the existing IBDP at PHS, data from this study on the long term outcomes will be utilized in the overall presentation and marketing of

the program to the public. More specifically, as PHS seeks to open access to the program, the information from this study will be useful in diversifying the student population attempting the IBDP. Additionally, deficits in the PHS IBDP, specifically related to the core components and social/emotional learning, may be addressed as a result of this study. Thus, this study is significant because it has the potential to directly inform current practices in the PHS IBDP.

Researcher's Perspective

This study began as a personal project to assess the current state of the academic program of which the researcher was put in charge. When the researcher became director of the IB program, she needed to examine what was and was not working in an effort to determine critical components. However, just examining the exam results proved to be of little use because PHS has consistently had high diploma pass rates suggesting the program was running smoothly and students were succeeding. Worldwide, 79% of students attempting the full IB diploma earn it; at PHS over the past 20 years the average passing percentage is 94% (IBO, 2016). While there is something to be learned by looking at differences between years, the consistently high pass rate did not provide the depth of analysis needed to determine what was working programmatically. Further, individual subject exam data revealed little because, once again, students at PHS performed well even in subjects that were challenging worldwide, such as Chemistry and Biology. For example, in 2016, the worldwide average score was 4.32 out of 7.00; at PHS, the average score was 4.60 (IBO, year). Based on this data alone, one might conclude that the PHS program was functioning properly and adequately preparing students for the IBDP exit exams.

However, exam result data do not provide insight to individual experiences or programmatic policies that influence teaching and learning. As director of the PHS IBDP, the researcher had the opportunity to hear stories from IBDP parents, students, and staff. Many of

the stories praised the program for successfully preparing students for college while others criticized the program for placing exorbitant amounts of stress and homework on students. The disparity between the success of the program based on exam results and the life experiences of individuals created the impetus for this study. To determine if program changes were warranted, qualitative data was needed on short and long term outcomes of participation in the PHS IBDP. Thus, alumni voices were sought to provide a perspective beyond the exam result statistics that would illuminate the strengths and weaknesses of the IBDP and the current program at PHS.

After analyzing the data from this study, the researcher discovered that the PHS IB program does prepare students for post-secondary pursuits and the outcomes of participation in the program go far beyond the scores. In fact, the outcomes deemed important by the participants are not easily quantifiable, making it all the more difficult to sell the program to prospective students and families who are all too familiar with the reputation of the IB program. While that reputation, and lure of prestige and college credit, will get the families in the door, this study confirms that what will keep the students in the program is the culture of PHS, the culture of the IBDP cohort, and the support of staff to help students accomplish tasks along the way.

The challenge following this study is to articulate those outcomes in a meaningful way so that students, parents, and staff are assured that the outcomes of the IBDP are valuable, attainable, and worthy of the time and effort involved. This is a much more ominous task than merely reporting scores; however, it is also more important and valuable for all involved.

Key Findings

The analysis of the data revealed six key findings, which are expanded upon in the next section. Table 5.1 is replicated from Table 4.1 on page 70 and provided the foundation for the

synthesis of the key findings. Table 5.1 below provides a summary of the findings in relation to the research questions, descriptions, themes, and number of references to each theme.

- The demographics of the PHS IBDP mirror those of IB programs nationwide in terms of who enrolls, student motivations for enrolling and continuing, and paths pursued after graduation.
- The core components had a perceived significance as defined by this study, but not direct influence on most participants.
- Overwhelmingly, participants felt well prepared for post-secondary pursuits in areas closely aligned with the college ready skills identified in the literature; however, they felt less prepared with social and emotional skills.
- Participants felt that overall the program was of value, with the outcomes paying off in the long term.
- High levels of stress, although prevalent in the literature, were not a major concern for participants in this study.
- While participants generally recommended the program to others, they cautioned against recommending it to all students.

Table 5.1
Themes With Descriptions and Number of References

Research Question (RQ)	Description	Theme	No. of times referenced by sources
Demographics	Motivations for joining	Parents	5
		Friends	7
		Challenge	6
RQ #1	Recollection of significant components of IB program as identified by IBO	Learner Profile	2
		Theory Of Knowledge	5
		Creativity, Activity, Service	2

		Extended Essay	1
		TOK & CAS	1
	Recollection of values Promoted by IB program	Open-mindedness—direct reference	6
		Open-mindedness—derivations of term	9
		Critical Thinking	9
RQ #2	Influence on post- secondary pursuits	University Attendance— reinforced desire	14
Part I		Career Choice—direct influence	3
		Career Choice—indirect influence	8
Part II	Skill attainment/deficit	Critical analysis/thinking	9
		Writing	13
		Time management	4
		Confidence in abilities	3
	Emerging skills	Collaborative skills	5
		Content deficit	3
		Social skill deficit	4
RQ #3	Value of participation	Cohort/supportive culture	16
		Development of skills	7
		Pride & confidence in abilities to complete tasks	9

Conclusions & Discussion

Demographics

The participants in this study were categorized only by year of graduation and gender; no socioeconomic, ethnic, or racial data were collected because that was not the focus of the study. General background questions on the survey asked participants to identify motivations for entering and continuing in the program and post-secondary plans or paths. The results of this data revealed that most students entered the program and continued because of parental or peer pressure and a desire for academic challenge. For some students, their parents were aware of the

rigor of the program and knew there were benefits to college acceptance. Others cited the desire to be challenged and surrounded by students of similar mind sets as a reason for entering and staying in the program. Both of these concepts are supported in the literature that shows IBDP, in particular, tends to attract college bound students from families who are aware of the program and the college preparatory benefits (Bailey & Karp, 2003). Like the participants in this study, Hertberg-Davis and Callahan (2008) found that participants joined the Advanced Placement/IB programs to challenge themselves; students continued because they felt the program provided the best education offered by their high school.

Additionally, 17 of the participants in this study immediately enrolled in a university after high school graduation and two others enrolled following a gap year. 19 participants graduated or were on track to graduate from the university with at least a bachelor's degree and four continued their education with a PhD. One student did not complete an undergraduate degree. Bergeron's (2014) study supports these statistics showing that IBDP students enroll, persist, and achieve in post-secondary institutions at a higher level and rate than those who do not complete the IBDP.

Table 5.2 further explores the demographics of the participants in this study and illustrates the overall percentages of earned degrees among the 20 participants. This information demonstrates that the majority of those who participated attended and completed at minimum an undergraduate degree from a university with 40% attaining a post graduate degree.

Table 5.2
Participant Degree Summary

Number of Participants	Highest Degree Attained	Percentage of all participants
11	Bachelor's	55%
2	Master's	10%
6	Terminal Degree, PhD, MD	30%
1	Did not graduate	5%

When asked what influence the IBDP had on participants' choice of university or career, most participants in the study acknowledged the influence was subtle, not direct. The majority of participants intended to go to the university prior to entry in the program and the program provided skills that allowed them to feel confident and successful. Several participants noted the program impacted their way of thinking, and IB's emphasis on internationalism led nine participants to pursue careers in internationally related affairs.

However, the majority of participants felt a primary impact of participation in the program was the development of critical thinking and open-mindedness. Participants also felt they were better able to consider various viewpoints and analyze arguments and able to communicate orally and in writing with people from various backgrounds. These findings are not surprising especially in light of the research like Wright's (2015) in-depth, qualitative study with IBDP alumni. In Wright's study, participants felt there were academic and career impacts, but there were more subjective and lasting impacts on dispositions and social values including broader perspectives on the world, critical thinking, and positive feelings toward lifelong learning

The demographic results of this study support existing research on IBDP student populations across the nation. As Bailey and Karp (2003) and Hertberg-Davis and Callahan (2008) stated, students tend to enter DP with the intention of honing academic skills for university admission and success; their intentions and motivations are established before they begin DP coursework.

For the researcher, this finding led to an interesting discussion about correlation versus causation when considering outcomes of participation. At PHS where the diploma pass rate averages 90%, are the students passing and successful because of the quality instruction they receive while in the program? Or, are they successful because they enter the program with inherent skills and motivations that lead to their success? The answers to these questions are not easily defined but do warrant consideration. This study examined the outcomes of participation in terms of whether or not participants felt the experience was of value and if they were prepared for post-secondary pursuits. It did not examine the relationships between predisposition of participants and completion of the program. Further research on the topic would be useful for analysis of demographic data.

Significance of Core Components

The first research question this study intended to answer was what participants remembered about the values promoted by IB, and subsequently, their reflections on the importance of the components on life experiences. For this study the researcher did not specify the core components because the values inherent in IB manifest in successful completion of the core components—theory of knowledge (TOK), extended essay (EE), and creativity, activity, and service (CAS). Instead the survey question read, “What types of core values do you remember as being promoted by the IB program?” This question was of interest to the

researcher because to obtain the full IB Diploma, students must complete the core requirements. Anecdotally, though, as IB Director, the researcher experienced inauthentic student participation in TOK, CAS and EE, calling the purpose of the components to question. Were they merely additional, unnecessary work or truly valuable to the attainment of skills and beliefs? The survey question noted above was designed to illuminate this question. The answers to the question suggest that the components themselves did not have a direct impact on participants, but the values inherent were important.

Evidence of the memorable impact of the values is seen in participant responses that most often included being open-minded and tolerant, thinking critically, working hard and persevering. Few responses directly addressed the Learner Profile and/or TOK, CAS, or EE by name and those that did couched their references in generalities and uncertainty. For example, two students recalled that “TOK was great.” Another participant referenced CAS followed by, “I think that’s what it was called.” The EE was alluded to with a description of the assignment as, “an extensive personal and independent essay.”

One explanation for the lack of specificity in participant responses is that the degree of implementation of the components varies year to year and school to school. At PHS, for example, TOK traditionally is a scheduled one-year, instructor taught class; whereas, CAS and EE are independent projects done outside of the school day. Programs may choose how to deliver the content for CAS and EE with options including dedicated study halls, online modules supported by staff supervisors, or wholly independent student work with periodic support from a faculty advisor. TOK, although it is a content course, can be taught by any instructor who has undergone official TOK training meaning a math, science, or English instructor is qualified to teach the course. The curriculum provided by IBO offers schools the ability to implement the

components in the manner that best fits their program. The flexibility allows programs to individualize their curriculum to meet the needs of the students; it also creates inconsistent program implementation which may account for the variability of responses related to the actual naming of the components.

Wright's (2015) qualitative study of IB alumni supports this conclusion as Wright found that participants' experiences with CAS, in particular, were varied in relation to the implementation of the requirement in their program. For some students, authentic engagement in service activities was constantly promoted; others felt they were checking boxes to complete a requirement (Wright, 2015). Similarly, according to a report on TOK by the University of Western Sydney commissioned by the IBO, student perceptions of the value of the TOK course were split. The study concluded that though students acknowledged the impact of course content that encouraged critical thinking and open-mindedness, the methodology of delivery placed an over-reliance on classroom discussion and philosophical debate and had little perceived relevance (Cole, Gannon, Ullman, Rooney, 2014).

While the impact of the core components may not be direct, it is nonetheless noteworthy for participants in this study and in previous studies conducted by researchers like Wright and Lee (2014) and Conley (2014). Wright and Lee (2014) reported that "IBDP-specific pedagogy was deemed conducive to the development of 21st-century skills, such as those set out in the IB Learner Profile" (p. 207), and that the "'Core Requirements' had the strongest potential to promote 21st-century skills" (p. 208) including cognitive skills, intrapersonal non-cognitive skills, and promotion of tolerance. Similarly, Conley et al. (2014) concluded that the core components allow DP students to develop skills that in turn prepare them for college more so than those who do not complete an IBDP. The developed skills include the ability to cope with

the heavy workload, rigor and expectations of college, as well as academic skills like writing, researching, critical thinking, and time management (Conley, et al, 2014).

In this study, participants noted that the values and skills promoted by IB through the components allowed them to feel prepared and successful for post-secondary pursuits. The emphasis on being open-minded promoted through TOK and CAS, for example, made them feel more comfortable with college discussions and unfamiliar situations. Others felt the focus on organization, time management, and strong work ethic allowed them to navigate college coursework because they had self-awareness about how to best approach assignments. Several participants saw value in the teaching of critical thinking and noted that because they were encouraged in IB to analyze ideas and information, they were prepared to make informed decisions and ask questions for clarification. Most participants in this study did not associate these values as outcomes of the Learner Profile, TOK, CAS, or the EE, leading to the researcher's conclusion that the components did not have a direct impact on participants but the values acquired were meaningful to the individuals.

Preparation

In Chapter 2, the researcher cited literature stating IBDP students acquired skills through participation in the program that were necessary to be college ready. In this study, alumni experiences were analyzed to determine their perceptions of preparedness for college coursework and post-secondary pursuits. Overwhelmingly, the findings suggest that participants did feel prepared with academic and life skills needed to be successful in college and in the work force.

Solid academic preparation as a result of participation in the IBDP was referenced by all participants in this study on PHS IBDP, with several commenting on the relative ease of their college freshman year. Students cited their writing, research, time-management, and critical

thinking skills as being useful in the transition, and they credited their ability to formulate arguments and write extended essays as giving them an advantage over their peers who struggled to organize their thoughts.

Numerous studies support these findings including those done by Culross and Tarver (2011) and Taylor and Porath (2005). Culross & Tarver showed that those who participated in IBDP “perceived they had a greater breadth and depth of knowledge, improved creative and critical thinking skills, and improved oral and written communication skills” (p. 234). The participants noted that the program gave them foundational skills for critical thinking, organization, time management, communication, and work ethic making transitions to university coursework manageable. Taylor and Porath also found that students in IBDPs gained a broader perspective of the world and a desire for life-long learning that allowed them to persevere in the university. The findings of this study on PHS IBDP alumni support Taylor and Porath’s findings as indicated by eight participants who actively engaged in international studies during or after graduation and participants’ commitment to understanding multiple perspectives as life-long learners.

Beyond the life skills and interests acquired through participation in the IBDP, the current study found that participants overwhelmingly felt academically prepared for university coursework. The work of Conley (2007, 2008), presented in Chapter 2, supports these findings. Conley defined four skills and strategies that make one college ready—key cognitive strategies, academic knowledge and skills, academic behaviors, and contextual skills and awareness.

Key cognitive strategies are the foundational elements that underlie various ways of knowing. In Conley’s (2008) model, the key cognitive strategies are problem solving, research, reasoning and argumentation, interpretation, and precision and accuracy. For participants in the

current study, problem solving or critical thinking and the ability to form reasoned arguments both orally and in writing were cited by the majority as areas they felt well prepared for once they entered the university. In fact, critical thinking was mentioned by 19 of the 20 participants as an area emphasized by IBDP that was beneficial in their college coursework. Several participants noted that after college graduation, they continued to use critical thinking skills daily in their career and in life. In relation to cognitive strategies and feeling of preparation, the findings indicate that participants in this study were college ready upon graduation from the PHS IBDP.

The academic knowledge and skills promoted by IBDP are key to the reputation and desirability of the program; they are also one of the key components of Conley's (year) model of college readiness. The findings of this study suggest that most participants felt prepared with necessary academic content knowledge, and skills like writing and research needed to be successful. Interestingly, the participants in this study who felt less academically prepared cited specific deficits in the math sequence at PHS. In the United States, states must meet content standards but each state develops their own curriculum sequence to meet those standards; therefore, the math deficit pointed out in the responses may be a result of state or district sequencing rather than the IBDP curriculum. Nonetheless, the majority of responses indicated satisfaction with the content knowledge attained while in the PHS IBDP.

Like critical thinking skills, the writing and research skills were overwhelmingly cited as academic skills promoted by the PHS IBDP program. Several acknowledged that the process of writing a college paper was simplistic because of the writing instruction in the IBDP that emphasized organization and argument development. Additionally, participants noted they were

able to transfer their knowledge of the writing process to career tasks including press releases, dissertations, and major articles.

The third facet of Conley's (2008) model of college readiness is academic behaviors. These behaviors include self-awareness, self-monitoring and self-control, as well as metacognition. Embedded in these behaviors are basic skills needed to be successful in post-secondary pursuits including study skills, time management, note taking, and task prioritization. The results of the current study suggest that the majority of participants acquired some degree of academic behavioral skills because of participation in the PHS IBDP. It is interesting to note that the recognition of self-awareness and metacognition was more easily defined by participants removed from the IBDP experience by five or more years. These participants recalled the stress of IB as simply hard work and saw value in metacognitive skills that enabled them to learn how to prioritize tasks and learn through failure. The responses from alumni of 2011-2006 who equated stress with hard work may be attributed to their broader life experiences which gave them perspective on high school experiences. The stress of IBDP, for example, may pale in comparison to finding a job, losing a job, getting married or undergoing a major trauma. Similarly, alumni have the benefit of hindsight wherein failures or struggles experienced in IBDP manifest in positive ways later in life.

For all participants in this study, regardless of their graduation year, the study skills learned in the PHS IBDP were important preparation for college finals. Further, the skills acquired through the examination and study process gave participants the confidence to handle multiple college and entrance exams with relative ease. In terms of self-monitoring, several participants noted that independent projects like the Extended Essay and Art portfolio were beneficial because they required extensive intrinsic motivation and monitoring to complete.

These cumulative projects and activities encouraged participants to work independently, make their own time lines, and monitor their own progress. Thus, according to this study, the researcher found the academic behaviors needed to be successful in college were promoted by participation in the PHS IBDP. Interestingly, the amount of time between high school graduation and completion of this survey influenced participants' perceptions of preparedness. For many participants, distance from high school allowed for application of skills on life experiences creating a broad perspective based on knowledge and understanding. Without this distance, participants did not have the same experiences to see how the skills influenced their life choices.

Finally, Conley (2008) suggested that to succeed, persevere, and earn a college degree, students need contextual skills and awareness that allow them to understand how college operates as a system and culture. These skills include self-advocacy skills to know one's strengths and weaknesses and social skills to communicate those with others. The researcher found that the participants in the current study were able to navigate the bureaucracy of the college system but were less comfortable with the social aspect of college. The findings of the current study suggest social skill development is an area for improvement within the PHS IBDP.

Whereas participants felt well prepared academically, they were less prepared with the social and emotional skills needed to navigate the culture of college. Ironically, the difficulties for participants in this study stemmed, in part, from the strong cohort of students and staff at PHS that manifested positively and negatively after graduation. In a qualitative case study of DP students about the social/emotional implications of participating in a DP, Foust, Hertberg-Davis, and Callahan (2009) found social/emotional advantages and disadvantages related to high performing students and the cohort formed by unintentional ability grouping. The social

advantages included improved class atmosphere, a unique bond among participants, and pride and self-confidence from completing the rigorous and challenging work offered in IB courses. The disadvantages were unflattering stereotypes of AP and IB students, a socially limiting workload, and stress and fatigue.

In the previous section, the researcher demonstrated that the current study supports the advantages of the cohort culture as presented by Foust et al. (2009). On the other hand, the disadvantages of the cohort found in the study on PHS IBDP are quite different. This may be explained, in part, by the fact that the study conducted by Foust et al. (2009) was of current IB students rather than alumni, and the social experiences are notably different. Studies on alumni perceptions of the implications of the cohort culture of high school are sparse making it an area for further research.

Participants in PHS IBDP, though, found that being a part of a cohort while in high school was incredibly positive because of the class atmosphere, unique bond, and the self-confidence. Once they graduated and became part of a larger school with more diverse communities, some participants reported feeling they did not have social skills to communicate effectively so they were out of place, unsafe, and unsure of themselves. One participant noted that while at PHS, he was academically in the top tier of his class; at the university he was merely average. Another participant said that being surrounded by like-minded, high achieving individuals in the PHS IBDP did not prepare her for the realities of college where students of all mind sets and achievement levels and desires were present. She was not able to understand or communicate with peers and found herself ostracized as a result.

While students felt academically college ready and were confident in their abilities to navigate the bureaucracy of higher education, they felt less prepared with the social skills tied to self-advocacy.

Value of Participation

Previous experiences of the researcher and studies about IBDP reveal the program requires considerable time and effort, and it can be stressful; thus, the third research question this study explored was the overall value of participation in an IBDP. To analyze whether or not subjects felt their participation in the program was of value, they were asked to reflect on a memorable event and explain why it was memorable, consider why they continued in the program, and why they would or would not recommend the program to others.

In general, participants fondly recalled events and activities from their experiences and the majority said they would recommend the program to others because of the solid academic and life skill preparation as well as the cohort culture of support. Numerous responses, on the other hand, cautioned against recommending the program to all students. According to the participants, the rigor of the program requires careful consideration by the individual to determine if the outcomes are worth the work. Research supports the idea that the program may not be for all students. For example, in a single study conducted by Hertberg-Davis and Callahan (2008) the researchers found that students who completed IBDP viewed the participation in the program positively because it provided them with an intellectually stimulating curriculum and encouraged perseverance. This same group of students, though, cited the rigidity of the curriculum, the lack of choice, and an inflexible pedagogy as negative factors that lead to added stress and are not appealing to some students. While participants believed there was value in participating in the program, it was not necessarily perceived as valuable for

all students. Individuals must consider if the program addresses individual learning preferences and strengths.

Long term vs. short term value. The majority of participants in the current study on PHS IBDP saw long term value in participating in the IB program beyond the short term acquisition of academic content or opportunities for university admittance. For example, participants in the study who had completed their graduate degree cited open-mindedness, questioning, and an emphasis on life-long learning as valuable, lasting, life skills that were outcomes of the program. For some participants, the emphasis on life-long learning inspired them to pursue their doctorate; others went abroad to teach English, and nine actively sought jobs that incorporated international perspectives. According to the participants, participation in the IBDP opened avenues for life choices and options they otherwise may not have known. Herein is a benefit of the alumni perspective because it often requires distance to reflect on how one experience impacts another. In this case, the experience of IBDP was not immediately recognized until participants took time for reflection. This advantage is made clear when compared with responses from the three participants recently or yet to graduate from college. These students still saw the value of participation beyond academic content recognizing they were better able to think critically and be more open-minded; however, because of the lack of career experience with which to compare to high school experiences, their responses focused on how well prepared they felt for college coursework. They were able to write, research, and manage their time and did not feel overwhelmed by the amount of work involved in college.

The alumni perspective of college graduates is valuable because it confirms for the researcher the long term value of participation in the IBDP. That is not to say that alumni still in the university do not offer an equally beneficial perspective on the value of the program. For

alumni still in college, they are able to confirm that existing practices and teachings within the PHS IBDP are valuable for students as they enter the university. Together, these perspectives confirm for the researcher that there are valuable short and long term outcomes of participation in the IBDP.

College credit. To gauge the perceived value of IBDP, one of the questions participants were asked was, “What motivated you to continue with the program at the time you were enrolled?” Research suggests that one of the reasons students persist in the program is because of the view that IBDP is a ticket into prestigious colleges and universities, with the added benefit of earned college credit (Hertberg-Davis & Callahan, 2008). The current study, though, did not reveal this to be a priority motivation for joining or outcome of participation.

Whereas, three students acknowledged the college credit they received allowed them to graduate early or take more classes and complete more degrees in a short amount of time, the majority of responses did not acknowledge earned college credit as a motivating factor. Some students did report they initially entered the program because of its prestige and the hope that their participation would influence university admittance, just as the findings of Hertberg-Davis and Callahan (2008) suggested; however, none of the participants reported an obvious correlation between the program and university admittance. One student suspected it played a role in his acceptance to Stanford and another mentioned she suspected it helped her on certain applications. Thus, the initial draw of IBDP including academic prestige, college credit, and university admittance were not reported by alumni to be major outcomes of participation nor were they emphasized as valuable. Instead, credit and influence on university admissions were secondary benefits of a program that provided long term academic and life skills.

Emerging Themes

The third research question, “Do alumni feel their participation in the program was of value?” was addressed by looking at memorable moments, motivations to continue, and personal recommendations. The researcher found that responses to these three areas revealed a common conclusion: Participation in the program was valuable because of the lasting impact on personal dispositions as acquired through the attainment of academic and life skills. This conclusion is further supported through the examination of the data that revealed three emerging themes: the power of the cohort culture, increased self-confidence, and impact of stress.

Cohort Culture. The cohort culture of students and teachers created a friendly, supportive environment that encouraged participants to persist and persevere. Individual teachers’ knowledge, passion, and consideration for the IBDP students played an important role for participants who noted this as a unique component of the IBDP not always seen throughout PHS. The majority of responses addressed or alluded to the power of having students in their classes who were intellectually curious, supportive, and encouraging. It was the combination of the students and teachers that created a cohort culture where the IBDP participants felt they were part of a small community of like-minded individuals; for some the relationships that began in this cohort continued for years beyond graduation.

In the previous section on contextual awareness, the researcher found that the strong cohort had negative ramifications for participants who were not socially or emotionally able to handle different communities and people. Based on these counter findings, the cohort culture is powerful with potential to either benefit or harm individuals and programs. A positive culture, for example, leads to a positive perception of the program and vice versa. As one participant stated, “I was lucky to have such a great group of students to go through the program with so I

have a very positive perception of the program.” On the other hand, the participant who did not complete college because of mental and physical issues stated that the cohort culture was toxic and her experience in IBDP was negative because she could not meet the expectations of her peers and she felt ostracized. She noted the irony of the fact that the IB valedictorian was a notorious cheater who prided himself on the motto, “IB therefore IBS.” And she lamented the martyr attitude of her peers who competed over who stayed up the latest or longest doing homework.

It is interesting to note that the reputation of staying up all night, drinking caffeine, being overly stressed, and doing tremendous amounts of homework applies to IBDP nationwide. Blogs and Chat Rooms like IB Survival provide forums for students, parents, and teachers to discuss the lived experiences of participating in IBDP. Studies like that conducted by Foust, Hertberg-Davis, & Callahan (2009) on the social/emotional implications of participation in IB programs found that students in IBDP perceived positive and negative consequences. One of the negative consequences of participation was the imposition of stereotypes previously mentioned. For participants in the study, these stereotypes were constructed both by the cohort and the external community. Additionally, a search of YouTube videos reveals numerous examples of IB satire produced by and about IBDP students like Rizqa’s (2015) “A Day in the Life of IB Students.” While these videos make light of the IB program, they also highlight the negative reputation described by Foust, et al (2009) and the participant in this study. In all of these examples, the cohort plays a powerful role in participants’ feelings about their experience in the IBDP. Several studies including research done by Hertberg-Davis and Callahan (2008) and a life history study by Wright (2015) support the influence of the cohort. In the first study, Hertberg-Davis and Callahan found that the quality of teachers, student-to-student relationships, and

student-to-teacher relationships played a significant role in supporting and encouraging students to complete the IB diploma. Participants noted the value of being in a supportive, encouraging environment with like-minded individuals; as a result, they reported positive reactions to the IB program overall. Wright's study on the long term impacts of IB similarly revealed the influence of the cohort in creating life-long friendships for participants. Those relationships allowed students to complete the program and became integral aspects of their lives after graduation.

This study examined the role of the cohort but did not specifically address stereotypes and misconceptions. Certainly further research is needed to determine if all night study sessions, plagiarism, and mental anguish are narratives founded in reality or if they are misconceptions based on stereotypes.

Self-Confidence. Self-confidence emerged as another valuable outcome of participation in the IBDP that made the program worthwhile for many participants. Participants described feeling well-prepared for university academic work, and as a result, they were able to focus on other activities, find new interests, and enjoy all that college life had to offer. Students of IBDP felt they had the skills and content to easily access the course assignments and they were versed in study, organization, and time-management strategies so they felt comfortable balancing multiple academic and social tasks. The skills gained from completing major, cumulative IB projects time and time again were cited as especially useful in providing participants an inherent understanding of how to approach major tasks and break them down into manageable parts. Knowing the strategies that work for the individual and the subsequent self-awareness led to a sense of confidence for the participants who reported feeling ahead of their college peers.

Stress. As previously mentioned, anecdotal evidence suggested to the researcher that the stress involved in completing the IBDP may not outweigh the positive outcomes and that was

one impetus for undertaking this study. However, in this study, less than half of the participants referenced stress and lack of social life as negative consequences of participation.

In the study presented here, participants were asked to recall their experiences in the PHS IBDP and reflect on the outcomes whether they be positive or negative. Participants remembered instances of extreme hard work and stress as well as moments of great triumph and success. Interestingly, stress did not appear as a major component or word in responses even though research suggests this is one of the major limitations to the program (Foust, Hertberg-Davis, and Callahan, 2009; Suldo, Shaunessy, & Hardesty, 2008; Suldo, Shaunessy, Thalji, Michalowski, and Shaffer's, 2009). In fact, most responses equated stress with hard work and upon reflection, participants felt they were well prepared for university and work related stress as a result of the hard work they faced in the IBDP. One participant felt that the stress she experienced while trying to complete the IB exit exams prepared her for the stress of exams in medical school because she knew what to expect and she knew she could succeed. This comment further suggests a correlation with the previously explained outcome of self-confidence as a result of completing the program and acquired life skills.

The emergence of this theme highlights the benefits and drawbacks to utilizing alumni surveys such as those used for this study. The benefits include the fact that alumni have the advantage of life experience on which to compare life events. In other words, events that seemed monumental in high school may pale in comparison to events that occurred later in life. The literature also supported the use of alumni surveys because institutional quality and effectiveness can, in part, be measured by the accomplishments of alumni in the years following graduation (Cabrera, Weerts, & Zulick, 2005). In recent years, institutions have turned to alumni voices for justification of practices and policies and to recruit future students. For example, a study

conducted by the University of California suggested that obtaining a good job and academic reputation are two of the top factors influencing college choice for first year college students (Higher Education Research Institute, 2003). By surveying alumni, researchers can assess the information to provide support for institutions like PHS, in this case.

On the other hand, alumni studies also have drawbacks including the fact that recalling events may not actually reflect those that were experienced at the time (Bok & Bowen, 1998), and perceptions and memories likely change over time. Additionally, the literature showed that one's current career accomplishments can impact how one remembers previous experiences (Pike, 1990). For example, alumni who are satisfied with their job and life situation are more likely to have positive memories of academic experiences and vice versa.

In this study, the majority of respondents successfully graduated from a university and were employed in professions of their choosing rather than out of necessity. One subject, who took a gap year after high school and felt burnt out because of IB, acknowledged that the stress and pressure of the program caused her to almost quit, but after a year away from school, she felt ready to return and tackle "hard work" she associated with the program. This study did not seek to answer whether or not alumni felt fulfilled or successful in their current position, and as such, that was not specifically addressed in the responses. However, participants were asked to recall memorable events and consider areas for growth and celebration in the program. Unmanageable levels of stress were not specifically or overwhelmingly addressed by participants, suggesting that the stress encountered during high school was not as memorable as the long-term outcomes of participation.

Recommendations and Limitations

This section includes recommendations for stake holders including the International Baccalaureate Organization (IBO), prospective students and parents interested in the program, and the IBDP at Poudre High School. It is followed by suggestions for further research based on the limitations of the study.

International Baccalaureate Organization

Based on the findings of this study, it is recommended that IBO continues to foster and develop curriculum with real world application. The addition of practical mathematical and scientific content would be beneficial for all students including those who plan to pursue further math or science courses. Additionally, if the IBO is interested in opening access, they must consider offering courses that allow students of all interests and abilities to succeed. This may mean adding courses in financial and life management or lower level mathematics and science classes that are accessible to more students.

The IBO is also encouraged to monitor implementation of the programs in a more systematic manner so that there is national consistency and so that students are uniformly well prepared. The monitoring of program implementation involves ensuring that programs adhere to the standards and practices put forth by the IBO. Stringent program evaluation beyond student assessment data is needed to confirm that programs maintain the quality and caliber of curricular instruction demanded by IB. Additionally, connecting with universities across the nation to determine what is needed to be college ready will provide further guidance in consistently preparing students for post-secondary pursuits. Uniform implementation of IB programs also includes removing financial barriers to program adoption so that schools from all districts and areas have the opportunity to participate.

Finally, it is recommended that the core components are evaluated in terms of how they apply to the values and mission of the IB program. If it is enough that they are significant but not direct, then perhaps they merely need modification. If, however, it is desired by IBO that the core components are directly addressed with explicit connections throughout the curriculum, the work load and time commitment of the three core components must be evaluated.

Students and Parents

It is highly recommended that students and parents consider the long term outcomes of an IB education rather than focusing on the immediate prestige and reputation of the program. While the lure of college credit cannot be ignored or downplayed, an IB education also develops life skills and foundational preparation for future paths.

Students and parents should also be aware of the implications of this study in regard to levels of stress as perceived by participants. While the work load and rigor of the program is intense at the time, it is important to note that the participants in this study did not recall that as a significant component in their experience. Rather, in hind sight, the participants equated the hard work with a work ethic that allowed them to succeed in college and beyond. This is not to suggest that stress and hard work are not a part of the program, but the results of this study suggest they are not the most important part and prospective students and parents need to be made aware of this fact.

Poudre High School

Based on the findings of this study, it is recommended that the PHS IBDP explore incorporating social/emotional learning and life management in the curriculum, improve efforts to open access to all students, include explicit teaching of traits of the Learner Profile, and integrate the components in the daily schedule rather than independent projects.

Social and emotional learning and life management. Students in the PHS IBDP experience high levels of stress and their work load is rigorous especially in comparison to those not in IBDP. While the existing program at PHS does a quality job of preparing students academically for post-secondary pursuits, more emphasis on how to deal with emotions, other people, and even stress is recommended. It is easy for alumni to acknowledge that stress is relative, but students in the moment do not have that luxury, and if students do not have the strategies and skills to cope with those emotions, they cannot be successful or work their way through an event. Thus, it is recommended that the PHS IBDP explores ways to incorporate either explicit or implicit instruction on social/emotional well-being, whether this be through the adoption of a new curriculum or teacher training.

This recommendation is founded on current studies commissioned by the IBO looking at social and emotional well-being of students in the Middle Years Program in grades 5-10. In fact, the organization recently created teacher resources focused on raising awareness about the ‘why’ and ‘how’ of SEL and how to implement such education (IBO, 2015a). While these resources are targeted to Middle Years students, the lessons, skills, and information are applicable for students at all levels and can be easily incorporated at the Diploma Program. For example, the resources include lesson plans encouraging students to explore and share personal narratives while considering how those narratives shape individual emotions and reactions. Further, the lessons provide students and teachers skills to address and deal with those emotions in a healthy, productive manner (IBO, 2015a).

Additionally, basic life management courses are also valuable and students in the program do not receive any such instruction. Although the IB curriculum is prescribed, it is

recommended that PHS find ways to incorporate courses in financial awareness and budgeting, so as to provide students additional life skills after graduation.

Open access. It is recommended that the PHS IBDP continue to recruit students reflective of the PHS population. In order to do this, the program may have to redefine their vision of the DP student and DP success. Although the program has had a diploma pass rate above 90% for the past 20 years, opening access to all learners may mean that fewer students obtain the full diploma. It is recommended that the program consider this and their philosophy of success in order to redefine their program and meet the needs of all learners.

As part of the recruitment, marketing focused on the outcomes of participation beyond college credit should be emphasized. It is recommended that the program works to attract more students and families based on the long term benefits of participating in the program and deemphasizing the stress involved or the lure of a prestigious college admittance.

Learner profile instruction. This study found that the development of lasting values like open-mindedness, critical thinking, and curiosity were important outcomes of participation in the IBDP. These are also traits of the Learner Profile and so it is recommended that the PHS IBDP utilize existing structures and practices to emphasize these values. This may include creating posters of the traits to hang in each classroom, incorporating the traits into weekly announcements, or recognizing student achievements based on traits. While the Learner Profile is alluded to in the DP, explicit instruction and incorporation of the traits in the curriculum is recommended for students and staff to make the necessary connections among the activities, assessments, and outcomes.

Centrality of core components. If the IBO believes that the core components are at the heart of the program, it is recommended that the PHS IBDP take steps to support that idea. As it is, TOK is the only core component scheduled into the students' day; CAS and EE are done independently with check points and mentors to oversee the process. The results of this study found that of all three core components, TOK was most frequently mentioned. A possible explanation is that TOK is a dedicated course with an instructor and so the time and learning are directed. As such, it is recommended that CAS and EE be given a dedicated time and instructor, as well, so as to encourage the development of the values associated with these components.

Further Research

Following this study, further research is recommended to answer these main questions:

1. Are IBDP students successful because of the IB program, or would they have been successful regardless because of the intrinsic motivation characteristic of many IB learners? Is this relationship a case of causation or correlation?
2. Did the culture of PHS IBDP create positive results or are positive reactions indicative of the curriculum in the IBDP? In other words, how much does the culture of the program impact the outcome of participation in the long term?
3. Are other IBDP programs with similar demographics experiencing the same outcomes, or is this a unique, isolated example of one school in Colorado?

All three questions are important to further this investigation but the first question elicits the most interest from the researcher. The IBDP program is a program that successfully prepares students for post-secondary pursuits. As shown, students leave IBDP with life skills enabling them to think critically and be open minded, successfully tackle major projects, and interact with

individuals with differing perspectives. However, determining if these skills are a result of the IBDP curriculum and assessments or if the skills are inherent within the individuals becomes a chicken or egg argument. Research on the relationship between the type of student that enrolls in IBDP and the long term outcome for that student is sparse. Typically, research identifies characteristics of gifted students who are drawn to rigorous, academic programs like the IBDP; however, it is not clear if those same students would be successful in a less rigorous program. Clearly, this is an area for further research that could provide valuable information on the development of IBDP programs and subsequently, the recruitment of students for these programs.

Limitations

This study was limited by the fact that it was one site in a middle class school district with a consistently high diploma pass rate. Additionally, the school only offers the full diploma program and has averaged a senior class size of 70 over the past 20 years. There is very low teacher turn over with many of the DP teachers having taught the same course for eight to 15 years; meaning, they have an understanding of the exams and know how to prepare students for those exams. The students in this study had the advantage of receiving academic preparation from experienced instructors.

It should also be noted that this was a small sample size with fewer males than females, and those who responded to the request for participation wanted to support the program.

Conclusion

The findings of this study support the researcher's experiences in her interactions with alumni who report feeling prepared for their college courses after graduating from PHS IBDP. At PHS, the graduating class of the previous year are invited back to PHS to receive their official

IB diploma and reconnect with classmates and teachers. Anecdotal findings from this homecoming show that the majority of alum report their first semester of college as easy because they are used to the workload. These students also acknowledge that, though they were stressed while in the program, they did successfully make it through the program.

One of the more surprising findings of this study was the recognition that social/emotional skills are lacking for many IBDP graduates. The supportive, cohort is such a positive aspect of the program in many ways and yet there is a negative component that the researcher was not expecting. Students may be so supported while in the program that they do not acquire the skills to deal with others outside of the program once they leave the safety of the cohort. Ironically, the IB curriculum at all levels, Primary Years, Middle Years, and Diploma Program, encourages students to examine multiple perspectives and engage in dialogue to better understand others. Perhaps, the academic ability to rationalize and think broadly does not translate to the affective skills needed to work with other people.

This current study, then, provides the researcher with data to support making changes and maintaining existing practices in the PHS IBDP. This is of monumental importance if the program is to continue to grow and improve.

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APPENDIX A

Knowledge and Skills for University Success (KSUS) Standards

- Critical thinking skills
- Analytical thinking skills
- Problem solving skills
- Inquisitive nature
- Open to and utilizes critical feedback
- Open to possible failures at times
- Clear & convincing written and oral expression
- Can weigh sources for importance and credibility
- Can draw inferences & reach conclusions independently
- Time management skills
- Uses technology as a tool to assist learning, not a crutch

APPENDIX B

Qualitative Survey Questions

1. What grade did you enter the IB program?
2. Why did you initially enroll in the IB program?
3. After high school, describe the path you pursued (university, Peace Corps, gap year, etc.)
4. What types of things do you remember were promoted as core values of the IB?
5. In what ways, if any, do you regard the IB as having influenced your decision to attend (or not attend) a university?
6. Do you regard the IB, or any aspects of the IB program, as having influenced your choice of career? If so, how?
7. What, if anything, did you learn or gain from your time in the IBDP that you utilize in your life currently?
8. Were there any areas of life after graduation you felt more or less prepared for after your participation in the IBDP?
9. Describe a memorable event during your time in the IBDP and explain why it was so memorable.
10. What motivated you to continue with the program at the time you were enrolled?
11. Would you recommend the IB program to others? Why or why not?

APPENDIX C

Research Questions & Survey Questions

4. What do IBDP alumni identify as significant components of the IB experience?

(REFLECTION)

SURVEY QUESTIONS:

- a. What sort of things do you remember that were promoted as core values of the IB?
 - b. What factors motivated alumni of the IBDP to participate and continue in the program while in high school?
5. Do alumni perceive participation in IB to have contributed to post-secondary life?

SURVEY QUESTIONS:

- a. In what ways, if any, do you regard the IB as having influenced your decision to attend (or not attend) a university?
 - b. Do you regard the IB, or any aspects of the IB program, as having influenced your choice of career? If so, how?
 - c. What did you learn or gain from your time in the IBDP that you utilize in your life currently?
 - d. Were there any areas of life after graduation you felt more or less prepared for after your participation in the IBDP?
6. Do alumni feel their participation in the program was of value?

SURVEY QUESTIONS:

- a. Describe a memorable event during your time in the IBDP and explain why it was so memorable.
- b. What motivated you to continue with the program at the time?
- c. Would you recommend the IB program to others? Why or why not?