

## ABSTRACT

Title of dissertation: Perceptions of global mindedness in the International Baccalaureate Middle Years Programme: The relationship to student academic performance and teacher characteristics

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The purpose of this exploratory study is to investigate student perceptions of global mindedness between students who participate in the International Baccalaureate Middle Years Programme (MYP) compared to students who do not participate in the MYP or who are new to the MYP in the 9<sup>th</sup> grade. The study further analyzes the relationship between these students' perceptions of global mindedness and academic performance and course enrollment. It also explores teacher perceptions of global mindedness and relates the findings to specific teacher characteristics. There are mixed findings on student acquisition of global mindedness when comparing MYP students to non-MYP students suggesting that student development of global mindedness could evolve over time and is not significantly impacted by one experience, as previous research also suggests. Teacher and student understanding of global mindedness in the MYP could be underdeveloped and focused on global centrism and cultural pluralism. Findings from this research suggest that students participating in the MYP score highest on the global mindedness subscales of global centrism and cultural pluralism. The MYP could unintentionally be more explicitly focused on academics compared to explicitly teaching, learning, and assessing global mindedness because there was a significant relationship between participation in the MYP and academic performance and course enrollment over time. There are specific teacher characteristics that predict global mindedness and vice versa and these findings are aligned with previous research. The participant sample was from one school district and the survey was done at one point in time, which created certain limitations. The mixed findings of this exploration suggest that more research is needed to better understand the relevance and development of global mindedness on student and teacher perceptions in the International Baccalaureate Middle Years Programme.

PERCEPTIONS OF GLOBAL MINDEDNESS IN THE INTERNATIONAL  
BACCALAUREATE MIDDLE YEARS PROGRAMME:  
THE RELATIONSHIP TO  
STUDENT ACADEMIC PERFORMANCE  
AND  
TEACHER CHARACTERISTICS

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## Abbreviation Chart

<i>Term</i>	<i>Abbreviation</i>
Analysis of Covariance	ANCOVA
Content Validity Index	CVI
Council of Chief State School Officers	CCSSO
Diploma Programme	DP
English for Speakers of Other Languages	ESOL
Free and Reduced Meals System	FARMS
Global Mindedness	GM
Global Mindedness Scale	GMS
Grade Point Average	GPA
High School Assessment	HSA
Identification Number	ID
International Baccalaureate	IB
International Baccalaureate Organization	IBO
International Baccalaureate Preparation	Pre-IB
International Mindedness	IM
International School Association	ISA
Middle School Assessment	MSA
Middle Years Programme	MYP
National Governors Association Center for Best Practices	NGA Center
Non-Government Organization	NGO
Primary Years Programme	PYP

## CHAPTER 1. Introduction

Whether a child goes to school in Beijing, China; Kabul, Afghanistan; or Baltimore, United States, she is being educated in an ever-changing, complex, diverse, and interconnected world. Children are growing up in a world that is grappling with an unprecedented flow of knowledge, power, technology, and global migration. This enhanced global interconnectivity is just one of the facets of the multidimensional phenomena of globalization. Globalization is an economic, political, and cultural force that dominates both the developed and developing worlds (Nordgern, 2002). Globalization has broadened the possibilities for human life in both positive and negative ways and, like never before, it is going to continue to push the limits of the political, economic, technological and cultural capacities in ways yet to be understood. At the same time the negative impact of globalization has not been fully realized, analyzed or considered. There is mounting evidence that supports the phenomena of globalization and adaptations (good and bad) can be seen in many global systems: economic systems, political systems, technology systems, migration patterns. The question that remains is to what extent education systems will adjust as a result of globalization. Will educators continue to force a round peg (current education system) into a square hole (globalized society) or will educators make radical changes to an education system that was developed for a world of the past? To what extent will policy makers embrace the notion that children need different knowledge, skills, attitudes, and behaviors to navigate and innovate in an interconnected world?

According to Ball, Dworkin, and Vryonides (2010) globalization as a multifaceted social phenomenon impacts the lives of individuals all over the world in a number of ways, but



differently. Globalization is not just about economic, government, and labor systems; it is also a process that affects the flow of the knowledge economy and technology. Theodore Levitt, an economist, is credited with coining the term globalization in 1985 to describe changes in global economies affecting production, consumption, and investment (Stromquist, 2002). The term quickly caught on and spread across many fields of study. Then, in 2005, Thomas Friedman popularized the concept of globalization in *The World is Flat: A Brief History of the Twenty-first Century*. He presented a case that globalization affects everything including common experiences like buying groceries. He provides numerous examples of how globalization is expanding and becoming more complex and because of these growing complexities, he recommends that the education system needs to change. Friedman (2005) goes on to support his claim by detailing the death of distance. The world is functionally shrinking (de Blij, 2005) and has five interconnected systems: economic, environmental, political, cultural and technological. These systems are expanding and transforming societies in ways and speeds never seen before by humankind. As a result, globalization has the potential to expand and transform the critical, imaginative, and ethical dimensions of education (Heilman, 2009).

Since globalization is multi-dimensional and impacted by many disciplines no one can ever claim a definitive understanding of the relationship between globalization, the state, education, and social change (Burbules and Torres, 2000). There are, however, numerous discussions on the positive and negative impacts of globalization. While globalization brings to the fore the area of education, it also severely impacts the economic, cultural, and political arenas. Many suggest the purpose of education is to prepare students to become active

contributing players in a global market place as both producers and consumers. In this sense, schools help shape consumer attitudes and practices, which could be influenced by the increasing private ownership in education. There is an increasing amount of privately operated schools at all levels, primary, secondary, and higher education levels. The increased private sector responsibility for education could reduce the ownership of the state, which would eventually impact in a negative way the poorest of the poor who rely on the state for a quality education. From a cultural perspective there is a tension around the degree to which globalization causes standardization and homogeneity of the local, regional, and national identity. There is also a fear that globalization could impact in a very unbalanced way and negatively, the developing countries and the poorest of the poor (Stromquist, 2002). From a political perspective there is a belief that globalization causes a certain loss of nation-state autonomy because decisions are more influenced by the external demands from the transnational institutions. Although it might be unintended, the human consequence from growth of the global connectivity impacts the environment, healthcare, violence, terrorism, etc. All of these impact education and education can potentially influence these phenomena as well (Burbules and Torres, 2000).

Regardless of where one perceives globalization on a continuum of positive to negative there is widespread agreement that the current education systems need to consider their purpose and goals in both what and how they are preparing children for globalization and the interconnected world in which we now live. The UNESCO Millennium Development Goal of providing a basic primary education for all children by 2015 may not be sufficient for

suggesting change and is far from being met. In 2011, there were still 57 million children out of education, down from 102 million children in 2000 (United Nations, 2013). In order to function effectively not only in their own societal contexts but also in international contexts, students need knowledge of languages and other cultures and the ability to function in cross-cultural situations (Stewart and Kagan, 2005). In the *Global Achievement Gap* (2008), Tony Wagner describes the new skills students will now need for careers, continuous learning, and citizenship in an increasingly complex world. They are:

1. Critical thinking and problem solving
2. Collaboration across networks and leading by influence
3. Agility and adaptability
4. Initiative and entrepreneurship
5. Accessing and analyzing information
6. Effective oral and written communication
7. Curiosity and imagination.

Wagner goes one step further and suggests that all students need these new skills for college, careers, and citizenship if they are to engage in a highly competitive “knowledge economy.” The failure to give all students these new skills leaves both the students and the country (in reference to the United States) at an alarming disadvantage (Wagner, 2008).

Although there are numerous and distressing recommendations for education systems to change there continues to be a focus on basic reading, mathematics, and writing skills in curricula driven by standardized tests, individual academic performance, competition, and national citizenship. Schools and teachers are focused on implementing the latest reform mandates and have limited time to focus on the survival skills listed above and even more limited time providing opportunities for students to develop an international or global

perspective. If there is any hope of engaging in or benefiting from the multifaceted phenomenon of globalization, schools must reconsider the extent to which their next reform effort includes an opportunity for students to develop the survival skills mentioned above in combination with a more globally-minded perspective.

In the twenty-first century students need much more than the knowledge of a discrete set of basic skills in reading, writing, and math (Wagner, 2008). Almost every job that will pay more than minimum wage will require the employee to be able to solve problems, think critically, communicate effectively and adapt to unfamiliar situations. Students need the opportunity to develop global mindedness, shared responsibility, and cultural pluralism to facilitate the development of a “global-mindset” that may assist them with the realities on an ever-more interconnected world (Hett, 1993; Walker, 2008). At the same time it is important to recognize that the faces of the students in the classrooms are changing drastically and rapidly. In the United States, 20% of children ages 5-17 have a foreign-born parent (Capps et al., 2005). The kind of pedagogy needed to teach both the diverse student population and to help students learn how to think critically and solve problems is much more demanding than that needed to teach low-level, discrete skills. Teachers have to focus on teaching all students new knowledge and skills, and at the same time, meet the needs of all students – no matter their ability, background, or socio-economic status.

Central to meeting the needs of the twenty-first century student is the expertise and effectiveness of the teacher. Pervasive in the literature is the finding that teachers have the most influence and greatest impact on what and how students learn (Zhao, 2010). In the United

States, current statistics indicate that schools and teachers are not providing the most effective education for all students. The high school graduation rate is “about 70% of the age cohort – well behind countries such as Denmark (96 percent), Japan (93 percent), and even Poland (92 percent) and Italy (79 percent). Further, only about one third of U.S. students graduate ready for college today, and the rates are much lower for poor and minority students” (Wagner, 2008, p. xix). In order to prepare students to be contributing global citizens, teachers need to learn how to prepare students for international tests, understand best practices from around the world, and successfully teach diverse student populations for a knowledge economy. Teachers need to shift their focus from teaching students as a service to the local community to a requirement of preparing students for the future. Schools and teachers need to re-examine their curriculum and pedagogy to better equip students with the knowledge, attitudes, skills, and behaviors needed in a knowledge economy (Zhao, 2010).

Many scholars, economists, government officials, and business people suggest that globalization is one of the most powerful forces that will shape the future world in which our children live (Bloom 2004; Wagner, 2008; Zhao, 2010). Therefore, the imperative for schools and teachers to evolve is evident in both the reality of schooling and the research on schooling. Additionally, recent studies of teacher impact at the classroom level have found that differential teacher effectiveness is a strong determinant of difference in student learning, far out-weighting the effects of other classroom variables (Darling-Hammond and Barry, 1999). Darling-Hammond and Barry (1999) report that “in an analysis of 900 Texas school districts, Ferguson (1991) found that teacher expertise (as measured by teachers’ scores on a licensing examination)

accounted for about 40% of the measured variance in students' reading and mathematics achievement in grades 1 through 11 – more than any other single factor" (p. 275). Unfortunately, in the United States, the increased attention on standardized curriculum and testing in schools has not only narrowed what schools teach; it has also limited teacher education programs to expand and adapt their programs to prepare globally-competent teachers (Zhao, 2010). Valli, Croninger, Chambliss, Graeber, and Buese, (2008) report that the current emphasis on high-stakes standardized testing has created a test-driven culture that narrows curriculum to teaching only the basics which are tested, weakens student-teacher relationships, and undermines professional standards for teaching and learning.

Further, although there have been changes in student population, teaching and learning standards, and testing type and quantity, the teacher training system continues to function in the same way it always has with very few changes. As a result, teachers are being trained to prepare students for the world past and not the interconnected world in which they live. Teacher education is called on to prepare teachers with a deeper understanding of the needs of a diverse student population, the culturally relevant skills and attitudes, and social responsibility (Wang et al., 2010). Teacher education reform in the United States is a critical piece in the broader conversation on educational reform needed to improve teaching practice and, thus, better prepare students for globalization.

Today's students need the knowledge, attitudes and skills to live in a more interconnected world than anyone has ever known. To better prepare students for the complexities of globalization, teachers must ensure all students have the educational

opportunities that emphasize the development of the skills, values, behaviors, and attitudes necessary for life in a global era (Suarez-Orozco and Sattin, 2007). Some also recommend that teachers need to explicitly emphasize the development of international mindedness, which includes four core components: emotional intelligence, communication, cultural understanding, and collaboration (Hill, 2000; Walker, 2004).

More recently, there has been a rise of interest in understanding the term 'international mindedness' most likely because of the increased interest in the topic of international education (Cause, 2009). The term is now starting to make more appearances in educational literature and curriculum models around the world such as the International Baccalaureate (IB), where it is the central component of the mission statement (Hill, 2002). The International Baccalaureate, a non-governmental, education organization which emphasizes the need for schools to ensure openness and curiosity about the world while also developing a profound level of understanding of the complexity and diversity of human interactions, will be a key focus of this research (Cause, 2009; Hill, 2007).

For the purpose of this research international mindedness, as defined by the IB and global mindedness as defined by Hett (1993), will be used as the same concept. The former Director General of the IB, Ian Hill, stated that an internationally-minded person is a person who demonstrates the ten attributes of the IB learner profile (Hill, 2002). The IB learner profile explicitly defines the attributes of the IB learner – the attributes of a person that the IB believes an internationally-minded person would possess. It states that an internationally minded person is someone who makes responsible decisions for life, is knowledgeable about global

issues, is empathetic, is an inquirer, a thinker, a communicator, caring, open-minded, balanced, reflective, and a risk-taker (IBO, 2005). The main goal of IB schools is to promote world peace and international understanding through the development of young people who possess the attributes of the IB learner profile.

In 2008, George Walker, former Director General of the International Baccalaureate proposed a shift in thinking related to the development of an education that is international. He suggested the following:

I much prefer the term “global mindedness” to “International mindedness.” The concept of an international world belongs to the 20<sup>th</sup> century, when events took place in distant, exotic countries whose schools –to use Alec Peterson’s phrase— were across frontiers. In the 21<sup>st</sup> century, those frontiers have been largely removed by electronic communication and ease of travel. Today, the global world starts on our doorstep, where the cost of buying a house is affected by the cost of labor in China, manufacturing in India modifies the weather in Florida and mass migration alters our national identity. (p. 35)

Although international schools, or schools that choose to offer an international program of education, vary widely in terms of their geographic locations, student demographics, government affiliation, and academic goals, they often share a common theme of working within the context of internationalism, which emphasizes relationships among nations in an attempt to instill global mindedness in students.

The International Baccalaureate Organization (IBO) states that the focus of their educational programmes (Primary Years, Middle Years, and Diploma) is to develop internationally minded people who are identified through their recognition of human commonalities and shared guardianship of the planet, while helping to create a better and more



peaceful world (IBO, 2007b). Educators suggest the IB's philosophical underpinnings and published definitions of international mindedness (IM) do overlap with the concept of global mindedness. George Walker, former Deputy General of the IB, suggests (2008) that the IB use of the prefix international may unintentionally presume an overarching allegiance to national-awareness or the relationship between nations, rather than the broader, all-encompassing perspective of shared humanity identified through the term global mindedness. However, the use of the term international does not in any way suggest that the IB promotes only allegiance to national-awareness. Rather, as stated in the IB mission, the IB strives to develop globally minded citizens who "help to create a better and more peaceful world" (IBO, 2012, p. 1). Currently, the IB is in the process of developing a committee to review the current mission statement and use of international mindedness and will consider the change to global mindedness.

For the purpose of this study, I define global mindedness as "a world view in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors" (Hett, 1993, p. 143). This definition, identified through Hett's (1993) research and development of a survey instrument to measure the affective components of a global perspective, proposes a multi-dimensional framework that reflects a shared humanity, which views the world as an interconnected, interdependent community. The definition also advocates responsible citizenship that considers both local and global perspectives while also reflecting a commitment to service for others. According to Hett (1993), the five dimensions of global mindedness are

responsibility, cultural pluralism, efficacy, global centrism, and interconnectedness. All five dimensions emphasize the development of responsibility, awareness and appreciation based on global, rather than ethnocentric or national standards. It is important to mention that while these definitions promote and support a global perspective in relation to exploring other cultures and taking responsibility for one another, this does not suggest, support, or assume the notion of global hegemony, which often appears as a predominant criticism in discussions related to globalization and global awareness.

The International Baccalaureate aims to develop internationally-minded people who as it states in the IB mission:

The IB 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 programmes of international education and rigorous assessment.

These programmes 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, 2012).

Of particular interest for this study is the IB's Middle Years Programme (MYP), which is offered across the world for students from ages 12 to 16, grades 6 through 10. All students no matter their ability level and all staff are involved in the implementation of the MYP because it is a philosophy of teaching and learning, which includes standards and practices that schools use to guide their work. The standards and practices include the development of subject specific scope and sequence, teaching and learning practices, and assessment methodologies that reflect a

globally minded perspective. Intercultural understanding, effective communication, and interdisciplinary teaching and learning are the fundamental concepts at the foundation of the Middle Years Programme that serves all students in the school. The MYP goes beyond teaching and learning; it addresses every aspect of school life with the goal of teaching the knowledge, attitudes, skills and behaviors to all students so they can succeed in an interconnected world. Much like the other IB Programmes – the Primary Years Programme for students from ages 3 to 12 and Diploma Programme for students from ages 16 to 19, the MYP was originally intended to facilitate the work of international schools and address issues regarding student mobility for those living away from their homeland. Over time, the IB and those related to the organization began to challenge the belief that an international education was only appropriate in the context of an international school, especially when considering the IB mission. These reflections, discussions, and debates coupled with the adoption of the IB programmes by an increasing number of public schools within the United States, led to the important realization that international education was no longer seen as a program for international schools overseas, but as an experience that should be an inherent part of the formal curriculum (written, taught, and assessed) wherever it was taught (Hill, 2007).

### **Statement of Problem**

Many agree that globalization is one of the greatest challenges our children will face in the 21<sup>st</sup> century (Darling-Hammond, 2006; Engler and Hunt, 2004; Kagan and Stewart, 2005; Spring, 2008; Wagner, 2008; Wagner, 2012). Researchers also agree that living in an interconnected world requires that students need more than just the basic reading, writing, and

math skills. Students need to be able to solve problems, think critically, adapt in unfamiliar situations and be more culturally aware than ever before. The interconnected, intertwined knowledge economy requires that students have greater knowledge of other people, places and cultures (Engler and Hunt, 2004). Although globalization and preparing students for success in the 21<sup>st</sup> century has been at the forefront of educational conversations among researchers, educators, and government agencies in recent years, few changes have been made to the current education system in the United States. Some note that maintaining the one dimensional view of education, which ties education solely to the development of the nation-state citizen bound to the local systems is likely to become obsolete, while education systems that are proactive and engage in addressing the challenges of globalization are more likely to survive (Suarez-Orozco and Hilliard, 2004). Although schools acknowledge this perspective, especially in the United States, they continue to be bound to a national, standards-based curriculum, which focuses on rote learning and the memorization of facts rather than on problem-solving, critical thinking, learning how to learn, and global mindedness.

Learning about and understanding concepts such as global mindedness is challenging, but relevant and necessary inquiry that should seriously be considered to successfully educate children for the future (Cause, 2009; Zhao, 2010). There is some research related to international mindedness and global mindedness of university students, secondary teachers and students however; there is limited research on this topic as it relates to students' ages 12 to 16, grades 6 through 10 in the United States public education system. At this time there is limited research on education programs that provide students with the opportunities to develop the requisite

knowledge, attitudes, skills, and behaviors to be globally-minded citizens of the world; especially in public schools in the United States.

In recent years the IB has moved to the forefront of international education that espouses to promote the knowledge, attitudes, skills and behaviors that students need to engage in and succeed in a globalized world. According to Sachs (2007), at a time when global thinking is needed to address global problems the IB is well placed to offer a viable solution. The IB was first implemented in elite, international schools to meet the needs of students studying in a country other than their homeland. After a *Nation at Risk* was published in 1983 the IB got its foot in the door in public schools in the United States. It started in “magnet schools” as a unique and different opportunity for ‘gifted students.’ The IB has evolved in its thinking and public schools in the US have evolved in their thinking about what the IB has to offer and for whom. Now, in many schools in the US, IB programmes are offered to all students, not just the ‘gifted students.’ The IB clearly states an access agenda in its current vision (IBO, 2012) – “all students no matter their personal circumstance should have access to an international education” (p. 1). In particular, the MYP is designed to meet the needs of all students in a school, not just the highly able. The over-arching goal of this research is that it will contribute to answering the essential question: Is the IB achieving its mission by teaching a diverse student-population to be globally-minded, active, compassionate citizens of the world? The research will analyze the relationship between student perceptions of global mindedness and their academic performance and course taking choices and look at a comparison of these results between students in the MYP, new to the MYP and not in the MYP. It will also analyze the

relationship between teacher perceptions of global mindedness no matter the subject they teach and the type of professional development training they receive to teach the IB Middle Years Programme (MYP).

The urgency of addressing the multidimensional phenomena of globalization and its impact on education is at the forefront of many complex and conflicting economic, political, and cultural agendas. The underlying assumption of this study is that schools hold our greatest hope for solving the world's most challenging problems and therefore need to develop and inspire globally-minded students. Teachers need to understand the importance of teaching and learning in an interconnected world so that they can prepare their students to be successful, global citizens. In order to ensure that students are prepared to engage in and innovate in the interconnected world they must be taught the requisite knowledge, attitudes, skills, and behaviors of a globally-minded citizen of the world.

### **Purpose of Study**

The purpose of this exploratory study is to investigate the relationship between student perceptions of global mindedness of students who participate in the MYP compared to students who do not participate in the MYP or who are new to the MYP in the 9<sup>th</sup> grade. Additionally, the study looks at the relationship between these students' perceptions of global mindedness and academic performance and course enrollment. This study compared results of the global mindedness survey with student academic performance: grades in Math and English, grade point average, course taking choices and standardized assessments over three years of schooling. And, this study explores perceptions of global mindedness of the teachers who teach

in schools that have the International Baccalaureate and analyze the findings along with teacher characteristics: numbers of years teaching, subject taught, subject studied in college, level of degree earned, lived and/or worked outside of the U.S. and speaks another language. I explore the relationships of perceptions of global mindedness using the dimensions of global mindedness (cultural pluralism, global centrism, efficacy, interconnectedness, and responsibility) as identified by Hett (1993) for secondary students ages 12 to 16, grades 6 through 10 who participate in the International Baccalaureate (IB) Middle Years Programme (MYP) compared to those that do not in a large public school district in the United States. The students who do participate in the MYP do so because that is the program the public school they attend provides. The MYP is for all students in the schools and all students participate. Students do not apply to participate in the MYP in the schools. If a student is slated to attend the particular school that has the MYP then the student will participate in the MYP. There is not a choice to opt out of the program if the school offers the MYP. I also explore the relationships between global mindedness using the dimensions of global mindedness and the teachers of the MYP in the same public schools as the students.

### **Research Questions**

The five guiding questions for this study are:

1. Do 9<sup>th</sup> grade students' perceptions of global mindedness differ between MYP students, non-MYP students and students new to the MYP in 9<sup>th</sup> grade?
2. What is the relationship between academic performance and student perceptions of global mindedness among MYP and non-MYP students?

3. How does students' academic performance change over time as a joint function of (a) whether they were MYP students or not and (b) global mindedness scores?
4. What is the relationship between course enrollment and student perceptions of global mindedness among MYP and non-MYP students, and over time?
5. What is the relationship between selected teacher characteristics and teacher perceptions of global mindedness?

### **Potential Significance**

There is a growing body of research related to international education, global mindedness, and the impact of globalization on education. However, the predominant focus of that research is academic achievement comparisons in relation to economic competition in the transnational, knowledge-based economy rather than the development of intercultural understanding within a global context (Stromquist, 2002). Additionally, there is limited research on the impact of an international education that promotes both rigorous instruction and global mindedness in public education systems that tries to meet the needs of all students ages 12 to 16, grades 6 through 10. While the IB suggests that implementation of its IB MYP will work towards the development of internationally-minded global citizens there is little research, especially in the public school setting, that supports the claims (Bunell, 2009). It is the goal of this research to develop and provide additional understanding of the nature and perceptions of global mindedness as reported by students and teachers participating in the International Baccalaureate Middle Years Programme in the United States public school system.



Because globalization is a multidimensional phenomenon with many facets, employing a critical theory perspective strengthens the analysis of the complex and unequal effects of globalization related to education and the various aspects of the human condition (Stromquist, 2002). To be successful, teachers who possess and provide a critical, global perspective in the 21<sup>st</sup> century must become dramatically more successful with a wide range of learners and teach beyond the discrete basic skills in reading, math, and writing (Darling-Hammond, 2006; Eisner, 1995; Zhao, 2010). The need to teach and learn a more globally minded approach highlights the need to explore global mindedness and consider the extent to which it is developed and implemented in the written, taught, and assessed curriculum of the International Baccalaureate Middle Years Programme. The study of the relationship between global mindedness and student academic performance and global mindedness and teacher characteristics will inform the field of international education for public schools serving a diverse student population and for school communities across the world that are striving to successfully implement the IB MYP.

### **Research Design**

The objective of this research is to explore the relationship between student perceptions of global mindedness and academic performance and course taking choices of both students who participate in the MYP and who do not participate. Additionally, I explore the relationship between teacher characteristics and their perceptions of global mindedness to gain a more thorough understanding of the impact of IB MYP experience, from both student and teacher perspectives as it relates to the overall mission of the International Baccalaureate. The study

examines whether there is a relationship between student course enrollment and academic performance and perceptions of global mindedness and draws comparisons between students participating in the MYP and not participating in the MYP. Additionally, this research explores teacher perceptions of their own understanding of global mindedness and the relationship between these perceptions and the number of years teaching, subject teaching, subject area of expertise, subject studied in college, degree obtained, living or studying abroad and speaking a second language.

This study employed a quantitative method design with three phases. The first phase involved quantitative analysis of student survey data on global mindedness and a comparison between IB MYP, non-MYP and new to MYP students. The second phase was an analysis of student perceptions of global mindedness and academic performance. It involved quantitative analysis of student surveys and the courses students took over three years. The third phase involved quantitative analysis of teacher survey data compared to teacher demographic data.

The study included teacher and student perspectives from schools where authorized IB programmes are implemented in grades 6-12 from one urban/suburban public school district. Students not participating in the MYP were students attending similar schools in the same district that do not have any International Baccalaureate programming. The study was not targeting a particular type of student or teacher; rather it was an analysis of the relationship between perceptions of global mindedness and student academic performance among a diverse range of students in both background and academic ability.

Some of the data for this study had already been collected and some data was collected for the purposes of this research. In 2013 a study was conducted in the same school district and

schools in which students completed Hett's global mindedness survey; data from that study is used in this study.<sup>1</sup> However, teachers did not complete the global mindedness survey at that time. Student survey data was used from all students who took the survey in the ninth grade in the high schools. The current study uses performance data drawn from student records. Research efforts included the use of course enrollment, course grades, and State assessments. Teachers working in the same IB MYP schools and high schools that have both the IB MYP and the IB DP or just the IB DP were invited to complete the teacher survey.

The study employed the use of survey methodology through the administration of a survey incorporating the use of Hett's (1993) Global mindedness Scale (GMS). The GMS was originally developed to evaluate the effectiveness of attempts to develop a global worldview in university students with the major assumption that it is indeed possible to educate for a global perspective (Hanvey, 1976; Hett, 1993). The survey included a modified version of the 30-item GMS and employed the use of a five point Likert-type scale. The slight modifications to the original 30 questions from Hett's (1993) GMS incorporated language more appropriate for students and teachers in the current United States public education system. Additionally, more neutrally worded response choices were used as recommended by Hett (1993). I also developed demographic, open-ended questions to further clarify relationships across and between global mindedness and teacher professional experiences. These variables included number of years teaching, subject teaching, subject studied in preparation for teaching, number of years teaching in the MYP, type and level of degree earned. I use MANOVA to explore the independent variables to the sub-scores (dimensions) of the GMS.

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<sup>1</sup> Confidentiality agreements require that the authors remain anonymous.

## **Limitations of the Study**

There are a number of limitations to this study. One limitation is that the student data was collected in 2012 and the teacher data collected in 2014. The student survey data was collected towards the end of the ninth grade year, which for the students in the MYP it means that they had three and a three quarter years of experience with the MYP to use as a basis for their perceptions. And, those students new to the MYP had three quarters of a year to learn and experience the MYP. This was the time the school district permitted researchers to administrate the survey. The students had completed the majority of the ninth grade year with only final exams and end of year activities left in the school year. Also, it is necessary to acknowledge that students MYP experience is dependent on the degree to which the whole school community implements the MYP. It is likely that the schools used in this sample implement the MYP with varying degrees of fidelity and quality.

All the teachers included in the sample were from schools that have at least one type of International Baccalaureate program (Middle Years Programme and/or Diploma Programme). The students who completed the survey where from both MYP and non-MYP schools in one urban/suburban public school district. The International Baccalaureate Middle Years Programme is implemented at some schools based on district leadership decisions and not necessarily based on the desires of the teachers and students at the schools. That is not to say that the teachers and students at the schools do not support the program. Rather, it is to acknowledge that students and teachers had limited choice in

selecting to participate in the International Baccalaureate Middle Years Programme at their school. Keeping that in mind it is important to recognize that the International Baccalaureate Middle Years Programme is a program of international education that promotes international mindedness and requires schools to meet a set of standards before being authorized and able to use the IB logo. In chapter 2 the authorization process to become and maintain the IB logo is detailed. Each of the MYP schools used in the sample was an authorized IB school; meeting the required standards.

An additional limitation of the study relates to the use of the Global Mindedness Scale (GMS) (Hett, 1993). The use of the GMS suggests an acceptance of the five dimensions of global mindedness as the foundation for this study. Teachers and students participating in the International Baccalaureate Middle Years Programme who are aware of the mission of the programme may respond to the survey questions with a sense that the GMS suggests some level of social desirability and that there are “right” responses. These students and teachers may complete the survey as if they are more globally minded than they actually are because there could be a feeling that they should be globally minded. Hett (1993) even suggested that there could be some minor effects related to responses on the survey because of the sense of social desirability especially during times of war and global conflict.

## Definition of Terms

Cultural Pluralism: an appreciation of the diversity of cultures in the world and a belief that all have something of value to offer. This is accomplished by taking pleasure in exploring and trying to understand other cultural frameworks (Hett, 1993).

Efficacy: a belief that an individual's actions can make a difference and that involvement in national and international issues is important (Hett, 1993).

Global centrism: thinking in terms of what is good for the global community, not just what will benefit one's own country, a willingness to make judgments based on global, not ethnocentric standards (Hett, 1993).

Globalization: a multidimensional phenomenon that employs a process approach, which intensifies and connects global flows of knowledge, power, economy, technologies, people, values and ideas across borders with a variety of affects (Cohen and Kennedy, 2000; Held, 1995).

Global mindedness: a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors (Hett, 1993).

Interconnectedness: an awareness and appreciation of the interrelatedness of all peoples and nations, which result in a sense of global belonging or kinship with the human family (Hett, 1993).

International mindedness: described through the attributes of the IB learner profile as an openness to and curiosity about the world and people of other cultures, which serves to develop a profound level of understanding of the complexity and diversity of human interactions (Hill, 2007).

Responsibility: a deep personal concern for people in all parts of the world which surfaces as a sense of moral responsibility to try and improve conditions in some way (Hett, 1993).

### **Organization of the Study**

This quantitative, exploratory research study consists of five chapters. The first chapter presents an introduction followed by the statement of problem, purpose, significance of the study, limitations to the study, and definition of terms. The second chapter provides a conceptual framework and review of the literature of topics relevant to the study. The third chapter discusses the research design and methods proposed for this study including information related to the study sample, survey instrument, research methodology, and data collection and analysis procedures. The fourth chapter presents the findings and results of the study including an interpretation and analysis of the data. The fifth chapter includes a discussion of the findings and potential future research.

## CHAPTER 2. LITERATURE REVIEW

The purpose of this exploratory study is to investigate the relationship between global mindedness and student academic performance and global mindedness and teacher characteristics. This chapter includes a review of the literature that introduces the theoretical framework and conceptual understandings related to this study in the areas of globalization, international education and the development of global mindedness. In addition to this, the impact of student academic performance will be reviewed as it relates to international education and the teacher experiences as they relate to global mindedness in an international education program.

The purpose of this study is to highlight the complex and ambiguous effects, both negative and positive, of globalization related to education. As suggested by Burbules and Torres (2000), this perspective acknowledges the multifaceted nature of globalization, meaning, globalization is not all bad or all good. Aspects of globalization impact differently for different people and therefore; can be put on a continuum of bad to good. Depending on the people and the degree to which they are impacted determines the extent in which globalization is seen as positive or negative. It is a conflicted situation of sustained tensions and difficult choices that can be operationalized in a more equitable and just way. The use of the International Baccalaureate and its focus on global mindedness for this research is a way to highlights the extent to which globalization could be impacting students and teachers at the secondary level. To provide an example of the development of global mindedness within a school community, an overview of the International Baccalaureate's Middle Years Programme (MYP) will be provided along with



a historical perspective of this non-governmental organization, which oversees the development and authorization of educational programs that promote international mindedness in action.

The discussion and analysis of the MYP and international mindedness will be followed by a more comprehensive synthesis of global mindedness, which furthers the definition of international mindedness through the development of a broader, global perspective that promotes a sense of global belonging (Hett, 1993). The five dimensions of global mindedness (cultural pluralism, global centrism, efficacy, interconnectedness, and responsibility) and their relationship to student academic performance and teacher experiences will be identified to provide an understanding of the essential elements that will support the effective preparation of future generations that are living in a globalizing nation-state.

### **Globalization: Understanding a Multidimensional Phenomenon**

As it relates to this study, it is important to identify the conflicting theoretical perspectives as a way of presenting a framework for how the concept of globalization is approached and related to education. It is not the intent of this study to present a review of all existing theories on globalization. A review of the literature indicates that even if globalization is seen as a fad there are real changes happening in relation to economics, politics, and culture that produce an abundance of opportunities and challenges depending on the perspective, agenda and driving force (Burbules and Torres, 2000). Globalization is often considered to be a multifaceted phenomenon because it can be seen in so many disciplines (finance, technology, politics, culture, media, etc.) and there is not a single center or one person or nation-state orchestrating the evolution of the concept. There is not one entity that has total control of

globalization. As a result, globalization is evolving in uneven and non-uniform ways (Apple, 2004). For some, globalization means the expansion of financial markets and growth in the knowledge economy and technology to support the growth of transnational commerce, while others view globalization as a cover for hegemony by the Westernized world that perpetuates the gap between rich and poor, and others view globalization as the decrease in power of the nation-state and an increase in power of transnational organizations and world systems (Apple, 2004; Burbules and Torres, 2000; Stromquist, 2002). These different perspectives of globalization have created distinct delineations which are often dependent on the disciplinary lens through which the concept is discussed and may explain the contradictory arguments related to the origin and impact of globalization (Burbules and Torres, 2000; Stromquist, 2004).

From a historical perspective, globalization is not a new phenomenon. It has been occurring for a number of years and many refer to the postindustrial society as an example (Burbules and Torres, 2000). Others might even suggest that colonization was a form of globalization. Now, however, globalization is happening in a revolutionary phase and is often used to justify dramatic changes in economic, political, and cultural priorities. Some argue that the concept of globalization is too easily used to pressure nation-states into conforming to the demands of the transnational institutions. Those favoring the concept of globalization are criticized for using the rhetoric that, “globalization is inevitable” as a driving force for their position (Burbules and Torres, 2000). In contrast, others argue that globalization is a more recent phenomenon brought about by major technological advancements, especially in the context of communication in which peoples from distant parts of the world are interconnected through changing concepts of

time and space. There are more opportunities for cultural interactions related to common global issues and interdependencies, which interact and are mutually reinforcing (Yergin, 2002).

Regardless of the point-of-view related to the evolution of globalization, each perspective acknowledges the convergence and blending of a variety of disciplines, which contribute to the advancement of the multifaceted concept. This study, therefore, defines globalization as a multidimensional (economic, political, and cultural) phenomenon that is interconnected and contributes to the flows of knowledge, power, technology, people, values, and ideas across the world impacting lives of individuals all over the world in varied ways (both negative and positive) and degrees (Cohen and Kennedy, 2000; Nordgern, 2002). In light of this conceptualization of globalization the use of critical theory ensures a perspective which acknowledges the potential benefits and recognizes the negative effects of globalizing forces, especially for the poor and disenfranchised populations (Burbules and Torres, 2000; Stromquist, 2002; Suarez-Orozco and Qin-Hillard, 2004). Critical theory acknowledges the hegemonic forces of globalization and provides some understanding for this study, which organizes and analyzes both the connections and disconnections between dimensions such as economics and culture with the goal of managing these connections to transform the impact of globalization to be a more favorable outcome (Giroux, 2003). This study will analyze the stated mission of the International Baccalaureate and its place in the broader context of globalization, which recognizes both the positive and negative forces on education in the United States and abroad.

## **Impact of Globalization on Education**

Globalization has a prominent impact in many domains; however, it is most critical in education (Kagan and Stewart, 2005). Education is the most commonly shared experience among humankind in the contemporary world and innovations in one setting have the potential to be hugely impactful in other settings. For example, comparative studies of educational strategies used in a variety of nations can inform practices across the world improving equity and excellence. This is especially relevant and significant with the increase in migration of people and cultures across the world. If we seek to educate all the world's children for a new global era the traditional local practices will not support the teaching and learning for all students of varied backgrounds and cultures. Additionally, globalization and education are intertwined. The multiple dimensions that define globalization also have the potential to impact education and, that being the case, Capella (2000), explains, "the educational sphere is probably one of the areas in which the consequences of globalization are most seriously felt" (p. 227).

Education is directly related to the increasing competitiveness of the world economy, the growing interdependence among countries, and the interconnectedness of human development and economic growth. This global interconnectedness suggests that the economic, political, and cultural forces related to globalization have the potential to impact education (Burbules and Torres, 2000). The responsibility to develop global citizens falls more heavily on education systems in this phase of globalization than it has in the past. The economic powers such as multi-national business and trade are expecting that education prepare students to be producers

and innovators in the 21<sup>st</sup> century. Additionally, education is to prepare students to be thoughtful consumers while other influences will try to persuade students to be voracious consumers. These expectations have changed from the past, more traditional goals of education which were to produce quality citizens who are able to perform to a standard and contribute to their local community (Burbules and Torres, 2000). From a political perspective, the nation-state decisions are now, more so, impacted and influenced by external demands from transnational institutions. These decisions have unintended human consequences yet to be seen in relation to growth of the global connectivity, environmental shifts, global violence and terrorism. Education has the potential to influence the human reactions to these consequences. Previously, decisions made by the nation-state to serve the nation-state were not influenced by so many different factors and did not have so many factors to consider. From a cultural perspective, the homogeneity of the curriculum must be considered. Is the uniformity of the curriculum because of the demand to perform on the international, standardized tests or is it to prepare students for the local, regional, national and international world? Is the uniformity dominated by a Western perspective of the knowledge, skills, attitudes, and behaviors a student should possess and if so, who benefits most from this teaching and learning? The brief examples provided above highlight the significant impact of the economic, political, and cultural dimensions of globalization on education.

Although globalization in terms of the economics, politics and cultural dimensions have the potential to significantly impact education, the most recent economic challenges facing the world have dominated conversations related to globalization and education. The global

marketplace demands an internationally competent work force. For example, trade and returns on international business investments have risen from 13% to 30% in the last three decades (Apple, 2004). Already, one in six of the nation's (United States) jobs are tied to international trade. Pink (2005) cited a study conducted by Forrester Research that highlights the end of the age of optimism with findings that indicate:

At least 3.3 million white-collar jobs and \$136 billion in wages will shift from the United States to lower cost countries and that in addition to this, nations such as Japan, Germany, and the United Kingdom will experience similar job loss and by 2015, Europe will lose 1.2 million jobs to offshore locales. (p. 39)

These projections highlight the driving force and agendas for many developed countries that are striving to create a more globally competitive workforce so they have more power and authority internationally (Friedman, 2005; Gardner, 2004; Suarez-Orozco and Qin-Hillard, 2004). Critiques of globalization would suggest that the focus on economics and a competitive edge in the global marketplace take precedence over the suggestions to teach collaboration and some of the other developmental skills Wagner (2008) describes in the *Global Achievement Gap*; that would be necessary to participate in a globally interconnected world. The dominant focus on student achievement and accountability seems to only address education concerns related to global economic power and competition (Noddings, 2005). And, thus far, the focus on student achievement and accountability in the United States has merely highlighted the divide between the rich and poor. Although *No Child Left Behind* significantly changed education in the United States by requiring schools to account for students as individuals and to analyze data like never before, the law did not close the achievement gap or reduce the disparities between rich and

poor. This trend could be predicted to continue on a global scale unless developed and developing countries put more value on the development of global mindedness.

Although numerous challenges to education are brought to light through the study of globalization, there has been a lack of significant change or innovation in the education system. Further, there has been the development of national standardization of curriculum in developed countries across the world. Recently in the United States, the Common Core State Standards Initiative was initiated. It is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) (The effort was not even led by educators; it was led by politicians). The CCSSO website states, "The standards were developed to provide a clear and consistent framework to prepare children for college and the workforce." There is blatant acknowledgement that the goal of the standards for education in the majority of public schools in the United States is to prepare students for global economic competition with little consideration for issues of social justice, equity and diversity (Apple, 2004; Burbules and Torres, 2000; Stromquist, 2002). Many schools appear to remain relatively unaffected amid the dramatic changes in form, content, and accountability that have emerged as a response to globalization. Critics of globalization suggest the lack of significant change and the move towards a curriculum and academic standards that emphasize a national focus has the potential to foster the development of a purposefully hegemonic perspective (Apple, 2004).

When considering the impact of globalization on education, educators must recognize and acknowledge the competing economic, political, and cultural agendas. Until then, it is unlikely

that significant changes in teaching and learning will occur. Schools will continue to use traditional structures and approaches despite the fact that the population they serve has changed and is in need of new and different knowledge, skills, attitudes, and behaviors. In order to address these changes and the complexity of the multifaceted phenomenon of globalization in education, schools must re-think the written, taught, and assessed curriculum and the need for a global perspective (Bloom, 2004; Burbules and Torres, 2000). Globalization has the potential to both expand and enhance the life chances of a greater array of people within a society including the redress of past injustices and inequalities (Ball et al., 2010). These types of expansions and enhancements require a demonstration of the dimensions of global mindedness (cultural pluralism, efficacy, global centrism, interconnectedness and responsibility) within school communities regardless of location throughout the world. The globally-minded view of education must be a priority if we are to ensure the development of an education system and students who are equipped with the knowledge, skills, attitudes, and behaviors necessary to address the complexities and injustices which they will face in an interconnected, rapidly changing, multidimensional world (Burbules and Torres, 2000; Stromquist, 2002; Walker, 2008).

### **The Significance of Student Academic Performance**

Researchers present both positive and negative arguments on the impact of globalization but all acknowledge that globalization has already affected and will continue to affect economic, social and cultural life significantly. The impact of globalization is only going to deepen and both the positive and negative consequences will be more broadly felt. For children



to live successfully, both economically and socially, in a better and more peaceful world, they will need the requisite skills, knowledge, attitudes and perspectives (Zhao, 2010). One of the greatest predictors of students acquiring those requisite skills, knowledge, attitudes and perspectives is their academic performance in college and high school. School attainment profoundly affects the productivity and earnings of individual workers (Burtless, 1996). From an economic perspective, studies consistently find that the increase in educational attainment of the American worker account for as much as a quarter of the growth in output per person employed (Burtless, 1996). Other researchers acknowledge there is a correlation between school attainment and earnings but do not believe it as strong. Additionally, they suggest a myriad of factors, including the stability of a country's economic, political, and legal institutions, also contribute to an individual's productivity (Cavanagh, 2012). At the same time these researchers do acknowledge that an educated workforce is widely regarded as critical to producing innovations and allowing businesses to make use of them (Cavanagh, 2012). The more education a worker has the greater possibility they have to be employed and have higher earnings. Further, statistics show that college graduates earn far more than high school graduates (Wagner, 2012). From a social perspective, high unemployment and poverty go hand in hand (Wilson, 1996). There is a relationship between high unemployment and lack of education. Additionally, there is a relationship between high unemployment and rising crime, worsening social dislocation: increased divorce, worsening health, elevated mental illness and lower life expectancy (McKee-Ryan et al., 2005). Any improvements in schools that impact student achievement could have vital implications for students, employers, taxpayers,

communities, etc. (Burtless, 1996). Greater student achievement influences educational attainment, which subsequently impacts both the economic and social stability of a society.

At the same time that we consider the correlation between student achievement and economic survival in the 21<sup>st</sup> century we must also consider additional fundamental shifts that have taken place as a result of globalization to date. In his book, *Developing Innovators*, Tony Wagner identifies three key shifts that must be considered as we evaluate the importance of student achievement and rethink educational goals:

- The rapid evolution of the “knowledge economy”
- The sudden and dramatic shift from information limited in terms of amount and availability to information characterized by flux and glut
- And, the increasing impact of media and technology on how young people learn and relate to the world and each other (Wagner, 2012).

Wagner goes on to suggest that the new economy demands higher skills that if not acquired in a post-secondary experience, students are immediately at a disadvantage. The only way students will be prepared to take on the challenges in a post-secondary setting is if they are better prepared and have higher student achievement coming out of high school.

Today, students must compete for jobs with an increasingly greater number of well-educated young people from around the world. In order to be globally competitive, students need something different from the traditional education, students need to be successful in mastering content knowledge and they need to possess the core academic skills such as creativity, diversity of talents, critical thinking skills, entrepreneurship, right-brain directed skills, global competencies, and a host of other abilities and knowledge not included in the current curriculum and testing (Pink, 2005). Zhao (2010) specifically suggests that American

education needs to cultivate talents and skills in students who cannot be done cheaper overseas. There is no reason that thought could not be developed further and any country that wants their students to compete in a globalized world must cultivate in students the talents and skills that go beyond content knowledge. For example, today, Indian engineers make \$22,000 a year against the \$116,000 for an American engineer with the same qualifications (Ojo, 2009). Schools, in developed nations, like the United States, have to justify the higher cost to the employer and one of the major considerations is the curriculum and pedagogy necessary to ensure high student achievement in both the content knowledge and the core academic skills needed to be successful and deserving of the higher paying jobs in a globalized economy (Pink, 2005).

Most would agree that education and student achievement are closely related and important to economic prosperity, individual social mobility, and a healthy civil society where informed voters engage in public matters (Metha, 2013). And education and student achievement are becoming increasingly more important as we move from a manufacturing economy to a technology-based information economy (Darling-Hammond, 1997). According to the U.S. Census Bureau, the average annual 2005 earnings of workers 18 and older with an advanced degree was \$79,946. This compares with \$54,689 a year for those with a bachelor's degree, \$29,448 for those with a high school diploma, and only \$19,915 for those without a high school diploma (Bonvissuto, 2007). The knowledge and skill demands of jobs in all sectors of the economy are changing rapidly and requiring many more of those core academic skills rather than the rote content knowledge that was rewarded in the past. Students who are poorly educated have fewer opportunities to secure jobs that provide a living wage and are

increasingly at risk of unemployment (Darling-Hammond, 1997). Mastering of reading, writing, and math are no longer sufficient to be successful in a globalized society. Now, both blue and white collar jobs require employers to solve a range of intellectual and technical problems. Wagner (2008) suggests that 85% of current jobs and 90% of fast growing and best paying jobs now require post-secondary education.

At the same time, students are graduating from both college and high school unprepared for the world of work. Recent evidence suggests that cognitive ability plays a significant role in determining worker productivity and job market success (Burtless, 1996). Rosenbaum (2001) uses both cognitive skills (test scores) and non-cognitive behaviors in high school to predict earnings 10 years later. His results are similar to those of Jencks et al., (1979) – both test scores and non-cognitive behaviors determine earnings 10 years later and leadership is the most important of the non-cognitive behaviors. Higher cognitive ability increases the likelihood that students will continue in school, have higher educational attainment, and generate increased productivity and earnings (Burtless, 1996). The current philosophy is that all students need to be exposed to more challenge to be better prepared for college and/or the workforce and the new economy (Lee and Ready, 2009). Only one-third of United States high school students graduate ready for college today and the rates are much lower for poor and minority students. Furthermore, 40% of all students who enter college take remedial classes (Wagner, 2008).

In 2006, the United State Department of Education published a report entitled, “The Toolbox Revisited: Paths to Degree Completion From High School Through College.” It is a

replication of a data essay done two decades earlier with the same research questions.

Interestingly, the findings published in 2006 are very similar to the 1982 findings and both suggest that improvement in quality of the high school curriculum is necessary and an even greater proportion of students need access to the improved curriculum (Adelman, 2006). The *Toolbox Revisited* (Adelman 2006) recommends that raising the standard by establishing high school graduation requirements is important but just as important is the need to describe and validate what students have learned and whether the learning links smoothly with the performance expectations of the post-secondary world. In the 2006 report, Adelman (2006) found that 83% of students whose highest math class was calculus graduated within 8 years from college while only 40% of students whose highest math class was Algebra II graduated within 8 years. Students who completed more advanced courses in high school had higher achievement gains. In the 1990s 80% of high school students in the top one-third of household income distribution completed geometry compared to only 46% of students in the bottom third of income distribution (Lee and Ready, 2009).

While all education institutions have an important role to play in the improvement of the education system as a whole there is a very clear challenge in high schools today because students who have academic success in high school are more likely to have academic success in college. High school students who graduate with higher test scores, better grades, and more rigorous course work are more likely to enroll and graduate from four year colleges (Roderick et al., 2009). Academic success in college directly impacts career and economic earnings and people with higher earnings have fewer social challenges. There is a need to improve college

readiness for all students by increasing student achievement in high school. And, students report that they aspire to greater achievements. In 1980, 40% of ninth graders reported that they would like to attend college and in 2002, 80% of ninth graders reported a desire to attend college (Roderick et al., 2009). The aspirations were shared across racial groups with low-income students registering the greatest increase in aspiration from 1980 to 2002 (Roderick et al., 2009).

As the 21<sup>st</sup> century unfolds, it is increasingly clear that U.S. schools must better prepare students with a wide range of learning needs and from diverse backgrounds to possess more sophisticated skills than those rote learning skills taught in the past, otherwise, they are unlikely to have a better chance at success in college and career (Darling-Hammond and Barry, 1999). High schools must begin to measure their success based on the performance of their graduates. In order for high school students to thrive both economically and socially in the ever-changing world they must be prepared, or as many researchers have shared, students must be “college ready.” Roderick, et al. (2009) find that the three most commonly recognized indicators used by colleges to determine college readiness are the coursework required for college admission, achievement test scores (SAT and ACT), and grade point averages. Using these three indicators requires high schools to prepare students not just with the content knowledge often acquired in advanced courses – it also requires schools to teach all students the core academic skills. Conley (2007) argues that the largest difference in skill demands between high school and college courses are the core academic skills – particularly in the amount and type of reading and writing required and the analytic and thinking skills emphasized. Using the multiple measures

to prepare students to be college ready gives them an opportunity to show what they know in a variety of ways which can be an incentive for secondary schools to consider what and how they teach. It is also an assurance to colleges of a high-quality student body.

Interestingly secondary schools are just starting to collect data on student success after graduation and whether or not students obtain and maintain a job – and the type of job they seek. Schools in general, are seen and considered responsible for student success. However, teachers take student success very personally and often are invested in their academic success (Burtless, 1996). After all, the main goal of most educators is the academic success of their students (Darling-Hammond and Barry, 1999). Having said that, schools have not changed while globalization has changed the world. In the 21<sup>st</sup> century, secondary schools are not just failing behind, they are becoming obsolete (Wagner, 2008).

If secondary schools are to better prepare students for college and career readiness they need to make a shift away from the focus on teaching content knowledge and preparing students for standardized test that require minimal critical thinking and minimize the use of core academic skills (Roderick, et al., 2009). Secondary schools need a total change – a rethinking of what is most important including the consideration of enlisting highly qualified teachers. Darling-Hammond (1997) argues that “either schools will get serious about the improvement of teaching – and the development of schools that support powerful teaching – or schools are likely to see the slow dismantling of the public education system in the United States, a preface to the undoing of democracy” (p. 4).

## **Teacher Impact on Student Academic Performance**

Kagan and Stewart (2005) explain that it is time to adopt a new worldview. It is time to be open to others' practices and be willing to share our experiences as we seek to educate all the world's children for this new global era. In order to best prepare all the world's children for the new global era, schools need to change what and how they operate with a significant focus on teacher practices. Findings from various studies on teacher effectiveness indicate that at least 21% of the variance in student achievement is related to teacher effectiveness. That is more than any other factor than influences student achievement, even the socio-economic status of the child (Wallace, 2009).

Fundamental to the education of children is the competence of a teacher, a belief that is both intuitive and supported by numerous research studies over many years (Eisner, 2000). Teaching is a form of expert work that requires extensive professional skills, professional preparation, strong knowledge of the subject, variety of pedagogical skills and the ability to create a dynamic classroom environment (Rowan et al., 2002). Research done with various student populations, across decades, and different locations consistently finds that what the teacher knows is the greatest contributing factor influencing what students learn (Boyd et al., 2009; Bright, 2011; Darling-Hammond, 1997; Eisner, 1995; Goldhaber and Bower, 2000; Kaplan and Owings, 2001; Wang et al., 2010; Wayne and Young, 2003). Students have fewer academic successes when they are taught by a less effective teacher over the course of a school year (Rowan et al., 2002).



Teacher effectiveness implies what a teacher does to promote student learning inside the classroom but the impact of the teacher is often measured using some or all of the following variables: teacher's college rating, teacher's test scores, teachers degree and coursework, teacher's certification status, teacher's score on the certification test, teacher to student ratio, and number of years teaching (Wayne and Young, 2003). Student achievement is most often measured using standardized tests, student grades, student attendance, and student participation in after school activities and/or student grade point average (Rowan et al., 2002).

The academic achievement of the student depends substantially on the teacher. Studies confirm that there is a positive significant relationship between student achievement and teacher's measured verbal ability. Wenglinsky (2000) found that students whose teachers majored or minored in the subject they teach out-performed their peers on standardized test by about 40% of a grade level in both math and science. The findings show that students make greater gains in math when their math teacher has a teaching certification in math as compared to students whose teacher held either no certificate in math or earned their teacher certification from a private post-secondary school (Wayne and Young, 2003). The most interesting findings in the Wayne and Young (2003) study on teacher impact on student achievement was the absence of a correlation between the teacher's experience, number of years teaching, and the relationship to student academic achievement. Of twenty-one qualifying student achievement studies evaluated, nineteen used information about how many years teachers had been teaching and most of the findings showed a positive relationship between years of experience and

increased student achievement. But the overall results were not substantial enough for the authors to make a general statement (Wayne and Young, 2003).

At a time when the world is transforming in a fast-paced knowledge economy where both the positive and negatives impact of student achievement will be significant, research confirms that a capable teacher is an essential requirement between the public aspiration of high quality schooling and high student achievement. A recent study by the Bill and Melinda Gates Foundation showed that of more than 3,000 classrooms observed in the United States researchers found that over 60% were competently managed but only 20% showed that students were engaged in ambitious learning that challenged students to think, reason, and analyze text or problems (Mehta, 2013). Not surprisingly the lack of effective teachers demonstrated through ineffective instruction is mirrored in student academic achievement. The most important variable in student classroom performance is the teacher (Bright, 2011). Results from the National Assessment of Educational Progress consistently show that two-thirds or more of American students of all ages have mastered basic skills, such as reading and recalling general information, but only one-third can do more advanced work that involves the application of information or analysis (Mehta, 2013).

The significance of effective teaching has become increasingly more clear and vital in the ever-changing society. The standards for learning are now higher than they have ever been before, citizens and workers need different knowledge and skill to survive and succeed (Darling-Hammond, 2006). Education is increasingly important to the success of both the individual and the nation. The increasing and consistent findings that among all educational

resources, teacher effectiveness – is the greatest factor to predicting student success suggest that the profession of teaching needs serious evaluation and reform.

In today's classrooms, teachers are being asked to ensure that all students have the content knowledge and core academic skills needed to be contributing global citizens, not just the 10% - 20% of students who have traditionally been selected into "gifted and talented" or honors programs (Darling-Hammond and Barry, 1999). Central to the quality of teaching is the teacher's in-depth understanding of what they need to teach and the most effective pedagogical practices that should be used to teach all students. Teachers are called on to go beyond content knowledge to teach students about relevant moral and social responsibility and culturally appropriate knowledge and skills (Wang et al., 2010). The educational needs in this global society have come to the forefront and many researchers suggest that teachers are not prepared with the relevant capacities, knowledge, and skills to adapt to the inevitable needs of social transformation (Wang et al., 2010). As the realities of both the positive and negative effects of globalization take hold, it has become more and more apparent that the profession of teaching has and will continue to change. Therefore, teacher preparation and professional development must change and evolve as well.

At this point in history there is no uncertainty that teachers are primarily responsible for ensuring that students learn and are academically successful so they can succeed in the global economy (Zhao, 2010). Now, we need to develop a diverse, well-prepared and culturally responsive teaching force that establishes a foundation for schools to maintain a fair and prosperous society (Darling-Hammond, 1997a; Valli et al., 2008). High schools will have to

build instructional environments where students can learn content knowledge and core academic skills, as well as develop the non-cognitive skills that have traditionally not been in the domain of most high schools (Roderick et al., 2009). High schools will have to make a fundamental shift in teaching and learning to better prepare students for success in a globalized world.

Teachers have to be responsive to the needs of their students. Teachers need to have the knowledge of what their students bring (and do not bring) to school, the ability and skills to interact with students with different language capabilities and background knowledge, the understanding of the students' home and culture, and most importantly the mindset that all students have the potential to learn and grow. The teacher belief system directly relates to the willingness of the teacher to ensure that the student learns and succeeds in the classroom (Dweck, 2009). Teacher qualification and student class size together accounted for more of the predicted difference in districts scoring in the top and bottom quartiles in math than did the combined effects of poverty, race and parental education (Darling-Hammond and Barry, 1999). Research on student performance on standardized tests does show that teacher licensure (or not) and teacher scores on licensure exams do impact student achievement. Schools that have more teachers with licenses (and higher scores on the licensure exam) significantly out-perform schools and systems that do not hold teachers to the same standards (Goldhaber and Brewer, 2000). A thorough review of the research shows that over the past 30 years there is significant evidence that the most important qualities a teacher must possess to be effective are: teachers'

knowledge of the subject matter, pedagogical knowledge and skills, and teacher belief in student capacity (Darling-Hammond and Barry, 1999).

Many analysts have noted that currently there is little relationship between the organization of a typical American school and the demands of effective teaching and learning that will prepare all students for academic success in a global economy (Darling-Hammond, 2006). To be an effective school in the 21<sup>st</sup> century schools must ground themselves in two essential premises: (1) teaching matters and the effectiveness of the teacher has the greatest impact on student academic success, (2) the relationships teachers develop with students matter. One of the only ways teachers will be able to foster the knowledge and skills all students need in the globalized world is if they have positive, meaningful relationships with all students (Darling-Hammond, 1997). Since 1996 researchers have been suggesting that teachers must consider more than the content knowledge they want to impart on students, they must consider how to teach students who learn and understand content differently. Teachers need to possess the global competences to be able to prepare all students for the globalized world. Teachers need to have the ability to speak, understand, and think in a foreign language. They need to be knowledgeable of the global system and world history, geography, and other global issues such as health, economics, and of other cultures (Zhao, 2010).

Schools need teachers who understand the implications of globalization and are able to effectively work with an increasingly culturally and linguistically diverse student population and to deliver a globally oriented curriculum. Teachers need to be globally competent themselves if they are to prepare students for success and active citizenship in a globalized

world. A globally competent teacher, according to a report published by the Longview Foundation (2008), should have the following:

1. Knowledge of the international dimensions of their subject matter and a range of global issues,
2. Pedagogical skills to teach their students to analyze primary sources from around the world, appreciate multiple points of view, and recognize stereotyping,
3. A commitment to assisting students to become responsible citizens both of the world and of their communities. (p. 7)

It is imperative that teachers change and expand their practices in clear and immediate ways; student academic success is determined by the effectiveness of the teacher. If teachers are to be effective they need to be globally competent. A new generation of teachers is needed: teachers who are able to act as global citizens and deliver a globally oriented education. It is possible to educate all children well. The question is whether educational leaders and teachers have the determination and perseverance to make significant shifts in philosophy, organization and curriculum (Bright, 2012). Educators need the support and the courage to lead schools into a new era of renewal and relevance for students to succeed individually, locally, nationally and globally in an ever-changing world (Darling-Hammond, 1997).

### **International Education Expands Globally**

When considering the shift that is necessary in education that includes the development of a global perspective, educators may find some assistance through an evaluation of international education programs that espouse the importance of concepts such as international mindedness, shared humanity and service to others. The concept of international education surfaced back in 1851 at the World's Fair in Paris where an international congress on education was held (Sylvester, 2007). The goal of the session was an attempt to look at education beyond

the nation-state. Education continued to be a topic at future Universal Exhibitions and in 1876 there was an International Conference on Education held in Philadelphia. Around the same time the International College at Spring Grove, London, England opened. Stewart (1972) categorized the school as the single success in international education in the nineteenth century. High school age students from numerous European countries attended the international school of Spring Grove for their secondary education. The school leadership felt that it naturally recognized and intentionally considered international mindedness because of the diversity of the student body but there is no record of an actual curriculum that specifically taught international mindedness.

In the late nineteenth and early twentieth centuries, international education was understood as students being educated in a school with many different nationalities or moving between a network of institutions across a number of countries to learn languages and to experience different cultures (Sylvester, 2002). This understanding was consistent with the goal established at the Conference of Internationally Minded Schools. At that time, it was thought that international education could only take place in an environment where people from diverse cultures were represented. Acknowledging this notion clarifies why it was for a long time that international education was associated exclusively with private international schools.

Increasingly, international education was discussed around the world and international schools popped up in many major cities but no one definition of international education was established, nor was there one specific model to represent international education.

International education was an elusive concept; often challenging to define and sometimes

confusing in its varied interpretations (Walker, 2004). Over time, international schools increased sufficiently in number, location, and common characteristics that the beginning of a movement became noticeable. After the Second World War, four associations of international schools met to collaborate on curriculum development, administration, recruitment of staff, teacher training, and annual conferences (Hill, 2007). These associations soon became one organization, known as the International Schools Association (ISA), which still exists today. The purpose of international education now included celebrating diversity.

As the number of international schools grew around the world a distinctive style of education was developed with an intentional focus on international mindedness. There was a gradual move beyond the make-up of the student body that made schools uniquely international in nature: an education that purposefully focused on international mindedness; broke down the barriers of race, religion and class; celebrated the benefits of cultural diversity; and, above all other factors, deliberately and unforgivingly promoted peace (Walker, 2011). At that point in the evolution of international education, five guiding tenets could be used to distinguish an international education (Walker, 2004):

1. To celebrate diversity as desirable for improving the human condition.
2. To promote understanding and respect for one's own and for other cultures.
3. To encourage a knowledge of issues of global concern.
4. To recognize the limitations of a humanist education.
5. To share with others an understanding of the human condition. (p. 8)

International education grew out of the idea that international mindedness could be "caught" if a diverse group of students was merely taught in the same classroom. As schools evolved and



educators realized – international mindedness could and should be explicitly taught. The Head of the International School of Geneva and eventual co-founder of the International Baccalaureate Diploma Programme, Desmond Cole-Baker, saw that international education need not be limited to private international schools when he said, “In a true international school (of diverse cultures), international education is a question of environment; in a national school it is a frame of mind,” (Cole-Baker, 1989, p. 277). As the concept of international education expanded over the years, this idea has been analyzed, dissected, and fortified in an attempt to explain the purpose and growth of the International Baccalaureate (IB).

### **International Education Develops in the United States**

To best understand the growth of international education in the United States it is important to relate the development to the broader historical national and international context. Schools operate as part of a societal structure that dictates what is taught, and how and when it is taught to their students (Tye, 2000). Before World War I, the major role of schools in the United States was to assimilate waves of immigrants, mainly European, into the “American Way of Life” (Kurkwood-Tucker, 2009). This focus of education explains why American history, civics, and economics were taught throughout K-12 schooling at that time. However, it does not explain why these same subjects are still taught in a very specific sequential order today in U.S. classrooms.

After World War I, education was influenced in large part by President Woodrow Wilson’s passion for peace and the fear of rising totalitarianism throughout the world. Many educators began to include an international perspective in their teaching that advocated for

changing the existing U.S. foreign policies. Interestingly, the perspective to be open-minded was stressed while at the same time there was a reluctance to participate in international affairs and a recommendation to avoid teaching all controversial issues like pacifism, disarmament, and politics in general (Kirkwood-Tucker, 2009).

Beginning immediately after the end of World War II there was an emergent focus on the workings of the United Nations (UN) as well as efforts on the part of the U.S. government to encourage various aspects of international education to be taught in public schools.

Unfortunately, it was soon after that the Cold War began and dominated foreign policy for four decades. Additionally, in the 1950s McCarthyism dominated much of education policy and schools that promoted internationalism were ridiculed which caused teachers to shy away from the topics (Krikwood-Tucker, 2009). Ironically, it was also the Cold War that gave rise to a decade of investment in international education. In October, 1957, the Soviet Union launched Sputnik, the first man-made satellite. The U.S. government responded in 1958 by passing the *National Defense Education Act* that required funding for foreign language and area studies centers located at universities across the county. The focus of the area studies centers was to teach about lesser-known places in the world.

It was not really until the 1960s that international education truly had its beginning in the United States. There was now widespread interest in global affairs and could be clearly seen in the social studies curriculum. While there was not necessarily what we would call today international education developed in the curriculum there was an attempt to teach students a broader perspective. For example, the curriculum began to emphasize cross-cultural, cross-disciplinary analysis of human behavior and mentioned the fact that an individual life can

be viewed as an integral part of the larger flow of human existence (Bruner, 1965). It is also important to note that this change in curriculum was scrutinized and criticized by right wing political groups because of its emphasis on questioning such aspects of life. According to Tucker (1996), "In 1968, the idea of global education emerged from a landmark report by the Foreign Policy Association, funded by the U.S. Office of Education, titled *An Examination of Objectives and Priorities in International Education in the U.S. Secondary and Elementary Schools*" (p. 47). This report resulted in the publication of a special issue of *Social Education* titled *International Education for the Twenty-first Century*, edited by Anderson and Becker that, according to Tucker (1996), boasted "a veritable who's who of international educators" (p. 47). This publication rejected the idea of international education as a study of a collection of nations. Instead, it proposed a focus on problems and issues that cut across national boundaries.

In 1976 an important document entitled, *An Attainable Global Perspective*, was produced by the Center for Teaching International Relations at the University of Denver which promoted and detailed five interdisciplinary dimensions that should be used to teach from a global perspective: perspective consciousness, state of the planet awareness, cross-cultural awareness, knowledge of global dynamics, and awareness of human choices (Kirkwood-Tucker, 2009). Since its first publication, the work has been widely used and it has been reprinted a number of times. Today, the document and five domains remain relevant, timely and valid. In many ways, it is a classic in the literature of international education in the U.S.

Global education programs became fairly common during the 1980s and into the 90s. Along with the provision of instructional materials, in-service training of teachers, and travel-study courses provided by universities around the county, a number of foundations gave

significant support to schools and various organizations to develop and pilot test global education programs (Kirkwood-Tucker, 2009). At that time many argued for the teaching of global mindedness because the world was undergoing rapid globalization. Global trade and multinational corporate structures, the Internet and other forms of communication, worldwide media, rapid transportation, and massive human migration all made the need for global education perfectly obvious. Such conditions continue to exist and, in addition to environmental degradation, growth in hunger and poverty, and the expansion of conflict around the world, makes even a more compelling case and need for the teaching of global mindedness today.

Teaching students about the world in which we live has developed the pedagogical side of international education. The written curriculum began to evolve with a focus on both the descriptive and normative aspects of pedagogy. Teaching how systems of the world function; and how humans interact within those systems are the descriptive side of international education (Kirkwood-Tucker, 2009). In addition, international education includes teaching multiple perspectives, inter-cultural understanding, responsible citizenship, and more of the normative teaching: analysis, critical thinking and evaluation to name a few (Kirkwood-Tucker, 2009). The use of these pedagogical practices was left to the schools and teachers; some schools incorporated these ideas and others did not and the same pattern continues today.

Along with some changes in the curriculum teacher education is also faced with the urgent responsibility to transform in order to better prepare teachers in educating the young generation about the increasingly global, interdependent society and the importance of their role in that society. For many years scholars in education and professional organizations in

education such as the American Association of Colleges for Teacher Education (AACTE), the National Council for Accreditation of Teacher Education (NCATE), and the National Council for Social Studies (NCSS) have long called for international education in both the K-12 classroom and in teacher preparation programs (Kirkwood-Tucker, 2009). In the 1990s it became even clearer that the accelerating growth of interdependence in the economy, technology, politics, and culture demanded a global perspective be brought to the forefront of teacher education.

In order to educate the next generation in an effective way that will prepare them for the challenges of the future, teachers need to be attuned to the continuing evolution of global interdependence, develop geographic and intercultural literacy, model a value for and proficiency in foreign language(s), and become critical consumers of world needs (Guttek, 1993). Unfortunately, education policy that perpetuates the “mass production learning of the industrial age is not appropriate for the information age,” (p. 25) and it distracts teaching and teacher education from a focus on international education (Shakelee and Bailey, 2013). In both pre-service and in-serve teacher training it could be helpful if teachers had the opportunity to develop the descriptive and normative knowledge, attitudes and skills they need to teach their students.

One way the United States has begun to work on this challenge is to adopt common national standards and increase accountability measures of teachers and students in the classrooms. From a positive perspective, this implementation of common standards has increased the amount and type of professional development provided to teachers. At the same time, since the common standards were developed in support of a global knowledge-based

economy, the professional development provided to teachers is not necessarily new or different from what they received before. Rather, it may just be a greater amount of professional development. The emphasis of the standards is on the skills needed to produce workers that can compete in a global economy with the goal of enhancing the economic competitiveness of the United States (Shakelee and Bailey, 2013). This is not to suggest that the standards are in and of themselves problematic; the comparison merely illustrates that the need for teachers and teacher educators to extend beyond the core standards to intentionally educate young people to develop global mindedness (Shakelee and Bailey, 2013). In conclusion, international education in the United States had a slow start and is now at the point where it has been acknowledged and considered as a valuable aspect of both K-12 teaching and teacher education. The challenge remains in what to teach and how to teach it to ensure that students are prepared both for the knowledge based economy and every other aspect of globalization.

### **International Education and the International Baccalaureate**

According to Hill (2007), the IB philosophy of international education is focused on the knowledge, attitudes, and skills that are transmitted to the student with much attention given to the concept of intercultural understanding (within and between nations) as a major component of international mindedness. In addition, while public or government schools in various nations may be subject to the unpredictable influence of politics and economic agendas and have little control over the educational standards, the systematic approach developed by international education organizations, such as the IB, can engage a counter-hegemonic perspective of curriculum in a variety of nations around the world (Schoorman, 1999).

The International Baccalaureate (IB) was officially established in 1968 in Geneva, Switzerland as a not-for-profit educational foundation, to develop and maintain the new curriculum. The nature of the 'curriculum service' (as it was called at the time) was idealistic, pedagogic, and pragmatic (Hill, 2007). The IB began with the conceptualization of the IB Diploma Programme, an international curriculum and assessment that would prepare students to attend university anywhere in the world. The IB defined their program of international education at a summer course for teachers from around the world in 1950:

An international education should give the child an understanding of his past as a common heritage to which all men irrespective of nation, race, or creed have contributed and which all men should share; it should give him an understanding of his present world as a world in which peoples are interdependent and in which cooperation is a necessity.

In such an education emphasis should be laid in a basic attitude of respect for all human beings as persons, understanding of those things which unite us and an appreciation of the positive values of those things which may seem to divide us, with the objective of thinking free from fear or prejudice. (Course for Teachers Interested in International Education, Final Report 1950: Section 1)

This is the first published definition of International Education written by a group of practitioners from international schools and it correlates with the idealism and desire for a peaceful world that was popular after the Second World War. From its inception the IB envisioned that students would engage in an international education where the development of the whole person was just as important as the pedagogical considerations.

Carrying forward the ideals and dreams of the IB founders, and with the addition of a middle and primary years program in 1994 and 1997 respectively, this NGO exists to provide a high quality education to students around the world from the ages of 3-19 years of age.

According to the IB, the organization was created with the purpose to implement the following mission statement which reads:

The International Baccalaureate Organization 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 programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate, lifelong learners who understand that other people, with their differences can also be right.

The intention of the IB is to provide an international education that is idealistic with pedagogy rather than a specific content and structure at its core. Matthews (2005) reports that the founders wanted IB students to feel like Lewis and Clark mapping the unexplored Louisiana Territory with eyes open to all possibilities and not to feel so much like cyclists pedaling frantically to beat all their competitors in the tour de France, without any time to stop and appreciate what they were seeing.

The International Baccalaureate has further developed its initial intention of the type of education it aimed to create at international schools around the world. It is a particular style of education - broad, interdisciplinary, active, reflective, involving experiences like speaking more than one language and community and service, and pursuing a passion in-depth with the goal of inspiring students to want to create a better and more peaceful place to live and thrive (Walker, 2011). The IB works in four areas to address its mission: 1) development of curriculum, 2) assessment of students, 3) training and professional development of teachers, and 4) authorization and evaluation of schools (IB, 2011a). The IB provides an educational



framework for schools to guide the development of an international program of education that offers a comprehensive and perhaps practical view of an internationally minded education in action (Hill, 2007). To ensure quality and fidelity of implementation, the IB requires schools to use the IB programme standards and practices (See Appendix A). These programme requirements emphasize elements such as school philosophy, leadership, organization and the development of international mindedness in the curriculum, pedagogy and throughout the entire school community. Schools use these standards and practices to develop, evaluate, and reflect on their implementation of the IB programme.

Schools must provide evidence of growth in each standard and practice to the IB through an authorization and evaluation process. The authorization process is at least a three-year process beginning with a feasibility study and followed by two or more years of application development and review, including submission of a five year plan, development of course outlines, teacher training, and IB visits with stakeholders. If a school does not show progress toward meeting a standard than authorization and/or evaluation is not granted by the International Baccalaureate. The information provided in the application is verified by a visit to the school by outside IB practitioners. The visitors (trained and organized through the IB organization) complete a report and write a recommendation that is used to determine the authorization of a school. Then, every five years the school submits paperwork and host evaluation visitors (similar to the process and agenda used for the authorization visit) for an evaluation, which shows that the school continues to strengthen implementation of the program through more substantial evidence of meeting the standards and includes the required

continued training of school leaders and teachers. The process is meant to facilitate reflective leadership and teaching in the entire school.

Included in the authorization and evaluation processes is the requirement that school leaders and teachers must attend specified professional development training provided by the International Baccalaureate. The training has specific outcomes and participation is mandatory in order for the school to be considered for authorization or to continue to offer the program at the time of evaluation. For example, in order to offer the Middle Years Programme, a minimum of one teacher in every subject area and the school leaders must attend Category One training (see Appendix D: International Baccalaureate Professional Development) as part of the application process. The training is specific to the subject taught. Additionally, all trainings regardless of the subject begin with a focus on what is meant by international education and includes the philosophy, teaching and learning practices that must be used in IB schools. Then, schools must continue to send school leaders and teachers to training every year to meet the requirements of the International Baccalaureate. The International Baccalaureate exerts that it “provides high-quality, innovative professional development to help new, experienced and expert school leaders and educators understand, support and successfully deliver IB programmes by drawing on the expertise of a network of IB educators worldwide” (IB, 2014). In order to ensure the quality of IB professional development is not only maintained, but enhanced the IB has developed and uses a quality assurance framework (QAF) for professional development. The QAF is based on the training goals and objectives and uses multiple methods to collect feedback. It is designed to ensure that educators attending IB workshops have a

consistently high quality experience enabling them to successfully implement IB programmes in schools. Currently, the IB is training annually minimum of 60,000 educators worldwide and the majority are educators working in the United States (IB, 2014).

In addition to the training provided and required by the International Baccalaureate the MYP staff that completed the survey for this dissertation participate in on-going professional development, which includes regularly scheduled school-based training with an MYP coordinator that works full-time at their school to participating in continuing professional development workshops provided by the school district. Teachers can earn credit towards certification when attending the school district level training.

As the world becomes more complex and schools search for education programs that meet the needs of the 21<sup>st</sup> century learner the IB has become clearer in its definition and purpose of an in international education. In *The Changing Face of International Education* (Walker, 2011), Fabian states that, “we must be very clear in defining the content, structure and pedagogy of international education. Teaching about other countries and global industry is not international education. Rather, it requires:

- A curriculum that is focused on concepts and ideas that reflect many cultures and ways of thinking, through which national and local content can be taught and understood
- A structure that provides breadth and balance and sufficient flexibility for teachers to select content that is relevant, and which will result in deep and significant learning
- An approach to teaching that will enable young people to become internationally minded citizens and lifelong learners who embrace diversity, who can respond critically and creatively to complexity and whose choices are informed by the need to make the world a better, more equal, more sustainable and more peaceful place in which to live” (p. 36).

With that in mind the evolution of the IB can be seen in three distinct phases. At inception the IB grew rapidly in an unplanned and unregulated way through mostly international schools. As the programmes evolved in both number and diversity the IB dominates international education programming. While there are other international education programs like Cambridge and International Primary Years Curriculum being implemented around the world, none are implemented at the scale and degree of influence as the IB (Bunell, 2009).

The IB website reports that the IB currently serves more than 1,119,000 students of which more than 50% of those students are in state-funded schools. There are currently 3,641 IB authorized schools in over 146 countries with 2,454 IB Diploma Programmes, 1,015 IB Middle Years Programmes, and 1,065 IB Primary Years Programmes. The IB also reports that it has experienced and is projected to continue to experience a 15% growth rate yearly in the upcoming years. In 2004, the IB revised its strategic plan and projected that it would be serving 1 million children in 2014. Currently, the IB is already serving over 1 million children so it seems as if it is on target with its projected growth. Now, the IB is moving into a third phase of development, a stage of influence in which it will focus on planned growth, increasing access, and ensuring that a high quality program of international education is maintained.

This third phase of growth and development for the IB could be the most important phase yet since education has taken center stage in a time of inevitable and unstoppable globalization. The IB now has the credibility and proven scalability to act as an influential force in education (Bunell, 2009). The IB has the ability to act as a catalyst for the strengthening of education for international mindedness in national curricula. This is arguably what Walker

(2003) had in his mind when he suggested that the IB could realistically be influencing 100 million children in the near future. Some suggest (Bunell, 2009) that the influence of the IB has been slow to materialize. However, there is no doubt that the IB is in the spotlight now and has the opportunity to make a significant impact in education (Wilkinson, 2007). The IB began as an experiment – a way to serve the needs of a changing society – and it continues to innovate as it leads its way into a complex 21<sup>st</sup> century globalizing world (Walker, 2011).

### **The International Baccalaureate in the United States**

Spreading like wildfire, experiencing logarithmic growth, catching on in high schools throughout the United States are just a few of the headlines used by popular press to describe the growth of the IB in the United States in recent years (Osberg Connor, 2008). The IB began expanding in the United States through a cadre of international schools in the late 1970s. In response to *A Nation at Risk* report in 1983, which recommended a curriculum that teaches students to consider multiple perspectives, public schools slowly began to gravitate towards the IB Diploma Programme. The report expressed an urgent need to raise academic standards so that America could recapture its reputation of being at the forefront of innovation (Saphn, 2001).

The IB was attractive to schools that had a desire to increase academic standards because of its prestigious reputation among elite international schools. Public schools saw the implementation of the IB as an opportunity to expand advanced placement programming. Additionally, there was growing acceptance of the IB as a valid and reliable alternative to a regular U.S. public school education (Wilkinson, 2002). Initially the public schools that

implemented the IB had their focus on students identified as gifted and talented. In fact, the first few authorized IB Diploma Programme schools in the United States operated as magnet programs where a selected group of students participated in the requisite IB Diploma course work (a school within a school) (Saphn, 2001).

In addition, the expansion of the implementation of the IB in the U.S. was sparked by three key sponsors that wanted to contribute to the improvement of US public schools: Andrew Mellon Foundation, Geraldine Dodge Foundation, and the Exxon Corporation (Saphn, 2001). Most of the funds were used to make universities aware of the IB, not to implement the program; which could explain the slow growth at the on-set of implementation in the United States. Then, in 2001 the Bush administration announced it would issue 1.2 million dollar grants to implement IB programs in certain low-income school districts. Further, President Bush's 2006 education budget targeted \$52 million for making Advanced Placement and IB more widely available to public schools (Osberg Conner, 2008). In 2008, Obama's *Race to the Top* initiative and funding opportunity for public schools specifically identified the IB as a worthy partner that could be used in grant applications for funding to improve whole school programming. The IB was identified as an effective program that could be used for school reform.

At the time of writing there are 1,796 IB schools in the United States; that is more IB programmes in the United States compared to any other single country and it is more than all the IB programmes in all of South and Latin America (IB Annual Review, 2012). Interestingly, the greatest increase in programmes in recent years is that of the Middle Years (MYP) in the

United States. Although the MYP is in 90 countries throughout the world, over 60% or 643 MYP schools of 1015 MYP schools in the entire world are in the United States (IB Annual Review, 2012). As IB programmes expand at impressive rates in the U.S. the organization remains grounded in the intentions of its founders. Since the intentions of the IB have remained constant, educators know the intentions of the IB, and the IB consistently references its mission statement in every aspect of program implementation could be the reason why the IB is experiencing such rapid growth in the U.S. across a variety of public school settings that vary in size, structure, governance, and student demographic (Osberg Conner, 2008).

As the IB evolves rapidly across the United States public education system in this third phase of its development, the organization faces a critical crossroads. It has to find a balance between the push to increase access to a diverse student population, which teachers may need more training more effectively serve, and the expectation to maintain the IB's prestigious reputation of a challenging and rigorous program of general high standing throughout the world. Philosophically, the IB represents a powerful alternative to the dichotomous thinking that characterizes so much of the current education policy debates in American schooling. The IB curriculum framework shows that educators do not need to accept the choice that has emerged in so many schools between a rich curriculum and a rigorous assessment system (Osberg Conner, 2008). The IB recognizes the importance of high-stakes assessment and compliments them with project-based learning. The IB shows that a complex vision of what a well-educated person should know and be able to do in the 21<sup>st</sup> century can be met with a

complex, rich, engaging educational program as seen in the MYP subject guides teachers use to plan, teach and assess.

On the other hand, critics of the IB expansion in the United States suggest it has gained ground because it appeals to the “ethnic salad” characterizations of American society. Osberg Conner (2008) suggests the IB caught on in the United States in the wake of the 1983 *Nation at Risk* report because it offered a way of measuring U.S. students against students from other nations. The author goes on to suggest that international mindedness took a back seat to the need for U.S. schools to increase the number of students who could compete on standardized assessments with their counterparts in other nations. Even today, it is suggested that many students pursue an IB education for competitive reasons. The students are aiming to distinguish themselves from their peers when it comes to competing for entrance into top universities and they believe the rigor of the IB will help distinguish them more so than their global mindedness. Osberg Conner (2008) goes on to suggest that the IB appeals as much, if not more, to U.S. notions of meritocracy than it does to the American value of intercultural understanding. In other words, the IB’s first principle of celebrating diversity and developing intercultural understanding and respect faces challenges that may be unique to the U.S. education system with its post September 11 patriotism and its individualistic and competitive culture.

It is worth acknowledging that the IB programmes’ history of development should be taken into account and serves as a reminder that it has long managed to negotiate competing interest. The IB has maintained its ability to adhere to the founder’s goals with both resilience



and enduring relevance. In 2008 the IB created the learner profile, a list of 10 attributes that all IB learners are taught to possess and will in theory, lead to the development of internationally minded citizens. The IB organization regards the IB learner profile as the IB mission statement in action (IB, 2007; Walker, 2011).

Matthews wrote in 2005 that the total number of IB schools in the U.S. comprised “less than 2% of the total number of high schools in the country, but the IB’s influence on American education had grown out of proportion to its numbers” (p. 214). The IB has doubled the number of schools offering IB programmes in the U.S. in the last five years and the IB reports that it provided professional development training for more than 20,000 educators in the last year alone.

Already, the IB has left a legacy in the education world. Walker (2011) specifies five key areas in which the IB has a legacy that can be used in today’s evolving education systems.

Walker (2011) details the following:

- The IB has been involved from the beginning with governments and universities
- The IB was initially concerned with high ability students which established a high academic standard
- The IB recognizes that it is not easy to achieve either the programmatic or the visionary nature of the IB; schools are constantly in a state of improvement
- The IB started with a strong foundation in international schools; it must keep this but also look beyond to widen access so that all children no matter their economic circumstance have access to an international education
- The IB evolution could not have happened without the crucial and substantial involvement of practitioners from the beginning and that continues today.

Furthermore, many would agree that the implementation of IB programming could be one way of reforming U.S. public schools. Jeffrey Sachs (Sachs, 2008), a well-known U.S. economist, argues that global problems require global thinking and that the more interconnectedness is

needed in a 'crowded planet.' He goes on to suggest that the IB is well-placed to offer a viable solution to the challenging debate of improving the education system for the 21<sup>st</sup> century.

Now that the IB already met the goal of serving 1 million children by 2014 – it has moved on to the strategic planning for ensuring an infrastructure and systems that would be able to sustain 2.5 million children in 10,000 schools by 2020 (IB, 2012). And, it is expected that at least 4,000 of these schools will be in the United States.

### **The International Baccalaureate Middle Years Programme**

The International Baccalaureate Middle Years Program (MYP here after) was developed at the instigation of educators that believed international mindedness should be addressed earlier than the last two years of high school in the Diploma Programme (DP). The IB began official implementation of the MYP in 1994 although the premise and initial framework was being developed in international schools for more than a decade prior to 1994. The creators of the MYP did not obtain the same level of funding that was provided to create the DP so the development was longer and less organized (Nicolson, 2010). The MYP originated in the International School of Moshi, the first, and at that time the only, DP school in all of Africa. The educators were pedagogically and philosophically challenged. They needed a curriculum that would better prepare students for the rigor of the DP. The educators needed something that introduced the fundamental IB concepts – learning how to learn, international mindedness, and the education of the whole child (Nicolson, 2010).

At first, the MYP was a concept only considered for the two years of school prior to the DP. However, upon further reflection and evaluation by educators, governments, and

university professors, a program that would better prepare students for success in the DP needed more time and the MYP was expanded into five years serving all students in the school ages 11-16 in grades 6 through 10. Nicolson (2011) lists the original aims of the program, which can still be seen in today's iteration of the MYP:

- To foster the recognition of the interdependence of living things, people and nations
- To develop the intellect and personality through encouraging curiosity, inquiry, critical thinking, self-reliance and tolerance
- To cultivate flexibility of mind, enabling the child to adjust to different cultural environments, as well as to varying attitudes and approaches to learning
- To create concern and responsibility for the personal, social and physical environment
- To cultivate, through the acquisition of knowledge and the mastery of skills, a respect for learning and the wisdom to use it well
- To foster a critical awareness of the dynamic technological and social changes in our society and their potential consequences (p. 9)

Many international schools across the world took interest in the aims of the program and over time a curriculum framework was developed and supported by three guiding fundamental concepts: intercultural awareness, holistic learning and communication. The MYP requires students to study in the following eight subject areas: Language and Literature, Language Acquisition, Individuals and Societies, Science, Arts, Physical Education and Health, Design, and Mathematics. Interdisciplinary learning and critical thinking are promoted through the focus on learning how to learn using this curricular framework. Additionally, involvement in community and service and developing international mindedness are key elements of the program (IB, 2011). The personal project and internally moderated assessments using criterion-related rubrics are the culminating exercises of the MYP. All students must complete an independent project on a topic they are passionate about in the last year of the MYP. The

project is guided by a rubric and every student has a mentor. All teachers in MYP schools must participate in IB's professional development, which is specific to their subject area, and all MYP schools have an MYP coordinator to support the program implementation on site.

By 1994 the MYP emerged from years of evolution as a credible curriculum framework that would prepare students for the rigors of the DP. Subject guides in all 8 subjects were created along with teacher support materials that emphasized constructivist pedagogy, student centered instruction, interdisciplinary learning, and approaches to learning. But challenge emerged as schools, especially in the U.S. and with increased frequency public schools, went through the authorization process and implemented the MYP for all learners aged 12-16, grades 6 through 10. Schools had a hard time offering all 8 subjects at a minimum of 50 hours to all students, the areas of interaction were hard for teachers to integrate into every subject every year of the programme and conceptual understanding was not necessarily the main focus of the units teachers were developing and implementing.

With the increase in schools around the world interested in implementing the MYP, it became evident to the IB that there was a need to evaluate and adapt the program structure. A curricular framework and implementation structure were needed that stayed true to the initial aims of the program, aligned to the IB mission and met the needs of state and national education requirements, and clearly enabled students to be successful. The new design took into consideration current educational research. As described by Nicolson (2010), new theories impacting on the development of the MYP included: backward design (Wiggins and McTighe), multiple intelligences (Gardner), thinking skills (Perkins), the role of language as instrumental

to learning and constructing meaning, assessment for learning (Jacobs), project-based assessments (Marzano), and teaching of thinking skills (Costa). The new design was developed in collaboration with practitioners, university professors, and educational experts to create an MYP that is innovative, concept-based, appropriately assessed for children ages 11-16, and fully reflects the IB principles in teaching and learning (Nicolson, 2010).

Bunell (2011) suggested more research is needed to understand how the MYP is being implemented and its impact on teaching and learning in schools. He noted that the flexibility and creativity promoted by the MYP might be a difficult fit with the rigorous academic demands of the DP. In one of few studies done on the impact of the MYP on student academic performance, Reimers (2004) examined the impact of the MYP on students who participated in and took DP exams. The findings showed mixed results, students who participated in both the MYP and the DP out-performed their peers who did not participate in the MYP, however; there were other variables that could have also impacted those results. The students who had both the MYP and DP were in a small, private school setting in comparison to the non-MYP students who were in large, public school settings with varied background experiences. Caffyn and Cambridge (2005), however, published a critique of Reimers that questioned the design and analyses of the study because of the dramatically different variables, concluding that the findings were not valid. A few additional studies have examined the academic achievement of MYP students (Tan and Bibby, 2011). But little research has been directed at the MYP in its role as preparation for success in the DP. There are no studies that directly and firmly suggest that participation in the MYP leads to greater success in the DP. Despite the lack of empirical

evidence, Sperandio (2010) reported that schools starting the MYP frequently describe their expectation that the curriculum will provide a “seamless” curriculum in conjunction with the PYP and DP.

Global citizenship and international mindedness have been essential emphases of the MYP from the time of its inception but these aims have received little attention in the impact research of the MYP. Walker (2004), in a speech about the role of research in the IB organization, suggested that addressing the question “what is distinctive about the IB?” should underlie the research efforts. Among the elements he identified as distinctive about the “IB experience” were international mindedness and civic responsibility. Yazzie-Mintz (2010) examined the responses of IB and non-IB students to the High School Survey of Student Engagement, a national survey measuring the academic, social and emotional engagement of high school students. He found that IB students had higher scores on Social/Behavioral/Participatory Engagement, which includes items related to “gaining awareness of conditions in the community outside of school” (p. 10). However, a study of MYP student engagement as measured by a middle school version of the same survey found that responses of MYP students were not significantly different from demographically matched non-MYP peers.<sup>2</sup>

It has been difficult to study the impact of the IB because it of the challenge in identifying an appropriate comparison group. As noted earlier, often schools that implement IB programs mostly include students who are high-achieving even before they participate in an IB

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<sup>2</sup> Confidentiality agreements require that the authors remain anonymous.

program. This problem was highlighted by Kiplinger (2005) and discussed in an IB publication reviewing the research related to IB programs (IB, 2008). Sound studies of academic outcomes associated with IB programs, especially the MYP, are limited. Although the philosophy of the IB extends beyond academics, it is challenging to measure the impact of the IB, academic or otherwise, because of both the self-selection of the schools by school administrators and schools systems that offer the IB and the students who choose to participate in the program at the schools that offer the program only for selected students (IB, 2008).

This study is a unique opportunity to examine the impact of the MYP on all students because the research is done in schools implementing the MYP using the whole-school model. That means that all students in the school participate in the MYP; there is not another option at the school. Additionally, all schools involved in this study are public schools, students attend these schools because they are zoned to attend them; students do not choose these schools over other schools in the district. The students and teachers within this study did not elect whether or not to be in MYP, as has been the case in other studies. The school district decided that these schools would offer the MYP and there is not an alternative option at these schools. In addition to the study of teachers and students in MYP schools this study will gain the perspective of students who do not participate in the MYP but attend schools in the same school district.

Consistent with the recommendations of Walker (2005) and Bunell (2011) to direct research toward a better understanding of the distinguishing elements of the MYP and how they are implemented in the classroom, this study aims to better understand students' MYP experience and how it may affect their understanding of international mindedness, high school

course choices, and plans to participate in advanced academic courses. Additionally, this study will examine the impact on teachers' understandings of global mindedness, another area of limited research. The impact of the IB on both teacher practice and understanding of global mindedness has received little to no research. This study particularly has value because it contributes to our understanding of the extent to which students and teachers achieve the IB mission which aims to create "learning communities in which students can increase their understanding of language and culture, which can help them to become more globally engaged"(IB, 2013). This current study will offer initial insights into these areas of minimal understanding.

### **The Development of Global Mindedness**

In the past decades, researchers have more clearly defined international education, analyzed the relationship between globalization and education, articulated various changes required to teacher education, and provided some suggestions on more effective ways to prepare young people for the challenges of today and tomorrow. Generally researchers would agree that in order for young people to thrive in a globalized world they should develop a mindful way of being in the world today (Boix Mansilla and Gardner, 2005). Hett (1993) states that the goal of global education in the United States is to "foster a sense of global belonging through lessening ethnocentrism, increasing knowledge of other cultures and promoting a concern for the global ecosystem" (p. 1). She goes on to say that there is limited research to assess effectiveness of programs designed to develop this type of international mindedness. Even today, there continues to be a lack of research in this field, especially in relation to secondary students, including middle level students.



Using a variety of empirical measures such as Sampson and Smith's (1957) world-mindedness scale, Reddin's (1975) Culture Shock Inventory and the Global Understanding Project developed by Barrow et al. (1981), Hett proposed the following definition of global mindedness, "a worldview in which one sees oneself as interconnected to the world community and feels a sense of responsibility for its members which is reflected in attitudes, beliefs, and behaviors" (1993, p. 143). This definition presumes a perspective that acknowledges issues in the context of the world as a whole and clearly identifies five dimensions of global mindedness:

1. Cultural Pluralism: An appreciation of the diversity of cultures in the world and a belief that all have something of value to offer. This is accomplished by taking pleasure in exploring and trying to understand other cultural frameworks
2. Efficacy: A belief that an individual's actions can make a difference and that involvement in national and international issues is important
3. Global centrism: Thinking in terms of what is good for the global community, not just what will benefit one's own country. A willingness to make judgments based on global, not ethnocentric standards
4. Interconnectedness: An awareness and appreciation of the interrelatedness of all peoples and nations, which results in a sense of global belonging or kinship with human family
5. Responsibility: A deep personal concern for people in all parts of the world, which surfaces as a sense of moral responsibility to try and improve conditions in some way. (p. 143)

In addition to the identification of dimensions of global mindedness, Hett's (1993) research also suggested eleven associated characteristics for globally minded people which include open-mindedness, flexibility, and an opposition to prejudice and notes that participants scoring higher on the Global Mindedness Scale (GMS) exhibit characteristics that are also cited in the literature regarding effective international teachers. These characteristics include: female gender, significant international experience, participation in internationally oriented activities,

having friends from other countries or cultures, and having experience living outside of the United States for more than 9 weeks (Zhao, 2010).

Although no published evidence exists of the GMS being used within the field of international education related to the impact of the teacher or the impact on student achievement, the GMS has been used through at least seven studies of global mindedness across various populations. Following Hett (1993), the GMS was replicated by Gillian (1995) to investigate global mindedness of university students, faculty and administrators located within the United States in which female gender and higher age ranges were reported as predictors of global mindedness. Hett (1993) and Gillian's (1995) findings related to female gender were supported by Zhai and Scheer (2004) when studying undergraduate, agriculture students at Ohio State University. However, findings related to age were not supported by that study, which indicated no relationship for the variable of age. No published research was found on the use of the GMS with secondary students or teachers in relationship to IB teaching and learning in the public secondary school setting.

Perhaps the most relevant replication of Hett's (1993) GMS, is Duckworth, Walker-Levy, and Levy's (2005) study of pre- and in-service teachers, which included an analysis of beliefs about teaching and learning in international settings because it asked teachers about their beliefs in teaching and learning with a sense of international mindedness. Duckworth et al. (2005) identified international mindedness and global mindedness as identical in nature and purpose in the study description to participants. Employing Hett's GMS, the study did not find a significant relationship between scores on the GMS and the factors of gender, age, ethnicity,

experience outside the USA, number of countries a student had lived in, country of birth, length of time abroad, type of language or number of languages spoken or length of teaching experience (Duckworth, et al., 2005). The researchers reported that one reason for the surprising and contradictory results in comparison to previous studies of global mindedness might be a result of the use of only quantitative methods, which did not allow for the investigation of the quality and types of individual experiences. Other studies used both quantitative and qualitative responses and/or only qualitative responses to study global mindedness.

The most recent replication of Hett's (1993) GMS was conducted by Kirkwood-Tucker, Morris and Lieberman (2011) who examined degrees of world mindedness of 644 undergraduate elementary and secondary social studies teacher candidates at five of Florida's largest public universities. Findings demonstrated that variables significantly related to higher scores on the GMS were: the ability to speak two or more languages, taking courses with a global orientation, high grade point average, progressive political orientation, country of birth outside of the United States and similar to previous findings - female gender.

Hett's (1993) research and findings, as well as the findings of subsequent studies employing the GMS has significant implications for secondary educators in terms of identifying the attributes and dimensions necessary for shaping school communities that can more effectively prepare young people for the complexities of globalization. If teachers are expected to prepare students for a globalized context, they should be able to demonstrate the values and understandings necessary to manage the imperatives of a globalized world: diversity,

complexity, sustainability and inequality (Walker, 2011). This study's investigation of the international mindedness of secondary teachers and students is based on Hett's (1993) research, which was initiated through the educational imperative of fostering the development of a global perspective in university students. Although Hett's (1993) GMS was not conceptualized to measure the relationship of teachers and students level of global mindedness and the impact of international mindedness on academic achievement, it is an important indicator of whether teachers and students possess or develop the characteristics or dimensions (cultural pluralism, efficacy, global centrism, interconnectedness, responsibility) while participating in an international education program that specifically promotes international mindedness.

Hett's (1993) research and identification of the five dimensions of global mindedness draws on a substantial field of study related to the development of a global perspective and has been replicated on several occasions within a variety of contexts. The extensive research conducted by Hett (1993) and successive tests of validity and reliability, support the use of the GMS in this study of secondary students and teachers and the development of global mindedness. In addition, the conflicting findings noted throughout the previous research related to global mindedness suggest the need for further study and investigation in this area. This research will examine the degree to which teachers and students have developed a global perspective using the five dimensions of global mindedness.

### **The Relationship between Global and International Mindedness**

The IB's definition of international mindedness, which identifies an openness to other cultures and a profound level of understanding of the complexity of human interaction seems

to address the necessary perspectives for life in a global, interconnected world. In some ways the definition parallels elements of the similar concept or approach to global mindedness, which includes the identification of a worldview in which one sees oneself as connected to the world community (Hett, 1993; Hill, 2000). It is for this reason that international mindedness and global mindedness are used as the same concept in this research. Although there are significant commonalities, there are a few, subtle differences that can be identified between the two definitions. The information in Table 1 identifies the similarities between Hett’s (1993) characteristics of global mindedness (Appendix B) and the attributes of the IB Learner Profile (Appendix C ) and also highlights the inherent differences related to the characteristics of environmental concerns, cultural pluralism, interconnectedness and a futurist perspective. While this comparison does not suggest that a taxonomy or classification of the characteristics of international or global mindedness should be developed, it does illustrate the areas of distinction when comparing the two approaches to international education.

Table 1. *Comparison of Characteristics of Global Mindedness and International Mindedness*

Characteristics of global mindedness (Hett, 1993)	IB Learner Profile attributes (IB, 2010)
Personal attributes	Inquirer, balanced
Oppose prejudice	Principled
Responsibility and care	Caring
Activist	Risk-taker
Additional language ability	Communicator
Seek to learn	Knowledgeable; reflective, thinker
Unity of humanity	Open-mindedness
Environmental concern	Not identified
Cultural pluralists	Not identified
Interconnectedness	Not identified
Futurist Perspective	Not identified

While the elements of cultural interconnectedness and an awareness of difference are recognized by the IB's philosophical framework, overt references related to environmental concern, cultural pluralism, and a futurist perspective are not articulated in the IB Learner Profile.

Research related to the nature of difference of international mindedness and global mindedness suggests that international mindedness as defined by the IB suggests an unintended focus on the relationships between nations, while global mindedness focuses primarily on understanding world issues and presumes global cultural convergence (Cause, 2009). It is appropriate to use the definition of global mindedness for this study because in articulating the global perspective it does recognize the importance of the local, national and global context (Hett, 1993). Given the similarities between international and global mindedness, which highlights an extension of the IB's stated definitions of international mindedness, it is the intent of this study to investigate to what extent there is a relationship between teachers and students involved in the international education program of the IB and the development of global mindedness.

### **Summary**

The role of education in the 21<sup>st</sup> century continues to develop alongside the rapidly changing, persisting, multi-dimensional forces of globalization, and educators are challenged by both the rate and need for change. In addition, a plethora of suggestions have been offered on how to best prepare students to be knowledgeable, compassionate, lifelong learners who demonstrate intercultural understanding and respect. With this in mind, discussions related to

international education have come to the forefront of social, economic, political, and cultural agendas across the world. If educators are to be responsive and active participants in a globalizing world and significant change is to occur in education, then an understanding of the attitudes, knowledge, perspectives, and skills needed for life in a globalized world should be identified, understood, and shared with students. Given the essential role of teachers in teaching and learning in secondary schools, it is imperative to examine their and student development of international mindedness.

In the following chapter, I will describe this quantitative study of the relationship between the dimensions of global mindedness among secondary teachers and students participating in the IB, an international education program that promotes the development of international mindedness. I will describe and discuss the use of the IB MYP teachers and students and non IB MYP students as a means of a purposeful sample with a section following related to the development of the instrument used for the study. Then, a detailed description of the data collection procedures will be discussed. The chapter will end with the details on the validity and reliability of using the Global Mindedness Scale (Hett, 1993).

## CHAPTER 3. Methodology

The purpose of this exploratory study was to investigate the relationship between global mindedness and student academic performance and global mindedness and teacher characteristics. It was my intent to explore the relationships across the dimensions of global mindedness (cultural pluralism, global centrism, efficacy, interconnectedness, and responsibility) as identified by Hett (1993) for secondary students ages 12 to 16, grades 6 through 10 who participate in the International Baccalaureate (IB) Middle Years Programme (MYP) in the United States public education system and draw comparisons with students who do not participate in the MYP but attend schools in the same school district. The study also analyzed the relationship between the dimensions of global mindedness and the teachers who teach the students in the MYP (the students being surveyed). The Global Mindedness Scale (Hett, 1993) was intended to provide measurements of affective behaviors, attitudes, and values related to the development of global mindedness. It has been replicated through various empirical studies to measure levels of global mindedness for undergraduate students, university faculty and administrators (Duckworth et al., 2005; Smith, 2008). Although the global mindedness study (Hett, 1993) has been used across various demographic groups in the past, there are few examples of the instrument being used with students and teachers in secondary public education in the United States. The only study found that had secondary students complete the survey of global mindedness was the study from which the student data for this research will be used.<sup>3</sup>

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<sup>33</sup> Confidentiality agreements require that the authors remain anonymous.



This study employed a quantitative method design with three phases. The first phase of this study was a comparison of student survey results between students who participate in the MYP, who are new to the MYP, and who have not experienced the MYP. The second phase involved quantitative analysis of student survey data on global mindedness and academic performance and course enrollment. Course enrollment includes the courses students selected to take over three years of secondary schooling. The purpose of looking at course selection is to evaluate the degree of challenge a student selects for their program of study. For example, does a student choose to take on-level or advanced course offerings. Additionally, the second phase involved quantitative analysis of student surveys and student academic performance.

Academic performance includes an evaluation of student performance on standardized tests, grade point average, and report card grades. The third phase involves quantitative analysis of teacher survey data. This phase of the research explored teacher perceptions of global mindedness and the relationship between these perceptions and specific teacher characteristics, for example, the number of years teaching and subject area of expertise.

The five specific research questions that guided this study are as follows:

1. Do 9<sup>th</sup> grade students' perceptions of global mindedness differ between MYP students, non-MYP students and students new to the MYP in 9<sup>th</sup> grade?

Research (Hill, (2007); Pink, (2005); Wagner, (2008); Zhou, (2009)) shows that global mindedness is something that would be beneficial for all students to possess and the International Baccalaureate suggests that through implementation of its programmes students are more likely to be globally minded. This research will analyze the perceptions of global mindedness of students in the MYP compared to students who have not had any or very little experience in the MYP.

2. What is the relationship between academic performance and student perceptions of global mindedness among MYP and non-MYP students?
3. How does students' academic performance change over time as a joint function of (a) whether they were MYP students or not and (b) global mindedness scores?

Although the International Baccalaureate Middle Years Programme is intended for all students in the public school, are there students who report a greater understanding of global mindedness than others and do they have a different academic performance (GPA)? This research will analyze the relationship between academic performance at a set point in time and over time and perceptions of global mindedness.

4. What is the relationship between course enrollment and student perceptions of global mindedness among MYP and non-MYP students?

The International Baccalaureate Middle Years Programme is for all students in the public school regardless of the courses taken; however, are there particular courses or course sequences that provide students greater understanding of global mindedness than others? This research will explore the relationship between course enrollment in grades 9, 10 and 11 and perceptions of global mindedness. Is there a correlation between the courses taken and perceptions of global mindedness?

5. What is the relationship between selected teacher characteristics and teacher perceptions of global mindedness?

All teachers in an International Baccalaureate Middle Years Programme school are required to teach in alignment with the fundamental concepts of the program. The teachers are provided with professional development and support to implement the program in all courses that they teach. This study will analyze teacher perceptions of global mindedness and a number of teacher characteristics.

### **Setting**

According to the IB, schools that are authorized to offer any of the IB's three programmes (PYP, MYP, and DP) must ensure the development of international mindedness throughout the entire school community (IB, 2007). Therefore, for the purpose of this research I used a sample of IB MYP students currently enrolled in IB MYP schools and IB MYP teachers currently working in IB MYP schools authorized to offer this international educational program.

Additionally, students from non-MYP schools will participate in the survey for the purpose of comparison.

All the schools and students who participated in this study come from one urban-suburban school district. While the implementation of the MYP is unique to some schools in the district there are other commonalities among the schools. All the schools are guided by the school district's vision and mission. The teachers at all the schools are on the same pay scale and evaluation system. The students at the schools all must adhere to the same graduation requirements and for the most part have the same course selection options. In particular, all students have the same options between on-level and advanced courses. All students at the schools take the same standardized test, their GPA is calculated in the same way, and academic performance for all students is reported in the same way.

Five high schools with an IB Diploma Programme, which receive students from both MYP middle schools and non-MYP middle schools, have been chosen for this study. The design allows concurrent survey participation of former MYP students and non-MYP students. Additionally, the schools and students who will be used in this study will not be confounded by student self-selection factors. Students in the current study, who were previously enrolled in the MYP, attended middle schools in which all the students and teachers participated in the MYP. Although at the school level some selection factors might be at play (i.e., the schools that students previously attended were not randomly assigned to offer the MYP or non-MYP), the students within the schools did not elect whether or not to be in MYP. Table 2 provides details on the high and middle schools used in the research.

Table 2: Description of Participating High Schools and Middle Schools

School	Description
<b>A</b>	<p>Total Student Population: 1700            Student Demographics: 10% Asian, 40% Black, 30% Hispanic, 10%White, 10% Mixed Race            FARMS Rate 60% Drop-out Rate 10%            Graduation Rate 80% Suspension Rate 5%            Attendance Rate 95% Average SAT Score 1407            Teacher Experience:            Less than five years teaching: 10%            Five – Fifteen years teaching: 35%            More than fifteen years teaching: 55%</p>
<b>B</b>	<p>Total Student Population: 2000            Student Demographics: 5% Asian, 15% Black, 15% Hispanic, 60%White, 5% Mixed Race            FARMS Rate 20% Drop-out Rate 3%            Graduation Rate 97% Suspension Rate 2%            Attendance Rate 90% Average SAT Score 1760            Teacher Experience:            Less than five years teaching: 10%            Five – Fifteen years teaching: 45%            More than fifteen years teaching: 40%</p>
<b>C</b>	<p>Total Student Population: 2200            Student Demographics: 30% Asian, 15% Black, 20% Hispanic, 30%White, 5% Mixed Race            FARMS Rate 35% Drop-out Rate 6%            Graduation Rate 90% Suspension Rate 4%            Attendance Rate 95% Average SAT Score 1780            Teacher Experience:            Less than five years teaching: 10%            Five – Fifteen years teaching: 45%            More than fifteen years teaching: 40%</p>
<b>D</b>	<p>Total Student Population: 1500            Student Demographics: 10% Asian, 20% Black, 50% Hispanic, 15%White, 5% Mixed Race            FARMS Rate 65% Drop-out Rate 15%            Graduation Rate 80% Suspension Rate 8%            Attendance Rate 90% Average SAT Score 1540            Teacher Experience:            Less than five years teaching: 15%            Five – Fifteen years teaching: 40%</p>

	More than fifteen years teaching: 45%
<b>E</b>	<p>Total Student Population: 1500  Student Demographics: 10% Asian, 35% Black, 50% Hispanic, 2.5%White, 2.5% Mixed Race  FARMS Rate 80%                                 Drop-out Rate 10%  Graduation Rate 80%                                 Suspension Rate 8%  Attendance Rate 90%                                 Average SAT Score 1420  Teacher Experience:  Less than five years teaching: 20%  Five – Fifteen years teaching: 40%  More than fifteen years teaching: 40%</p>
<b>F</b>	<p>Total Student Population: 1300  Student Demographics: 5% Asian, 15% Black, 15% Hispanic, 60%White, 5% Mixed Race  FARMS Rate 20%  Suspension Rate 3%  Attendance Rate 90%                                 Average Class Size: 27 Students  Teacher Experience:  Less than five years teaching: 15%  Five – Fifteen years teaching: 50%  More than fifteen years teaching: 35%</p>
<b>G</b>	<p>Total Student Population: 900  Student Demographics: 15% Asian, 45% Black, 30% Hispanic, 5%White, 5% Mixed Race  FARMS Rate 800%  Suspension Rate 3%  Attendance Rate 95%                                 Average Class Size: 23 Students  Teacher Experience:  Less than five years teaching: 15%  Five – Fifteen years teaching: 50%  More than fifteen years teaching: 35%</p>
<b>H</b>	<p>Total Student Population: 1000  Student Demographics: 20% Asian, 20% Black, 20% Hispanic, 30%White, 10% Mixed Race  FARMS Rate 40%  Suspension Rate 4%  Attendance Rate 98%                                 Average Class Size: 25 Students  Teacher Experience:  Less than five years teaching: 10%  Five – Fifteen years teaching: 40%  More than fifteen years teaching: 50%</p>

Table 3a shows the type of data collected from each school. For example, the following data was collected from School A – student data, student survey, and teacher survey.

*Table 3a. Data Collected by School*

<b>School (Participant sample)</b>	<b>Student Data Collected</b>	<b>Teacher Data Collected</b>
<b>A</b>	Student Data and Survey	Teacher Survey
<b>B</b>	Student Data and Survey	Teacher Survey
<b>C</b>	Student Data and Survey	Teacher Survey
<b>D</b>	Student Data and Survey	Teacher Survey
<b>E</b>	Student Data and Survey	Teacher Survey
<b>F</b>		Teacher Survey
<b>G</b>		Teacher Survey
<b>H</b>		Teacher Survey

Table 3b shows the various pathways for the MYP and non-MYP students from the sample schools. For example, the students in High School A come from different middle schools; some of which have the MYP and some that do not have the MYP. The high school has the MYP for all 9<sup>th</sup> and 10<sup>th</sup> grade students.

*Table 3b. Student Participant Sample and Pathway by School*

<b>School</b>	<b>Feeder Middle School(s) MYP and non-MYP Grades 6,7,8</b>	<b>High Schools MYP and non-MYP Grades 9 and 10</b>
<b>A</b>	MYP and non-MYP	MYP 9 and 10
<b>B</b>	MYP only	MYP 9 and 10
<b>C</b>	MYP only	MYP 9 and 10
<b>D</b>	MYP and non-MYP (one of seven options)	Non MYP
<b>E</b>	MYP and non-MYP (one of seven options)	No MYP

## Participant Sample and Data Collection

The sample used for this research was purposive in that it included a suitable population (students and teachers who have experience in the MYP and those that do not). The sample represented a diverse population in a major metropolitan area. Additionally, there are a large number of IB programs implemented in the area and it was convenient to work with this sample. The MYP experience for the students and teachers at these schools is not atypical. Purposive sampling techniques involve selecting certain units or cases “based on a specific purpose rather than randomly” (Tashakkori and Teddlie, 2003a, p. 713 in Creswell, 2007). The sample for this research had to include students and teachers who have MYP experience and those that do not so a comparison could be made. The sample for this research provides an information-rich case for in-depth study.

The student survey data use for this research was collected by the school district prior to this research using the Global Mindedness Scale (Hett, 1993). The student survey data was collected between May 2012 and June 2012 as a part of a study on the relationship between global mindedness and perceptions of middle school experiences among students enrolled in the IB MYP compared to students not participating in the MYP.<sup>4</sup> The data was acquired directly from the school district to me specifically to conduct this research.

As the Supervisor in the Division of Accelerated and Enriched Instruction in this school district, one of my responsibilities is the supervision of the implementation of the International Baccalaureate in the schools. As part of this responsibility I collaborated with the International Baccalaureate Organization, which funded the earlier research. The IB funded two research

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<sup>4</sup> Confidentiality agreements require that the authors remain anonymous.

specialists in the district's research and evaluation office to collect and analyze data on the implementation of the MYP. I was the project manager for this research study. I was responsible for being the liaison with the IB; I facilitated the signing of contracts, payment, and worked with the schools to introduce the project and the research specialist that collected the data.

Students enrolled in the 9<sup>th</sup> grade participated in the survey. Some of these students are from middle schools that had the MYP and some of the students (non-MYP students) are from middle schools that did not have the MYP. Of the five high schools used in the survey three of the high schools continue to implement the MYP in 9<sup>th</sup> and 10<sup>th</sup> grade and two schools do not have the MYP in 9<sup>th</sup> and 10<sup>th</sup> grade. Surveys were given to 840 9<sup>th</sup> grade students. A total of 725 students completed the survey; 48 surveys could not be used because they did not include student ID numbers needed for the analysis with student academic performance. Additionally, 57 surveys were completed by students who were not enrolled in a middle school in the same school district. Since there is not enough background information about these students their surveys will not be used. The student sample is made up of two groups of students – students who were previously enrolled in an MYP middle school and students who were previously enrolled in a non-MYP middle school. Students will be classified as previously MYP, new to MYP, or non-MYP; based on their Grade 8 school assignment.

Prior to administering the survey, teachers sent home a permission form to parents describing the study and the survey, and any student whose parent withheld the permission was not surveyed. The link to the online survey was sent to the IB Coordinator at each of the



high schools to arrange for Grade 9 students to complete the survey during one class period (in most schools, English class). There were less than 10 students from all the schools that chose not to participate in the survey.

All teachers in the five high schools that have the IB MYP high schools and teachers who teach in the IB DP in the three other high schools from the same school district were invited to take the Global Mindedness Teacher Survey online. A total of 619 email invitations were sent to teachers to complete the survey. The teachers working in these schools must have a highly qualified teacher certification. Also, all the teachers were hired through the same process, must adhere to the same performance standards, and are evaluated using the same process. The teachers all received some type of training on the International Baccalaureate and are required to collaborate with the MYP coordinator at their school on a regular basis. The teachers are IB MYP teachers by virtue of teaching in an IB MYP school. Some of the teachers taught at these schools prior to becoming IB MYP schools and chose to stay at the school and implement the IB MYP. Other teachers came to these schools specifically because of the IB MYP. Then, there is a group of teachers at each of these schools that chooses to work at the school because of other factors and may or may not be agreeable to the implementation of the IB MYP. Meaning, some teachers at these schools fully embrace and enact the IB MYP practices while other teachers might reluctantly implement the IB MYP.

### **Student Performance Data**

The study used performance data drawn from student records from both MYP and non-MYP students. The analysis of data will include the use of course enrollment, course grades,

and Algebra and English State assessments. Achievement data will be used from the same year the survey was conducted, then, 2 years after the survey was conducted. Additionally, report card grades for students in the MYP and non-MYP schools will be examined in the same three years (before the survey, during the survey, and after the survey).

The course enrollment data will be analyzed based on student participation in courses designated on-level or advanced. Courses will be counted as advanced if they are designated "Honors," "AP," or "pre-IB." In addition, mathematics courses that are more than one year beyond the typical school district "pathway" will be counted as advance courses. In Grade 8, Geometry and Algebra 2 will be counted as advanced courses. In Grade 9, Algebra, 2, Pre-calculus and Calculus will be counted as advanced courses. In Grade 10, Pre-calculus, Calculus, and Statistics will be counted as advanced courses (in addition to any course with the title Honors, AP, and pre-IB courses).

Standardized tests will also be used as a data point for academic performance. The annual middle school reading, mathematics, and will be examined. And, the high school assessments in mathematics and English will be used. Scores and passing rates on the standardized assessments will be used to determine proficient and advanced performance. All students in this district are required to take and pass these particular standardized assessments as a graduation requirement. The exams measure students' content knowledge in the respective subject areas (Algebra, Biology, Government, and English) and are aligned with the learning goals teachers use to design their curriculum.

Control variables included demographic variables (gender, race, ESOL [English for Speakers of Other Languages], and FARMS [Free and Reduced-price Meals System]), and academic variables as available (GPA, grade 8 math MSA, and High School program, such as pre-IB). Data will be collected from when the students were in 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> grades. The study will include three years of data to thoroughly address research questions 2 and 3. Marx (2006) suggests that it is powerful to use trend data to understand the educational experience and to consider future student experiences. Data on race/ethnicity, gender, previous school, and receipt of services (FARMS, ESOL, and special education) for each student was obtained from the school district student records. These demographic variables were appended to the survey file (using the student ID, identification number) in order to conduct an analysis comparing students who attended MYP middle schools with students who attended non-MYP middle schools, controlling for demographic differences. This data are used to answer research questions 1, 2 and 3.

### **Measurement Tool (Survey)**

To address the five research questions for this study a survey was used with both students and teachers. The combination of the global mindedness survey and the analysis of academic performance data will be used to examine whether there is a relationship between student course enrollment and academic performance and perceptions of global mindedness. Additionally, this research will explore teacher perceptions of global mindedness and the relationship between these perceptions and teacher characteristics like number of years teaching and subject taught. I will employ the use of a modified version of Hett's (1993) global mindedness survey.

The online surveys used for this research was created from Hett's (1993) global mindedness survey and adapted by IB program staff and school district researchers to make them suitable for secondary students and teachers in today's public schools. The teacher survey included additional questions about demographics and the Global Mindedness survey developed by Hett (1993). A copy of the student survey is included in Appendix E.

The global mindedness survey consists of 30 questions. Hett (1993) defines global mindedness as "a worldview in which one sees oneself as connected to the global community and feels a sense of responsibility to its members. This commitment is reflected in the individual's attitudes, beliefs, and behaviors" (p.142). The global mindedness survey is scored on five dimensions. The dimensions, along with Hett's definitions of them, are as follows:

1. Responsibility: A deep personal concern for people in all part of the world which surfaces as a sense of moral responsibility to try and improve conditions in some way (seven survey items).
2. Cultural pluralism: An appreciation of the diversity of cultures in the world and a belief that all have something of value to offer. This is accompanied by taking pleasure in exploring and trying to understand other cultural frameworks (eight survey items).
3. Efficacy: A belief that an individual's actions can make a difference and that involvement in national and international issues is important (five survey items).

4. Global centrism: Thinking in terms of what is good for the global community, not just what will benefit one's own country. A willingness to make judgments based on global, not ethnocentric standards (five survey items).
5. Interconnectedness: An awareness and appreciation of the interrelatedness of all peoples and nations which results in a sense of global belonging or kinship with the "human family" (five survey items).

Subscale scores were computed by calculating an average rating for the items contained in the subscale. On each survey item, a rating of strongly agree was coded a 4; agree was coded a 3; disagree was coded a 2; and strongly disagree was coded a 1. Thus the dimension score could range from 1 (i.e., responded strongly disagree to all items in the dimension) to 4 (i.e., responded strongly agree on all items). Some items were worded negatively so that a "disagree" response would indicate stronger global mindedness; those items were reverse scored for calculation of dimension scores.

Hett's (1993) global mindedness survey was developed for use with college students. Thus a pre-test was given first to a small group of 12 students. Generally, students reported that they easily understood the majority of the questions. However, there were a few questions that used dated language or American centric language that caused students to pause and ask for clarification. Using that feedback, and taking into account that this survey would be used with a diverse population minor wording changes in some of the original survey questions were made in order to make the survey more understandable and relevant for the students and teachers who would take the survey. For example, this was a question from the original Hett

(1993) global mindedness survey: "It is important that American universities and colleges provide programs designed to promote understanding among students of different ethnic and cultural backgrounds" (p.115). The question was changed for the survey to read, "It is important that schools provide clubs and activities designed to promote understanding among students of different ethnic and cultural backgrounds" (Appendix E). Additionally, some questions were changed from the original Hett (1993) global mindedness survey to be more inclusive of non-American students and teachers taking the survey. Hett (1993) originally designed the survey as if only Americans would be taking the survey. Many of the questions reference the American perspective. Since the students taking the survey represent a diverse population from many different countries the word American was removed from the survey. For example, the original Hett (1993) survey read, "Americans have a moral obligation to share their wealth with the less fortunate peoples of the world." The question was changed for the demographically diverse students and teachers to read, "Wealthy countries have a moral obligation to share their wealth with the less fortunate peoples of the world." After the modifications to the survey were made the survey was pre-tested with 15 teachers to solicit feedback on question clarity. Teachers overwhelmingly reported that the survey items were clear. Interestingly, some of the teachers surveyed in the pre-test felt that the questions were very direct; more direct than other surveys they have taken on job satisfaction and school climate. No questions were changed after the teacher pre-test and both students and teachers took the exact same survey.

The teacher survey was used to better understand the teacher perceptions of global mindedness and how that might impact the way they implement the IB MYP. The online survey was administered with two parts: 1) teacher characteristics and 2) the same survey the students took based on Hett's (1993) Global Mindedness Scale. The second part of the survey used the adapted wording from Hett's (1993) global mindedness scale that was used in the student survey. All the questions that were adapted for the student survey were used in that same adapted format for the teacher survey. The same dimensions and scoring process will be used in the teacher survey as was outlined for the student survey.

The survey contained multiple choice, scale, and open-ended questions. Descriptive statistics are used to present the findings for this research. The number and percentage of multiple choice answers, including scaled questions will be presented. Open-ended survey answers were coded into like categories. The following codes were used to categorize subject taught and subject studied in college. Humanities - was the code used for teachers who reported they studied or taught: language, English, social studies, psychology, international education, political science, arts, dance, music, counseling, and social work. Sciences was the code used for teachers who reported they studied or taught agriculture, biology, science, computer science, physical education, health education, nursing, zoology, criminal justice, human development Math was the code use for teachers who studied or taught any level of mathematics. Education was the code use for any teacher that studied any type of education in college which includes special education, business administration, and technology for educators. A copy of the teacher survey is included in Appendix F.

## Analysis of Data

Research Questions:	Data	Analysis
<p><b>RQ1</b></p> <p><b>Do 9<sup>th</sup> grade students' perceptions of global mindedness differ between MYP students, non-MYP students and students new to the MYP in 9<sup>th</sup> grade?</b></p>	<p>Sample: Grade 9 (in 2011–2012) students in five high schools that receive students from both MYP and non-MYP schools, and that offer IB programs.</p> <p>Data sources: Student records and student survey data.</p>	<p>Dependent Variables: Response to global mindedness scale</p> <p>Independent variable: MYP Students, non-MYP Students, New to MYP Students</p> <p>Method of analyses: QUANT: Multivariate Analysis of Covariance (MANOVA), Analysis of Variance (ANOVA), Descriptive Statistics, partial Eta squared test</p>
<p><b>RQ2</b></p> <p><b>What is the relationship between academic performance and student perceptions of global mindedness among MYP and non-MYP students?</b></p>	<p>Sample: Grade 9 (in 2011–2012) students who took global mindedness survey</p> <p>Data sources: Student survey data, Student records: grades and GPA (2011-2012, 2012-2013, 2013-2014), MSA scores Math and English; HSA scores Math and English</p>	<p>Dependent Variable: Response to global mindedness scale</p> <p>Independent variable: English/Math grades GPA English/Math HSA/MSA</p> <p>Method of analyses: QUANT: Multivariate Analysis of Variance (MANOVA), Analysis of Variance (ANOVA), partial Eta squared,</p>
<p><b>RQ3</b></p> <p><b>How does students' academic performance differ over time as a joint function of (a) whether they were MYP students or not and (b) global mindedness scores?</b></p>	<p>Sample: Grade 9 (in 2011–2012) students who took global mindedness survey</p> <p>Data sources: Student survey data, Student records: grades and GPA (2011-2012, 2012-2013, 2013-2014), MSA scores Math and English; HSA scores Math and English</p>	<p>Dependent Variable: English/Math grades GPA English/Math HSA/MSA</p> <p>Independent variable: MYP (yes/no), subscales, and interaction of MYP and subscales</p> <p>Method of analyses: QUANT: repeated-measures Analysis of Variance</p>
<p><b>RQ4</b></p> <p><b>What is the relationship between course enrollment</b></p>	<p>Sample: Grade 9 (in 2011–2012) students who took global</p>	<p>Dependent Variable: Response to global mindedness scale</p> <p>Independent variable:</p>



<p><b>and student perceptions of global mindedness among MYP and non-MYP students and over time?</b></p>	<p>mindedness survey</p> <p>Data sources: Student survey data, course enrollment for math and English (2011-2012, 2012-2013, 2013-2014)</p>	<p>Course Enrollment for English and Math (2011-2012, 2012-2013, 2013-2014)</p> <p>Method of analysis: QUANT: Multivariate Analysis of Variance (MANOVA), Analysis of Variance (ANOVA), partial Eta squared test, multinomial logistic regressions (to analyze course enrollment over time – DV: English and Math course work, IV: MYP (yes/no), global mindedness subscales and interaction of MYP and subscales</p>
<p><b>RQ5 What is the relationship between selected teacher characteristics and teacher perceptions of global mindedness?</b></p>	<p>Sample: Teachers in IB (MYP and/or DP) schools who voluntarily completed the teacher survey on global mindedness</p> <p>Data sources: Teacher survey data which includes teacher report of teacher characteristics</p>	<p>Dependent variable: Response to survey questions about global mindedness</p> <p>Independent variable: Number of years teaching Number of years teaching in IB school IB training Formal education level and major Subject Area Taught Lived and/or studied abroad Speaks a second language</p> <p>Method of analysis: QUANT: Multivariate Analysis of Variance (MANOVA) Analysis of variance (ANOVA), Bonferroni corrected post-hoc tests, descriptive and frequencies, partial eta squared test</p>

### Process for Analysis

To analyze data for this study, five empirical research questions were used. Each research question investigated the relationship between the five subscales of the global mindedness survey: responsibility, efficacy, global centrism, interconnectedness, and cultural pluralism. Together, these five subscales comprise a full range of behaviors related to global

mindedness that are measured by the global mindedness survey (Hett, 1993). The ratings results for the global mindedness survey from both student and teacher participants are reported using the five subscales (dimensions) of global mindedness. The primary task of this study was to measure the significance of the relationship between student perceptions of global mindedness (using all subscales) and the relationship with MYP or non-MYP, academic performance and course enrollment. And, to measure the significance of the relationship between teacher report of global mindedness (using all subscales) and the relationship with number of years teaching, number of years of formal education, area of study in formal education and subject taught. Results from the online survey were exported into an MS Excel file and manipulated from there using Statistical Package for the Social Sciences; version 22.0, statistical software. Student survey data was merged with student record data using the student identification number. Teacher survey data was analyzed separately. Teacher survey data was collected anonymously and adhered to both the University of Maryland IRB rules and the school district rules for collecting data for the purpose of research.

A variety of analytic procedures were used to address the research questions. First, the demographic data for both students and teachers were analyzed. Then, descriptive statistics were used to analyze the data for the students and teachers separately. Measures of skewness and Kurtosis were used to check the distributions of the five subscales of the survey, separately for students and teachers, for normality. As a result, measures were used to reduce skewness and Kurtosis, which rendered the distributions relatively normal. Then, Cronbach's alpha test was run to measure the internal consistency of the five subscales and all 30 items together, again separately for students and teachers, to test the reliability of the measures. None of the alphas

increased significantly when any of the single items in the subscales were deleted; therefore, the original subscales were retained and compared to Hett's (1993) results when she used the Cronbach's alpha test.

Procedures varied depending on the format of the data (e.g., binary or continuous outcome variable). For all research questions the level of statistical significance .10 was used to determine 'significance.' The significance criterion represents the standard of proof that the phenomenon exists. Using .10 'significance level' suggests that there is a 10% chance the null hypothesis is true. The significance level has been variously called the error of the first kind, type 1 error. Since it is the rate of rejecting the null hypothesis it should be taken at a relatively small value (Cohen, 2013). For research in the behavioral sciences, .01, .05, and .10 are all acceptable values (Cohen, 2013; Muijs, 2011). Additionally, since this is an exploratory study it was reasonable to use .10 to find plausible relationships that might signal areas for future research. To address research question 3, Multivariate Analysis of Variance (MANOVA) was used because the independent variable: global mindedness; has five subscales. Then, one-way follow-up Analysis of Variance (ANOVA); was run on each of the five dimensions of global mindedness subscales separately. Descriptive statistics were used to report the mean, standard deviation and total number in the sample. Additionally, a partial Eta squared test will be used to judge whether the observed relationships were large enough to be of practical significance to educators.

For the analysis of research questions 2, 3, and 4 student survey results and academic performance data and course enrollment data were analyzed using multivariate analysis of

variance (MANOVA), as well as analysis of variance (ANOVA) for each of the five subscales individually. For research question 3 repeated-measures ANOVA was used to measure effect over time. Descriptive statistics were calculated for the mean, standard deviation, and total number in the sample for each of the five subscales. The analysis in research questions 2, 3, and 4 was the same used for research question 1 including the use of the Eta squared test to judge practical significance.

To thoroughly evaluate course enrollment over time multinomial logistic regression was used. The two sets on independent variables were English course work over three years identified by course title and Math course work over three years identified by course title. The independent variables were MYP status (yes or no), and scores on the individual subscales of the global mindedness survey. Significance level was evaluated for both English and Math separately.

To address research question 5 similar analysis was used. Teacher survey responses were analyzed using correlations among responses and frequencies. Multivariate Analysis of Variance (MANOVA) was used in conjunction with descriptive and frequencies for responses to evaluate the data. The results for the global mindedness survey were coded just as they were coded for research questions 1, 2, 3, and 4. Open-ended survey answers were coded into like categories as described above. Once the categories were established a level of significance was found. Once all data was coded multivariate analysis of variance (MANOVA) was applied to test the effect of years teaching, years teaching in an IB school, IB training, subject taught, years of formal education and degree achieved in formal education, lived and/or worked abroad, speaks a second language and taught in school with the MYP or not, on teachers' global

mindedness dimension scores. Then, Analysis of Variance (ANOVA) was done to test the effect of years teaching, years teaching in an IB school, IB training, subject taught, years of formal education, degree achieved in formal education, worked or lived abroad, speaks a second language and agreement with survey items measuring global mindedness. In order to mitigate the possibility of Type I error when running the ANOVA on each of the subscales, that results from running so many tests (There were an unusually large number of tests, because the independent variables weren't dichotomous; they had five or so levels, all of which needed to be compared to one another.) I used the Bonferroni method, which is to divide the significance levels by the number of tests being done. Additionally, partial Eta squared tests were used to judge whether the effect size was large enough to be of practical significance to educators.

### **Validity and Reliability**

According to Hett (1993), the GMS was initially developed to measure student attitudes related to their sense of connection to, interest in, and responsibility for the global community and to identify the types of behaviors that were related to this perspective. The first draft of the global mindedness scale (GMS) was a theoretically multidimensional instrument made up of 46 items developed to measure the global attitudes of graduate students (Hett, 1993). During instrument development, four dimensions of global mindedness emerged (a) interconnectedness of humanity, (b) cultural pluralism, (c) ethic of responsibility/care, (d) futurist orientation with initial subscales containing between 8 and 15 items which also included 18 negative (not globally minded) items (Hett, 1993).

A content validity index (CVI) of .88 was established for the GMS by a panel of four content judges. Ninety-one items, including attitudes and behaviors, were submitted to the

judges for review. Of those, 46 attitudinal items and 18 behavioral items remained after removing items that did not meet the minimum criteria (Hett, 1993). In addition to this, a pilot study was conducted on a sample of six graduates, with the final research sample consisting of 396 undergraduate students who completed the GMS. According to Hett (1993) internal consistency reliability alphas were obtained for the total scale and each of the four dimensions. The Cronbach's alpha for the overall tool was .96 with alphas for the subscales ranging from .70 - .79. In addition, a five factor principal component analysis was conducted that included orthogonal varimax rotations to ensure factors rotated so items load significantly on only one factor and that only larger, more important factors are considered and remain independent of one another (Hett, 1993). The principal component analysis with orthogonal varimax rotation produced an eigenvalue for each factor, with the first factor analysis producing 13 eigenvalues of 1.0 or more, which accounted for 57.7% variance from the first principal component factor analysis of the 46-item GMS (Hett, 1993). The 13 emerging factors reflected Hett's (1993) original proposed dimensions; however, greater distinctions between categories were noted.

Hett (1993) conducted a second principal component analysis with orthogonal varimax rotation employing a seven-factor approach, which resulted in seven eigenvalues over 1.00, thereby explaining 42.5% of the variance while still reflecting the dimensions originally proposed for the GMS. A third principal component factor analysis on the 43 item scale was performed, which again employed a seven-factor approach and resulted in the decision to remove items that were not functioning adequately. This resulted in a fourth factor analysis requesting a six-factor solution on the remaining 39 items of the GMS (Hett, 1993). While four of the factors remained quite stable, two factors reflecting cultural interest and pluralism were

identified as less consistent with a much lower reliability alpha resulting in item removal and the decision to restructure items related to cultural difference into one more cohesive factor (Hett, 1993). The fifth factor analysis was performed on 31 items and resulted in a five-factor solution. According to Hett (1993), item 18, which addressed ethnicity, did not load adequately on a factor and was deleted resulting in a 30 item scale with five dimensions reporting eigenvalue above 1.0 accounting for 46.2% variation. Hett (1993) noted that the five factors on the final instrument, identified in Table 4 were conceptually distinct and easily identified and although the reliability of the final instrument was lower than the original 46 item scale, this reduced rating may be a result of the fact that longer tests tend to be more reliable.

Table 4. *Five-Factor Reliability Analysis of Hett's (1993) Global Mindedness Scale*

Subscale	Number of Items	Standardize item alpha
Responsibility	7	.80
Cultural pluralism	8	.75
Efficacy	5	.72
Global centrism	5	.65
Interconnectedness	5	.70
Total for GMS	30	.90

Hett (1993) reported the use of the Spearman Brown prophecy formula to confirm the level of reliability for the overall tool as .93 if the final scale contained 46 items. The final version of the GMS was well within the established parameters for accepting the results of a factor analysis as evidenced by the preservation of all but one item retained loading a minimum level of .35 with a range of the corrected inter-item totals above the minimum of .30 (Hett, 1993).

In addition to conducting a reliability analysis, Hett (1993) determined the dimensionality of the GMS through the calculation of Pearson product-moment correlation

coefficients. According to Hett (1993), moderate correlations between subscales ranged from .34 to .52 indicated that the GMS was a multidimensional instrument and that each of the emerging five factors addressed a different and unique aspect of global mindedness. In terms of convergent validity, Hett (1993) reported significant correlations of .65 significant at the .001 levels, which were established between the reduced 30 item GMS with the Chauvinism subscale (reverse-scored) of the Global Understanding Project (Barrows et al., 1981) in addition to a lower positive correlation of .32, significant at the .01 levels with Yachimowicz's (1988) International Concern subscale, which was also adapted from the Global Understanding Project (Hett, 1993).

Hett's (1993) GMS survey was used with teachers in two recent doctoral dissertations. Teachers were asked to complete the 30 questions survey with word modifications very similar to those used in the current research. The researchers analyzed the data measuring the dimensions of global mindedness using the subscales outlined by Hett (1993): responsibility, cultural pluralism, efficacy, global centrism, and interconnectedness. Hersey (2012) found that the GMS survey findings support the use of the tool for understanding and identifying the development of the dimensions of global mindedness. Carano (2009) used the GMS because of its strong validity and reliability, developed through a process of retroductive triangulation and grounded in sociological theory construction research that meets the criteria for psychometric measures.

Duckworth, Levy, and Levy (2005), used the survey with 93 pre-service and in-service teachers and 82% of the participants were female. The demographic information might help explain the interesting findings of their study: the majority of participants demonstrated a high-



level of global mindedness as measured by Hett's scale and the teachers who lived outside of the United States for at least six months had the highest levels of global mindedness. At the same time, there was no significant correlation between global mindedness and gender, age, ethnicity or specific experiences outside of the United States.

In a much larger scale survey study, Kirkwood-Tucker and Morris (in review) used the Hett survey with 644 U.S. pre-service teachers to understand the extent to which they would embrace teaching from a global perspective. The teachers were enrolled in the requisite social studies methods course at five of Florida's largest public universities. The findings revealed that the teacher's high global mindedness scores were related to the following variables: attending classes with global content, foreign language proficiency, high grade point average, birthplace, political orientation, and gender. The study also found that the teachers' age, international experiences, and membership in professional organizations were all significantly correlated to their global mindedness scores.

Kehl and Morris (2008) used the Hett (1993) survey with college level students who studied abroad and found that the results indicated that there was not enough evidence to conclude that significant differences exist in the global mindedness of students who study abroad for eight weeks or less and those who plan to study abroad in the future. The Hett (1993) GMS survey has been used with various teachers and student groups resulting in mixed findings on the dimensions of global mindedness.

The external validity of this research has limits and there is no clear generalizability. While I would agree the participant sample comes from a diverse, metropolitan area, the sample comes from only one district and type of education (public). The sample size, while

substantial, is not sufficient to make the results absolutely generalizable. The teacher sample size only includes teachers who voluntarily took the survey upon request. The student sample includes students who were participating in the MYP because that is the public school they are required to attend; the students did or did not choose the school.

### **Summary**

In this study, I explored the relationship between global mindedness and student academic performance and global mindedness and teacher characteristics. It was the my intent to explore the relationships across the dimensions of global mindedness (cultural pluralism, global centrism, efficacy, interconnectedness, and responsibility) as identified by Hett (1993) for secondary students ages 12 to 16, grades 6 through 10 who participate in the International Baccalaureate (IB) Middle Years Programme (MYP) compared to students who attend schools in the same public school system in the United States but do not participate in the MYP. The study also looks at the relationship between the dimensions of global mindedness and the teachers who teach the students in the MYP (the students being surveyed). The research was conducted in an urban suburban school district using students from MYP and non-MYP schools and teachers who teach in IB schools. All MYP schools participating in the study met the requirements of the International Baccalaureate to be authorized and implement the program. The students completed the global mindedness survey in 2012 and school records were used to answer research questions 1, 2, 3, and 4. Student academic performance data and course enrollment data was collected from the student records matching the student identification number. Students shared the identification number when taking the global mindedness survey. Teachers completed the global mindedness survey with additional survey questions on

years teaching, formal education and subject taught, but the survey was anonymous. A variety of data analysis methods were used with a focus on analysis of variance to answer all the research questions. Research questions 1, 2, 3, and 4 were analyzed using the student data and survey feedback while research question 5 was evaluated in a similar way using the teacher survey feedback.

## CHAPTER 4: DATA ANALYSIS

The purpose of this exploratory study was to investigate the differences across Hett's (1993) five dimensions of global mindedness (cultural pluralism, efficacy, global centrism, interconnectedness, responsibility) between students who participated in the MYP compared to students who did not and the relationship between the survey findings and academic performance and course enrollment. Additionally, the study investigated the relationship between teacher perceptions of global mindedness and teacher characteristics. Teachers and students completed the same 30-item survey and a quantitative research design was used to analysis the data.

The participants in this research consisted of students and teachers from different schools in one urban/suburban large school district. The students were in 9<sup>th</sup> grade when they completed the survey and came from schools that previously had or did not have the International Baccalaureate Middle Years Programme. The students completed the survey online. Teachers in those same schools that had the International Baccalaureate Middle Years Programme and/or the Diploma Programme in the school were asked to volunteer and complete the survey online. The survey tool 'SurveyMonkey' was employed for survey administration, management and data collection. Data was organized by research hypotheses and correlational analyses were conducted using version 22.0 of Statistical Package for the Social Sciences (SPSS).

The students completed the survey as part of a different research study and I was given permission by the school district to use that data, along with the academic performance, course

enrollment and demographic data for the purposes of this study. All the data related to the students was given to the researcher in one complete file for analysis. I also had to seek permission from the school district to invite teachers to voluntarily complete the survey. The district gave permission for the survey to be conducted and teachers were invited via an email that outlined the voluntary nature of the study. The invitation email also required consent to participate through the selection of a hyperlinked URL address to begin the survey. Once consent was granted, the time commitment to complete the survey was approximately 10 minutes with a survey return window of three weeks. During this time, two reminder emails were sent to all 619 participants to encourage participation in the study.

This chapter provides information regarding the statistical results for each of the research questions. It begins with an analysis of the survey instrument and demographic findings. Then each research question is addressed including information regarding the statistical methods employed for analysis and also identifies the statistical output.

### **Measurement Tool**

The Global Mindedness Scale (GMS) developed by Hett (1993) defines global mindedness as “a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors” (p. 143). Through her research and the development of an instrument designed to measure the presence of global mindedness, Hett identified five dimensions, which included cultural pluralism, efficacy, global centrism, interconnectedness and responsibility.

The electronic survey comprised 30 global mindedness questions (student survey questions 1-30; teacher survey questions 11-41) using a modified version of Hett's (1993) Global Mindedness Scale (GMS). For the teachers, the first questions (questions 1-10) were teacher characteristics questions regarding experiences as self-reported by the teachers. To ensure content validity for the questions related to global mindedness were pre-tested on a sample population of students and teachers. Using the feedback from the student sample some questions were revised for clarity and appropriateness. Then, the teachers were given the pre-test and using the feedback from that pre-test no questions were revised. The students and teachers were given the same questions on global mindedness. I employed a Likert scale with a rating of strongly agree was coded a 4; agree was coded a 3; disagree was coded a 2; and strongly disagree was coded a 1. Thus the dimension score could range from 1 (i.e., responded strongly disagree to all items in the dimension) to 4 (i.e., responded strongly agree on all items). Appendixes D and E provides the instrument for global mindedness (GMS) utilized in this study. The GMS contained eight reversed items that required a re-coding of values to provide orientation of the same direction. The process for re-coding was conducted using statistical software.

### **Scale Reliability**

For the purpose of this study, I checked the distributions of the five subscales of the survey, separately for students and teachers, for normality. Because skewness and kurtosis statistics revealed some skew and kurtosis for several of the subscales, I checked for high and low outliers, then replaced these scores with values equal to the mean for the subscale plus or minus 3 times the standard deviation (Muijs, 2011). For example, if the mean for a scale were

20.00, the standard deviation were 2.00, and a low outlier scored 12.00 (i.e. four standard deviations below the mean), I replaced the score with 14.00 (i.e. three standard deviations below the mean). This procedure considerably reduced skewness and kurtosis for most scales and rendered the distributions relatively normal. Final descriptive statistics using the recoded outliers are presented in Tables 5a and 5b

*Table 5a*

*Descriptive Statistics for Student Responses to Global mindedness Survey*

	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	<i>SD</i>	Kurtosis	<i>SD</i>
Responsibility	711	21.69	3.37	-.54	.09	.31	.18
Cultural Pluralism	711	25.24	2.73	-.20	.09	-.11	.18
Efficacy	717	12.89	1.69	-.01	.09	.20	.18
Global Centrism (reverse-coded)	716	12.87	2.44	-.01	.09	.18	.18
Interconnectedness	709	14.14	1.88	-.14	.09	.59	.18
Total	660	86.03	7.47	-.23	.10	.66	.19

*Table 5b*

*Descriptive Statistics for Teacher Responses to Global mindedness Survey*

	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	<i>SD</i>	Kurtosis	<i>SD</i>
Responsibility	175	21.91	3.17	-.42	.18	-.09	.37
Cultural Pluralism	178	27.47	2.84	-.42	.18	-.44	.36
Efficacy	181	15.41	2.07	.23	.18	-.12	.36
Global Centrism (reverse-coded)	171	14.03	2.29	-.17	.19	.14	.37
Interconnectedness	179	16.18	2.00	-.08	.18	-.53	.36
Total	150	95.18	10.30	-.36	.20	.17	.39

Next I computed Cronbach's alpha, a measure of internal consistency used to determine the relationship of the items in each subscale as a group, was calculated for each of the five subscales and all 30 items together, again separately for students and teachers, to test the reliability of the measures. As can be seen in Table 6, for students, alpha was around .75 or higher for Responsibility, Cultural Pluralism, and Total, and around .60 for Efficacy, Global

Centrism, and Interconnectedness. For teachers, alpha was around .70 or higher for all scales except Interconnectedness, for which it was .60. None of the alphas increased significantly when any of the single items in the subscales were deleted; therefore, the original subscales were retained.

*Table 6. Reliability Statistics for Student and Teacher Responses to Global mindedness Subscales*

Subscale	Items	Standardized item alpha		
		Hett (1993)	Students	Teachers
Responsibility	7	.80	.78	.85
Cultural Pluralism	8	.75	.73	.79
Efficacy	5	.72	.62	.68
Global Centrism	5	.65	.57	.72
Interconnectedness	5	.70	.58	.60
Total	30	.90	.82	.92

Note: Table cells show Cronbach's  $\alpha$ .

### **Response Rate**

The electronic survey used with both students and teachers separately. It was used with students to measure the presence of the dimensions of global mindedness and the relationship to participation in the MYP or not, and academic performance and course enrollment. The survey was also used with teachers to measure the presence of the dimensions of global mindedness compared to certain teacher characteristics.

It is not possible to calculate a precise response rate for the student survey because due to scheduling and logistical difficulties in some schools, not all students in the 9<sup>th</sup> grade at every school were given the survey. However, of the all grade 9 students in the five high schools, 840,



or 42% of them, completed a survey. Percentages of students responding to the survey varied across the five schools ranging from 15% to 80%.

The survey was sent via email to 619 teachers in 8 different schools (5 high schools and 3 middle schools). All the schools had at least one International Baccalaureate program. Of the five high schools, all five high schools implemented the Diploma Programme (grades 11 and 12) and three of the high schools implemented the Middle Years Programme (grades 9 and 10) and the Diploma Programme. Two of the high schools only implemented the Diploma Programme. The three middle schools all implemented the Middle Years Programme. After sending an email to 619 teachers there were a total of 27 email “bounce” backs recorded resulting in a total of a potential 592 participants. Of the 592 on-line surveys received, 399 declined to participate, which therefore resulted in a total of 193 usable responses, resulting in a response rate of 33%. Of the 193 responses to the survey 142 (74%) were females, 42 were males and 9 participants did not disclose their gender.

### **Demographic Findings**

The following descriptive statistics were used to identify the demographic characteristics of the survey participants. The demographic data: data on race/ethnicity, gender, receipt of services (Free and Reduced Meals [FARMS], English for Speakers of Other Languages [ESOL], and special education [SPED] for each student were obtained (with permission) from the school district student records. These demographic variables were appended to the survey file in order to conduct analyses comparing students who attended MYP middle schools with students who attended non-MYP middle schools, controlling for demographic differences.

As can be seen in Table 7, the demographic data of the students shows that more students from schools that had the MYP participated in the study. From the MYP schools the surveys were more equally completed by both males and females compared to the non-MYP schools where 37.9% of males completed the surveys and 62.1% of females completed the survey. In regard to race, there were more White students from MYP schools that took the survey. A similar amount of Asian students took the survey from the MYP and slightly more Latino and Multi-Race students from the non-MYP schools took the survey. There was a difference in the amount of Black and White students who took the survey from the MYP and non-MYP schools. There were 48.4% of White students and 12.7% of Black students from the MYP schools who took the survey. From the non-MYP schools 26% of students who took the survey were White and 26.6% of students who took the survey were Black. There were more students on Free And Reduced Meals (FARMS) from the non-MYP (36.2%) who took the survey compared to the students from the MYP (17.6%) schools. There were very few ESOL students who took the survey from both types of schools; from the MYP schools only .2% of students who took the survey were ESOL and from the non-MYP schools .6% of students who took the survey were ESOL. There was a similar amount of students with documented special education needs that took the test from both MYP and non-MYP schools. From the MYP schools 5.4% of students who took the survey had special education needs. From the non-MYP schools 6.2% of students who took the survey had special education needs.

Table 7

Student Demographics by MYP Status

	Gender			
	Male	Female	Total	
MYP	N	265	293	558
	%	47.5%	52.5%	100.0%
Non-MYP	N	67	110	177
	%	37.9%	62.1%	100.0%
Total	N	332	403	735
	%	45.2%	54.8%	100.0%

	Race						
	Asian	Black	White	Latino	Multiple	Total	
MYP	N	67	71	270	120	30	558
	%	12.0%	12.7%	48.4%	21.5%	5.4%	100.0%
Non-MYP	N	26	47	46	53	5	177
	%	14.7%	26.6%	26.0%	29.9%	2.8%	100.0%
Total	N	93	118	316	173	35	735
	%	12.7%	16.1%	43.0%	23.5%	4.8%	100.0%

	FARMS			
	No	Yes	Total	
MYP	N	460	98	558
	%	82.4%	17.6%	100.0%
Non-MYP	N	113	64	177
	%	63.8%	36.2%	100.0%
Total	N	573	162	735
	%	78.0%	22.0%	100.0%

	ESOL			
	No	Yes	Total	
MYP	N	557	1	558
	%	99.8%	0.2%	100.0%
Non-MYP	N	176	1	177
	%	99.4%	0.6%	100.0%
Total	N	733	2	735
	%	99.7%	0.2%	100.0%

	SPED			
	No	Yes	Total	
MYP	N	528	30	558
	%	94.6%	5.4%	100.0%
Non-MYP	N	166	11	177
	%	93.8%	6.2%	100.0%
Total	N	694	41	735
	%	94.4%	5.6%	100.0%

The following descriptive statistics were used to analyze the characteristics of the teachers who completed the survey. Of the 193 participants who took the survey 142 (74%) were female and 42 (22%) were male with 9 participants not sharing their gender. Sixty-eight percent of the teachers surveyed reported that they have attended authorized IB training conducted by the International Baccalaureate organization. Speaking a second language was almost equally distributed with 50.3% of teachers reporting they do speak a second language and 49.7% of teachers reporting they do not speak a second language. Only 79 (41%) of teachers surveyed lived abroad and almost just the same worked abroad 78 teachers (40%). The majority of teachers studied humanities, 115 teachers (59%) to earn their Bachelor’s Degree. Humanities included languages, English, social studies, psychology, international education, political science, arts, dance, music, counseling, social work. And, 148 or 77% of teachers who took the survey have earned their Master’s degree with 107 teachers (55%) earning their Master’s degree in education. Table 8, Teacher Demographics, details the findings.

Table 8  
Teacher Demographics

<b>Gender</b>				
	Male	Female	Non-Report	Total
N	42	142	9	193
%	22%	74%	4%	100.0%

  

<b>IB Training</b>			
	Yes	No	Total
N	132	61	193
%	68%	32%	100.0%

<b>Lived Abroad</b>			
	Yes	No	Total
N	79	114	193
%	41%	59%	100.0%

  

<b>Worked Abroad</b>			
	Yes	No	Total
N	39	154	193
%	20%	80%	100.0%

<b>Speaks Second Language</b>			
	Yes	No	Total
N	97	96	193
%	50.3%	49.7%	100.0%

		Area of Study					
		Education	Humanities	Math	Science	Non-Report	Total
Major in College	N	31	115	11	32	4	193
	%	16%	59%	6%	17%	2%	100.0%
Master's Degree	N	107	28	2	11	45	193
	%	55%	15%	1%	6%	23%	100.0%
Ph.D.	N	1	5		2		8
	%						4%

### Research Questions

To address the research questions that guided this study various statistical tests were conducted to determine the differences between the five dimensions of global mindedness (cultural pluralism, efficacy, global centrism, interconnectedness, and responsibility) and any meaningful relationships between and among student and teacher variables.

**Research Question 1.** The first research question asked: Do 9<sup>th</sup> grade students' perceptions of global mindedness differ between MYP students, non-MYP students and students new to the MYP in 9<sup>th</sup> grade?

To test this question, I conducted two Multivariate Analyses of Variance (MANOVAs) using the dependent variables Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness. The first MANOVA used the independent variable MYP in Middle School (Yes, No), and the second MANOVA used the independent variable MYP in 9<sup>th</sup> Grade but not MS (Yes, No).

The MYP Status effect was not significant,  $F(5,654) = 1.56, \lambda = .99, p = .17, \eta^2 = .01$ , indicating that whether students had attended MYP in middle school did not predict scores on

the global mindedness subscales. For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Cultural Pluralism was significant,  $F(1,658) = 3.46, p = .06, \eta^2 = .01$ . This analysis revealed that students who had attended MYP in middle school scored higher on Cultural Pluralism than students who had not attended MYP in middle school (25.32 vs. 24.86). In addition, the ANOVA for Global Centrism was significant,  $F(1,658) = 3.64, p = .06, \eta^2 = .01$ . This analysis revealed that students who had attended MYP in middle school scored higher on the reverse-coded Global Centrism measure than students who had not attended MYP in middle school (12.98 vs. 12.55). Table 9 shows descriptive statistics for the five subscales by MYP Status (unweighted means).

*Table 9*  
*Mean Student Responses on Subscales by MYP in Middle School*

	MYP in Middle School	M	SD	N
Responsibility	MYP	21.77	3.28	501
	No MYP	21.48	3.59	159
Cultural Pluralism	MYP	25.32	2.71	501
	No MYP	24.86	2.85	159
Efficacy	MYP	12.85	1.67	501
	No MYP	12.96	1.66	159
Global Centrism	MYP	12.98	2.45	501
	No MYP	12.55	2.33	159
Interconnectedness	MYP	14.13	1.80	501
	No MYP	14.11	1.89	159

The MYP in 9<sup>th</sup> Grade effect was significant,  $F(5,153) = 2.24, \lambda = .93, p = .07, \eta^2 = .07$ , indicating that whether students who were new to the MYP in the 9<sup>th</sup> grade compared to those that did not have the MYP in 9<sup>th</sup> grade predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Cultural Pluralism was significant,  $F(1,157) = 9.41, p < .01, \eta^2 = .06$ . This analysis

revealed that students who had not attended MYP in middle school but attended it in 9<sup>th</sup> grade scored higher on Cultural Pluralism than students who did not attend it in 9<sup>th</sup> grade (25.87 vs. 24.41). Table 10 shows descriptive statistics for the five subscales by MYP in 9<sup>th</sup> grade (unweighted means).

*Table 10*  
*Mean Student Responses on Subscales by MYP in 9<sup>th</sup> Grade*

	MYP in 9 <sup>th</sup> Grade	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	MYP	21.97	3.54	49
	No MYP	21.26	3.61	110
Cultural Pluralism	MYP	25.87	2.70	49
	No MYP	24.41	2.82	110
Efficacy	MYP	13.20	1.73	49
	No MYP	12.85	1.62	110
Global Centrism	MYP	12.69	2.74	49
	No MYP	12.49	2.16	110
Interconnectedness	MYP	14.30	2.17	49
	No MYP	14.03	1.76	110

**Research Question 2.** What is the relationship between academic performance and student perceptions of global mindedness among MYP and non-MYP students?

To test this question, I conducted five Multivariate Analyses of Variance (MANOVAs) using the dependent variables Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness. All five MANOVAs used the independent variable MYP (Yes, No). In addition, the first MANOVA used the independent variable English Semester 2 Grade (A, B, C, D, or E), the second MANOVA used the independent variable Math Semester 2 Grade (A, B, C, D, or E), the third MANOVA used the independent variable End of Year GPA, the fourth MANOVA used the independent variable English HSA (basic, proficient, or advanced), and the

fifth MANOVA used the independent variable MATH HSA (Algebra) (basic, proficient, or advanced).

For the English Semester 2 Grade MANOVA, the MYP Status effect was not significant,  $F(5,592) = 1.34, \lambda = .99, p = .24, \eta^2 = .01$ , indicating that whether students had attended MYP or not predict scores on the global mindedness subscales. The English Semester 2 Grade effect was significant,  $F(20,1964) = 2.72, \lambda = .91, p < .01, \eta^2 = .02$ , indicating that students' English Semester 2 grade predicted scores on the global mindedness subscales. Finally, the MYP Status x English Semester 2 Grade interaction was not significant,  $F(20,1964) = 1.24, \lambda = .96, p = .21, \eta^2 = .01$ , indicating that the English Semester 2 Grade effect on the global mindedness subscales did not differ as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect on Global Centrism was significant,  $F(1,596) = 4.20, p = .04, \eta^2 = .01$ . This analysis revealed that students who had attended MYP scored higher on the reverse-coded Global Centrism measure than students who had not attended MYP (12.98 vs. 12.55; see Research Question 1). In addition, the English Semester 2 Grade effect was significant for Responsibility,  $F(4,596) = 3.10, p = .02, \eta^2 = .02$ , Cultural Pluralism,  $F(4,596) = 3.55, p = .01, \eta^2 = .02$ , Efficacy,  $F(4,596) = 2.02, p = .09, \eta^2 = .01$ , and Global Centrism,  $F(4,596) = 4.61, p < .01, \eta^2 = .03$ . These analyses revealed that students with higher English Semester 2 grades scored higher on Responsibility, Cultural Pluralism, Efficacy, and the reverse-coded Global Centrism measure than students with lower English Semester 2 grades. Finally, the MYP Status x English Semester 2 Grade effect was significant for Cultural Pluralism,  $F(4,596) = 1.96, p < .10, \eta^2 = .01$ . This



analysis revealed that students who had attended MYP scored relatively high on Cultural Pluralism regardless of their English Semester 2 grades, whereas students who had not attended MYP scored higher on Cultural Pluralism if they had higher English Semester 2 grades but lower on Cultural Pluralism if they had lower grades.

For the Math Semester 2 Grade MANOVA, the MYP Status effect was not significant,  $F(5,589) = .85, \lambda = .99, p = .51, \eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The Math Semester 2 Grade effect was significant,  $F(20,1954) = 1.83, \lambda = .94, p = .01, \eta^2 = .02$ , indicating that students' Math Semester 2 grade predicted scores on the global mindedness subscales. Finally, the MYP Status x Math Semester 2 Grade interaction was not significant,  $F(20,1954) = 1.04, \lambda = .97, p = .42, \eta^2 = .01$ , indicating that the Math Semester 2 Grade effect on the global mindedness subscales did not differ as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect was not significant for any of the five subscales (all  $ps > .13$ ). The Math Semester 2 Grade effect was significant for Responsibility,  $F(4,593) = 3.06, p = .02, \eta^2 = .02$ , and Global Centrism,  $F(4,593) = 3.47, p = .01, \eta^2 = .02$ . These analyses revealed that students with higher Math Semester 2 grades scored higher on Responsibility and the reverse-coded Global Centrism measure than students with lower Math Semester 2 grades. Finally, the MYP Status x Math Semester 2 Grade effect was not significant for any of the five subscales (all  $ps > .26$ ).

For the GPA MANOVA, the MYP Status effect was not significant,  $F(5,635) = 1.10$ ,  $\lambda = .99$ ,  $p = .36$ ,  $\eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The GPA effect also was not significant,  $F(5,635) = 1.71$ ,  $\lambda = .99$ ,  $p = .13$ ,  $\eta^2 = .01$ , indicating that students' GPAs did not predict scores on the global mindedness subscales. Finally, the MYP Status x GPA interaction was not significant,  $F(5,635) = 1.05$ ,  $\lambda = .99$ ,  $p = .39$ ,  $\eta^2 = .01$ , indicating that GPA and MYP attendance did not interact to predict scores on the global mindedness subscales.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect on Global Centricism was significant,  $F(1,639) = 2.91$ ,  $p = .09$ ,  $\eta^2 = .01$ . This analysis revealed that students who had attended MYP scored higher on the reverse-coded Global Centricism measure than students who had not attended MYP (12.98 vs. 12.55; see Research Question 1). In addition, the GPA effect on Efficacy was significant,  $F(1,639) = 4.87$ ,  $p = .03$ ,  $\eta^2 = .01$ . This analysis revealed that students with higher GPAs scored *lower* on Efficacy than students with lower GPAs. Finally, the MYP Status x GPA effect was significant for Global Centricism,  $F(1,639) = 2.91$ ,  $p = .09$ ,  $\eta^2 < .01$ . This analysis revealed that for students who had attended MYP, higher GPAs predicted higher scores on the reverse-coded Global Centricism measure; but for students who had not attended MYP; this GPA/Global Centricism positive correlation was even *stronger*.

For the English HSA MANOVA, the MYP Status effect was not significant,  $F(5,613) = .98$ ,  $\lambda = .99$ ,  $p = .43$ ,  $\eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The English HSA effect was significant,  $F(10,1226) =$

7.87,  $\lambda = .88$ ,  $p < .01$ ,  $\eta^2 = .06$ , indicating that students' English HSA levels predicted scores on the global mindedness subscales. Finally, the MYP Status x English HSA interaction was significant,  $F(10,1226) = 1.69$ ,  $\lambda = .97$ ,  $p = .08$ ,  $\eta^2 = .01$ , indicating that the English HSA effect on the global mindedness subscales differed as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect was not significant for any of the five subscales (all  $ps > .14$ ). The English HSA effect was significant for Responsibility,  $F(2,617) = 4.00$ ,  $p = .02$ ,  $\eta^2 = .01$ , Cultural Pluralism,  $F(2,617) = 3.14$ ,  $p = .04$ ,  $\eta^2 = .01$ , Efficacy,  $F(2,617) = 4.29$ ,  $p = .01$ ,  $\eta^2 = .01$ , and Global Centrism,  $F(2,617) = 29.73$ ,  $p < .01$ ,  $\eta^2 = .09$ . These analyses revealed that students with higher English HSA levels scored higher on Responsibility, Cultural Pluralism, and the reverse-coded Global Centrism measure, and *lower* on Efficacy, than students with lower English HSA scores. Finally, the MYP Status x English HSA effect was significant for Global Centrism,  $F(2,617) = 3.16$ ,  $p = .04$ ,  $\eta^2 = .01$ , and Interconnectedness,  $F(2,617) = 3.47$ ,  $p = .03$ ,  $\eta^2 = .01$ . The analysis for Global Centrism revealed that for students who had attended MYP, higher English HSA levels predicted higher scores on the reverse-coded Global Centrism measure, whereas for students who had not attended MYP, this effect was even stronger. The Interconnectedness effect was not easily interpretable, partly due to a small sample size and high standard deviation for the non-MYP/Basic English HSA group.

Finally, for the Math HSA MANOVA, the MYP Status effect was not significant,  $F(5,632) = .76$ ,  $\lambda = .99$ ,  $p = .58$ ,  $\eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The Math HSA effect was significant,

$F(10,1264) = 5.58, \lambda = .92, p < .01, \eta^2 = .04$ , indicating that students' Math HSA levels predicted scores on the global mindedness subscales. Finally, the MYP Status x Math HSA interaction was significant,  $F(10,1264) = 1.68, \lambda = .97, p = .08, \eta^2 = .01$ , indicating that the Math HSA effect on the global mindedness subscales differed as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect was not significant for any of the five subscales (all  $ps > .24$ ). The Math HSA effect was significant for Responsibility,  $F(2,636) = 6.70, p < .01, \eta^2 = .02$ , Efficacy,  $F(2,636) = 3.00, p = .05, \eta^2 = .01$ , Global Centrism,  $F(2,636) = 14.67, p < .01, \eta^2 = .04$ , and Interconnectedness,  $F(2,636) = 3.57, p = .03, \eta^2 = .01$ . These analyses revealed that students with higher Math HSA levels scored higher on Responsibility and the reverse-coded Global Centrism measure, and *lower* on Efficacy and Interconnectedness, than students with lower Math HSA scores. Finally, the MYP Status x Math HSA effect was significant for Responsibility,  $F(2,636) = 3.43, p = .03, \eta^2 = .01$ , such that for students who had not attended MYP, higher Math HSA levels predicted higher scores on Responsibility, whereas there was no relationship between Math proficiency and Responsibility for students who had attended MYP.

**Research Question 3.** How does students' academic performance differ over time as a joint function of (a) whether they were MYP students or not and (b) global mindedness scores?

To test this question, I conducted five repeated-measures Analyses of Variance (ANOVAs) using the dependent variables English Grades (2012 Semesters 1 and 2, 2013 Semesters 1 and 2, 2014 Semesters 1 and 2), Math Grades (2012 Semesters 1 and 2, 2013 Semesters 1 and 2, 2014 Semesters 1 and 2), GPAs (2012, 2013, and 2014), English MSA/HSA,

and Math MSA/HSA. All five ANOVAs used the independent variable MYP(Yes, No); scores on Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness; and interaction terms built between MYP status and each of the five subscales.

For the English Grades ANOVA, the Semester effect was not significant,  $F(4,2347) = .68$ ,  $p = .61$ ,  $\eta^2 < .01$ , indicating that students' average English grades did not change over time. The MYP Status effect was significant,  $F(1,575) = 3.61$ ,  $p = .06$ ,  $\eta^2 = .01$ , indicating that students who had attended MYP had higher overall English grades than students who had not attended MYP (4.45 vs. 2.60 on a scale from A = 5 to E = 1). The Efficacy effect was significant,  $F(1,575) = 8.74$ ,  $p < .01$ ,  $\eta^2 = .01$ , indicating that students with higher Efficacy scores had *lower* overall English grades. The MYP x Efficacy interaction was significant,  $F(1,575) = 3.18$ ,  $p = .08$ ,  $\eta^2 = .01$ , indicating that for students who had attended MYP, those with higher Efficacy scores had *lower* overall English grades; in contrast, for students who had not attended MYP, there was no relationship between Efficacy scores and overall English grades. The Semester x MYP interaction was not significant,  $F(4,2347) = .79$ ,  $p = .54$ ,  $\eta^2 < .01$ , indicating that the difference between MYP and non-MYP students' average English grades did not change over time. None of the Semester by global mindedness subscale interactions were significant (all  $ps > .12$ ), indicating that the relationship between the global mindedness subscales and English grades did not change over time. Finally, none of the Semester by MYP Status by global mindedness subscale interactions were significant (all  $ps > .11$ ), indicating that the relationship between the MYP and global mindedness subscale interactions and English grades did not change over time.

For the Math Grades ANOVA, the Semester effect was not significant,  $F(4,2143) = .63, p = .64, \eta^2 < .01$ , indicating that students' average Math grades did not change over time. The MYP Status effect was significant,  $F(1,568) = 10.59, p < .01, \eta^2 = .02$ , indicating that students who had attended MYP had higher overall Math grades than students who had not attended MYP (4.39 vs. .97 on a scale from A = 5 to E = 1). The Efficacy effect was significant,  $F(1,568) = 7.34, p < .01, \eta^2 = .01$ , indicating that students with higher Efficacy scores had *lower* overall Math grades. The MYP  $\times$  Efficacy interaction was significant,  $F(1,568) = 4.34, p = .04, \eta^2 = .01$ , indicating that for students who had attended MYP, those with higher Efficacy scores had *lower* overall Math grades; in contrast, for students who had not attended MYP, there was no relationship between Efficacy scores and overall Math grades. In addition, the MYP  $\times$  Global Centrism interaction was significant,  $F(1,568) = 4.84, p = .03, \eta^2 = .01$ , indicating that for students who had attended MYP, those with higher reverse-coded Global Centrism scores had higher overall Math grades; but for students who had not attended MYP, this reverse-coded Global Centrism/Math grade correlation was even *stronger*. The Semester  $\times$  MYP interaction was not significant,  $F(4,2143) = .14, p = .96, \eta^2 < .01$ , indicating that the difference between MYP and non-MYP students' average Math grades did not change over time. None of the Semester by global mindedness subscale interactions was significant (all  $ps > .22$ ), indicating that the relationship between the global mindedness subscales and Math grades did not change over time. Finally, none of the Semester by MYP Status by global mindedness subscale interactions was significant (all  $ps > .22$ ), indicating that the relationship between the MYP and global mindedness subscale interactions and Math grades did not change over time.

For the GPA ANOVA, the Year effect was not significant,  $F(1,905) = .25, p = .70, \eta^2 < .01$ , indicating that students' average GPAs did not change over time. The MYP Status effect was significant,  $F(1,631) = 6.04, p = .01, \eta^2 = .01$ , indicating that students who had attended MYP had higher overall GPAs than students who had not attended MYP (3.52 vs. 1.81). The Efficacy effect was significant,  $F(1,631) = 7.56, p < .01, \eta^2 = .01$ , indicating that students with higher Efficacy scores had *lower* overall GPAs. In addition, the Interconnectedness effect was significant,  $F(1,631) = 2.92, p = .09, \eta^2 < .01$ , indicating that students with higher Interconnectedness scores had *lower* overall GPAs. The MYP  $\times$  Efficacy interaction was significant,  $F(1,631) = 3.34, p = .07, \eta^2 = .01$ , indicating that for students who had attended MYP, those with higher Efficacy scores had *lower* overall GPAs; in contrast, for students who had not attended MYP, there was no relationship between Efficacy scores and overall GPAs. In addition, the MYP  $\times$  Global Centrism interaction was significant,  $F(1,631) = 4.17, p = .04, \eta^2 = .01$ , indicating that for students who had attended MYP, those with higher reverse-coded Global Centrism scores had higher overall GPAs; but for students who had not attended MYP, this reverse-coded Global Centrism/GPA effect was even *stronger*. The Year  $\times$  MYP interaction was not significant,  $F(1,905) = .40, p = .60, \eta^2 < .01$ , indicating that the difference between MYP and non-MYP students' average GPAs did not change over time. None of the Year by global mindedness subscale interactions were significant (all  $ps > .13$ ), indicating that the relationship between the global mindedness subscales and GPAs did not change over time. Finally, none of the Year by MYP Status by global mindedness subscale interactions were significant (all  $ps > .10$ ), indicating that the relationship between the MYP and global mindedness subscale interactions and GPAs did not change over time.

For the English MSA/HSA ANOVA, the Year effect was significant,  $F(1,605) = 6.14$ ,  $\lambda = .99$ ,  $p = .01$ ,  $\eta^2 < .01$ , indicating that students' English proficiency *declined* over time. The MYP Status effect was significant,  $F(1,605) = 3.61$ ,  $p = .06$ ,  $\eta^2 = .01$ , indicating that students who had attended MYP had higher overall English proficiency than students who had not attended MYP. None of the global mindedness subscale main effects was significant (all  $ps > .16$ ). The MYP  $\times$  Global Centrism interaction was significant,  $F(1,605) = 4.96$ ,  $p = .03$ ,  $\eta^2 = .01$ , indicating that for students who had attended MYP, those with higher reverse-coded Global Centrism scores had higher overall English proficiency; but for students who had not attended MYP, this positive Global Centrism-English proficiency correlation was even *stronger*. The English HSA  $\times$  MYP interaction was significant,  $F(1,605) = 2.92$ ,  $p = .09$ ,  $\eta^2 < .01$ , indicating that the English proficiency of students who had not attended MYP declined over time, whereas the English proficiency of students who had attended MYP held steady over time. The Semester by Cultural Pluralism effect was significant,  $F(1,605) = 3.50$ ,  $\lambda = .99$ ,  $p = .06$ ,  $\eta^2 = .01$ , indicating that the positive correlation Cultural Pluralism and English proficiency grew stronger from middle school to high school. In addition, the Semester by Interconnectedness effect was significant  $F(1,605) = 3.40$ ,  $\lambda = .99$ ,  $p = .07$ ,  $\eta^2 = .01$ , indicating that the *negative* correlation between Interconnectedness and English proficiency grew weaker from middle school to high school. Finally, the Semester by MYP Status by Global Centrism effect was significant,  $F(1,605) = 5.02$ ,  $\lambda = .99$ ,  $p = .02$ ,  $\eta^2 = .01$ , indicating that for students who had attended MYP, the positive correlation between Global Centrism and English proficiency remained constant from middle school to high school; but for students who had not attended MYP in middle school, the



positive correlation between Global Centrism and English proficiency grew stronger from middle school to high school.

For the Math MSA/HSA ANOVA, the Year effect was significant,  $F(1,624) = 3.79$ ,  $\lambda = .99$ ,  $p = .05$ ,  $\eta^2 = .01$ , indicating that students' Math proficiency *declined* over time. The MYP Status effect was significant,  $F(1,624) = 6.63$ ,  $p = .01$ ,  $\eta^2 = .01$ , indicating that students who had attended MYP had higher overall Math proficiency than students who had not attended MYP. The Cultural Pluralism effect was significant,  $F(1,624) = 2.97$ ,  $p = .08$ ,  $\eta^2 = .01$ , indicating that students with higher scores on Cultural Pluralism had higher overall Math proficiency. The Efficacy effect was also significant,  $F(1,624) = 6.86$ ,  $p = .01$ ,  $\eta^2 = .01$ , indicating that students with higher scores on Efficacy had *lower* overall Math proficiency. The MYP x Responsibility interaction was significant,  $F(1,624) = 4.67$ ,  $p = .03$ ,  $\eta^2 = .01$ , indicating that for students who had attended MYP, there was no correlation between Responsibility scores and overall Math proficiency; however, for students who had not attended MYP, those with higher scores on Responsibility were higher overall in Math proficiency. The MYP x Global Centrism interaction also was significant,  $F(1,624) = 2.92$ ,  $p = .09$ ,  $\eta^2 = .01$ , indicating that for students who had attended MYP, those with higher scores on the reverse-coded Global Centrism measure were higher overall in Math proficiency; but for students who had not attended MYP, this positive correlation was even *stronger*. The Semester x MYP interaction was not significant,  $F(1,624) = .54$ ,  $p = .46$ ,  $\eta^2 < .01$ , indicating that the Math proficiency of students over time did not differ as a function of whether they had attended MYP. None of the Semester by global mindedness subscale

interactions were significant (all  $ps > .27$ ). Finally, none of the Semester by MYP Status by global mindedness subscale interactions were significant (all  $ps > .19$ ).

**Research Question 4.** What is the relationship between course enrollment and student perceptions of global mindedness among MYP and non-MYP students, and overtime?

To test this question, I conducted two Multivariate Analyses of Variance (MANOVAs) using the dependent variables Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness. Both MANOVAs used the independent variable MYP (Yes, No). In addition, the first MANOVA used the independent variable 9<sup>th</sup> Grade English Coursework, and the second MANOVA used the independent variable 9<sup>th</sup> Grade Math Coursework.

For the 9<sup>th</sup> Grade English Coursework MANOVA, the MYP Status effect was not significant,  $F(5,633) = 1.62$ ,  $\lambda = .99$ ,  $p = .15$ ,  $\eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The 9<sup>th</sup>-Grade English Coursework effect was significant,  $F(15,1748) = 4.33$ ,  $\lambda = .90$ ,  $p < .01$ ,  $\eta^2 = .03$ , indicating that students' 9<sup>th</sup>-Grade English Coursework predicted scores on the global mindedness subscales. Finally, the MYP Status  $\times$  9<sup>th</sup>-Grade English Coursework interaction was not significant,  $F(15,1748) = 1.47$ ,  $\lambda = .97$ ,  $p = .11$ ,  $\eta^2 = .01$ , indicating that the 9<sup>th</sup>-Grade English Coursework effect on the global mindedness subscales did not differ as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect on Cultural Pluralism was significant,  $F(1,637) = 3.47$ ,  $p = .06$ ,  $\eta^2$

= .01. This analysis revealed that students who had attended MYP scored higher on Cultural Pluralism than students who had not attended MYP (25.32 vs. 24.86; see Research Question 1). In addition, the 9<sup>th</sup>-Grade English Coursework effect was significant for Responsibility,  $F(3,637) = 4.27, p = .01, \eta^2 = .02$ , Cultural Pluralism,  $F(3,637) = 4.70, p < .01, \eta^2 = .02$ , Efficacy,  $F(3,637) = 3.29, p = .02, \eta^2 = .01$ , and Global Centrism,  $F(3,637) = 10.12, p < .01, \eta^2 = .05$ . Bonferroni-corrected post-hoc comparisons revealed that students who took English 9A and 9B in 9<sup>th</sup> grade scored lower on Responsibility than students who took Honors English 9A and 9B ( $p = .08$ ), MYP English 9A and 9B ( $p < .10$ ), or MCPS Pre-IB English ( $p = .02$ ). Bonferroni-corrected post-hoc comparisons also revealed that students who took English 9A and 9B in 9<sup>th</sup> grade scored lower on Cultural Pluralism and the reverse-coded Global Centrism measure than students who took Honors English 9A and 9B, MYP English 9A and 9B, or MCPS Pre-IB English (all  $ps < .01$ ). In addition, Bonferroni-corrected post-hoc comparisons revealed that students who took English 9A and 9B in 9<sup>th</sup> grade scored *higher* on Efficacy than students who took Honors English 9A and 9B ( $p = .06$ ) or MCPS Pre-IB English ( $p < .01$ ), and that students who took Honors English 9A and 9B scored *higher* on Efficacy than students who took MCPS Pre-IB English ( $p = .05$ ). Finally, the MYP Status x 9<sup>th</sup>-Grade English Coursework effect was significant for Efficacy,  $F(3,637) = 2.22, p = .08, \eta^2 = .01$ . This analysis revealed that among students who had taken English 9A and 9B or MYP English 9A and 9B in 9<sup>th</sup> grade, students who had attended MYP scored higher on Efficacy than students who had not attended MYP; in contrast, among students who had taken Honors English 9A and 9B or MCPS Pre-IB English in 9<sup>th</sup> grade, Efficacy scores did not differ as a function of whether students had attended MYP.

For the 9<sup>th</sup> Grade Math Coursework MANOVA, the MYP Status effect was not significant,  $F(5,606) = 1.20$ ,  $\lambda = .99$ ,  $p = .30$ ,  $\eta^2 = .01$ , indicating that whether students had attended MYP did not predict scores on the global mindedness subscales. The 9<sup>th</sup>-Grade Math Coursework effect was significant,  $F(25,2253) = 2.54$ ,  $\lambda = .90$ ,  $p < .01$ ,  $\eta^2 = .02$ , indicating that students' 9<sup>th</sup>-Grade Math Coursework predicted scores on the global mindedness subscales. Finally, the MYP Status  $\times$  9<sup>th</sup>-Grade Math Coursework interaction was not significant,  $F(25,2253) = 1.15$ ,  $\lambda = .95$ ,  $p = .27$ ,  $\eta^2 = .01$ , indicating that the 9<sup>th</sup>-Grade Math Coursework effect on the global mindedness subscales did not differ as a function of whether students had attended MYP.

For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The MYP Status effect on Cultural Pluralism was significant,  $F(1,610) = 3.72$ ,  $p = .05$ ,  $\eta^2 = .01$ . This analysis revealed that students who had attended MYP scored higher on Cultural Pluralism than students who had not attended MYP (25.32 vs. 24.86; see Research Question 1). In addition, the 9<sup>th</sup>-Grade Math Coursework effect was significant for Efficacy,  $F(5,610) = 3.66$ ,  $p < .01$ ,  $\eta^2 = .03$ , Global Centrism,  $F(5,610) = 4.61$ ,  $p < .01$ ,  $\eta^2 = .04$ , and Interconnectedness,  $F(5,610) = 2.03$ ,  $p = .07$ ,  $\eta^2 = .02$ . Bonferroni-corrected post-hoc comparisons revealed that students who took MYP Algebra 2/Analytical Geometry 2A and 2B in 9<sup>th</sup> grade scored *lower* on Efficacy than students who took Algebra 1A and 1B, Geometry A and B, and Honors Geometry A and B (all  $ps < .01$ ); and that students who took Honors Algebra 2A and 2B scored *lower* on Efficacy than students who took Algebra 1A and 1B ( $p < .01$ ). Bonferroni-corrected post-hoc comparisons also revealed that students who took MYP Algebra 2/Analytical Geometry 2A and 2B in 9<sup>th</sup> grade

scored higher on the reverse-coded Global Centrism measure than students who took Algebra 2A and 2B ( $p = .02$ ), as did students who took Honors Algebra 2A and 2B ( $p < .01$ ). None of the Bonferroni-corrected post-hoc comparisons were significant for Interconnectedness. Finally, the MYP Status  $\times$  9<sup>th</sup>-Grade Math Coursework effect was significant for Global Centrism,  $F(5,610) = 2.07$ ,  $p = .07$ ,  $\eta^2 = .02$ . This analysis revealed that among students who had taken Geometry A and B, students who had attended MYP scored higher on the reverse-coded Global Centrism measure than students who had not attended MYP; in contrast, among students who had taken MYP Geometry A and B in 9<sup>th</sup> grade, students who had *not* attended MYP scored higher on the reverse-coded Global Centrism measure than students who had attended MYP.

To further answer research question 4 and evaluate Math and English course enrollment over time I used the following questions to guide the analysis. How does students' choice of academic courses differ over time as a joint function of (1) whether they were MYP students or not and (2) global mindedness scores?

To test this question, I conducted two sets of multinomial logistic regressions using two sets of dependent variables: (1) English courses in 2012, 2013, and 2014; and (2) Math courses in 2012, 2013, and 2014. Both sets of regressions used the independent variables MYP (Yes, No); scores on Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness; and interaction terms built between MYP status and each of the five subscales. In all cases, the reference category was the standard English or Math course—i.e. English 9A and 9B, English 10A and 10B, and English 11A; and Algebra 1A and 1B, Geometry A and B, and Bridge to Algebra 2 A.

For the 2012 English regression, model fit was significant,  $\chi^2(33) = 190.21, p < .01$ , Nagelkerke pseudo- $R^2 = .28$ . Significant predictors included Responsibility ( $p = .04$ ), Cultural Pluralism ( $p < .01$ ), Efficacy ( $p = .02$ ), MYP Status  $\times$  Responsibility ( $p = .01$ ), MYP  $\times$  Cultural Pluralism ( $p = .01$ ), and MYP Status  $\times$  Efficacy ( $p = .03$ ). Tests of parameter estimates revealed that students who were higher in Cultural Pluralism or *lower* in Efficacy were more likely to take Honors English 9A and 9B than English 9A and 9B, and students who were higher in Cultural Pluralism or *lower* in Responsibility were more likely to take either MCPS Pre-IB English or MYP English 9A and 9B than English 9A and 9B. Tests also revealed that (1) for students who did not attend MYP, those who were higher in Responsibility were more likely to take Honors, MCPS, or MYP than English 9A and 9B, whereas there was no relationship between Responsibility and course-taking for students who had attended MYP; (2) for students who attended MYP, those who were higher in Cultural Pluralism were more likely to take MCPS Pre-IB or MYP than English 9A and 9B, whereas there was no relationship between Cultural Pluralism and course-taking for students who had not attended MYP; and (3) for students who attended MYP, those who were *lower* in Efficacy were more likely to take Honors than English 9A and 9B, whereas there was no relationship between Efficacy and course-taking for students who had not attended MYP.

For the 2013 English regression, model fit was significant,  $\chi^2(33) = 179.06, p < .01$ , Nagelkerke pseudo- $R^2 = .28$ . Significant predictors included Cultural Pluralism ( $p < .01$ ), MYP Status  $\times$  Responsibility ( $p = .07$ ), and MYP  $\times$  Cultural Pluralism ( $p = .01$ ). Tests of parameter estimates revealed that students who were higher in Cultural Pluralism were more likely to take

Honors English 10A and 10B, MCPS Pre-IB English, or MYP English 10A and 10B than English 10A and 10B. Tests also revealed that for students who attended MYP, those who were higher in Responsibility or Cultural Pluralism were more likely to take Honors, MCPS Pre-IB, or MYP than English 10A and 10B, whereas there was no relationship between Responsibility or Cultural Pluralism and course-taking for students who had not attended MYP.

For the 2014 English regression, model fit was significant,  $\chi^2(33) = 114.99, p < .01$ , Nagelkerke pseudo- $R^2 = .19$ . Significant predictors included Cultural Pluralism ( $p = .01$ ), Efficacy ( $p = .04$ ), and MYP  $\times$  Cultural Pluralism ( $p = .02$ ). Tests of parameter estimates revealed that students who were higher in Cultural Pluralism or *lower* in Efficacy were more likely to take Honors English 11A, IB English 1A, or AP Language and Composition A than English 11A. Tests also revealed that for students who attended MYP, those who were higher in Cultural Pluralism were more likely to take Honors, IB, or AP than English 11A, whereas for students who had not attended MYP, those who were higher in Cultural Pluralism were *less* likely to take Honors, IB, or AP than English 11A.

For the 2012 Math regression, model fit was significant,  $\chi^2(55) = 148.41, p < .01$ , Nagelkerke pseudo- $R^2 = .19$ . Significant predictors included MYP Status ( $p = .02$ ), Cultural Pluralism ( $p = .04$ ), Global Centrism ( $p = .01$ ), MYP  $\times$  Cultural Pluralism ( $p = .07$ ), and MYP  $\times$  Global Centrism ( $p < .01$ ). Tests of parameter estimates revealed that students who had attended MYP were more likely to take Honors Algebra 2A and 2B than Algebra 1A and 1B, and that students who were higher in Global Centrism were more likely to take Geometry A and B than Algebra 1A and 1B. Tests also revealed that for students who attended MYP, those who were

higher in Global Centrism were more likely to take Honors Algebra than Algebra, but that this effect was even *stronger* for students who had not attended MYP.

For the 2013 Math regression, model fit was significant,  $\chi^2(66) = 171.30, p < .01$ , Nagelkerke pseudo- $R^2 = .28$ . Significant predictors included MYP Status ( $p = .03$ ), Responsibility ( $p = .03$ ), Cultural Pluralism ( $p = .06$ ), Efficacy ( $p = .04$ ), Global Centrism ( $p = .01$ ), MYP  $\times$  Responsibility ( $p = .07$ ), MYP  $\times$  Efficacy ( $p = .09$ ), and MYP  $\times$  Global Centrism ( $p < .01$ ). Tests of parameter estimates revealed that students who had attended MYP were more likely to take Honors Precalculus A and B than Geometry A and B; students who were higher in Global Centrism or *lower* in Responsibility were more likely to take Algebra 2A and 2B than Geometry; students who were lower in Efficacy were more likely to take Honors Algebra 2A and 2B than Geometry; students who were higher in Global Centrism or *lower* in Responsibility were more likely to take Precalculus A and B than Geometry; and students who were higher in Cultural Pluralism or *lower* in Efficacy were more likely to take IB Precalculus A and B than Geometry. Tests also revealed that (1) for students who did not attend MYP, those who were higher in Responsibility were more likely to take Algebra 2 than Geometry, whereas there was no relationship between Responsibility and course-taking for students who had attended MYP; (2) for students who attended MYP, those who were higher in Responsibility were *less* likely to take Precalculus than Geometry, whereas there was no relationship between Responsibility and course-taking for students who had not attended MYP; (3) for students who attended MYP, those who were higher in Global Centrism were more likely to take Honors Precalculus than Geometry, but this effect was even *stronger* for students who had not attended MYP; and (4) for



students who attended MYP, those who were higher in Global Centrism were more likely to take Precalculus than Geometry, whereas for students who had not attended MYP, those who were higher in Global Centrism were *less* likely to take Precalculus than Geometry.

Finally, for the 2014 Math regression, model fit was significant,  $\chi^2(99) = 178.47, p < .01$ , Nagelkerke pseudo- $R^2 = .28$ ; however, none of the individual predictors was significant (all  $ps > .19$ ).

**Research Question 5.** Do teachers' perceptions of global mindedness differ as a function of nine different teacher characteristics including years teaching, years teaching at an IB school, years teaching at a non-IB school, courses taught, major in college, whether lived abroad, whether worked abroad, speaks a second language and had IB training?

To test this set of questions, I conducted ten Multivariate Analyses of Variance (MANOVAs) using the dependent variables Responsibility, Cultural Pluralism, Efficacy, Global Centrism, and Interconnectedness. Additionally, a partial Eta squared test was conducted to evaluate the significance of the effect size. The first MANOVA used the independent variable years teaching (0-1, 2-5, 6-10, 11-15, 16+), the second used the independent variable, teaching at an IB school (0-1, 2-5, 6-10, 11-15, 16+), the third used the independent variable, years teaching at a non-IB school (0-1, 2-5, 6-10, 11-15, 16+, None), the fourth used the independent variable, courses taught, the fifth used the independent variable, major in college, the sixth used the independent variable, whether the teacher had ever lived abroad, the seventh used the independent variable, whether the teacher had ever worked abroad, and the eighth used the independent variable MYP status (teaching in school that has the MYP or not).

The Years Teaching effect was not significant,  $F(20,462) = 1.01$ ,  $\lambda = .87$ ,  $p = .44$ ,  $\eta^2 = .04$ , indicating that number of years teaching did not predict scores on the global mindedness subscales. For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(4,143) = 2.39$ ,  $p = .05$ ,  $\eta^2 = .06$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had taught 16 or more years scored higher on Responsibility than teachers who had taught 11-15 years (22.83 vs. 20.79), the significant difference,  $p = .09$ , with all other age groups falling in between those extremes. The ANOVA for Efficacy also was significant,  $F(4,143) = 2.33$ ,  $p = .06$ ,  $\eta^2 = .06$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had taught 16 or more years scored higher on Efficacy than teachers who had taught 11-15 years (16.18 vs. 14.79), the significant difference,  $p = .06$ , with all other age groups falling in between those extremes. The ANOVA for Global Centrism also was significant,  $F(4,143) = 2.21$ ,  $p = .07$ ,  $\eta^2 = .06$ ; however, post-hoc comparisons revealed no significant effects. Finally, the ANOVA for Interconnectedness was significant,  $F(4,143) = 2.11$ ,  $p = .08$ ,  $\eta^2 = .06$ ; however, post-hoc comparisons again revealed no significant effects. Table 11 shows descriptive statistics for the five subscales by Years Teaching (unweighted means).

Table 11

Mean Teacher Responses on Subscales by Years Teaching

	Years Teaching	M	SD	N
Responsibility	1 year or less	22.13	3.52	8
	2 years - 5 years	20.90	3.28	29
	6 years - 10 years	21.70	2.92	43
	11 years - 15 years	20.79	3.10	28
	16 years or more	22.83	3.22	40
Cultural Pluralism	1 year or less	28.00	2.33	8
	2 years - 5 years	26.97	2.88	29
	6 years - 10 years	27.56	2.85	43
	11 years - 15 years	27.13	2.86	28
	16 years or more	28.43	2.88	40
Efficacy	1 year or less	15.00	2.33	8
	2 years - 5 years	15.28	2.19	29
	6 years - 10 years	15.21	1.96	43
	11 years - 15 years	14.79	1.37	28
	16 years or more	16.18	2.25	40
Global Centrism	1 year or less	15.38	1.30	8
	2 years - 5 years	13.45	2.40	29
	6 years - 10 years	13.98	2.10	43
	11 years - 15 years	13.72	2.88	28
	16 years or more	14.75	2.15	40
Interconnectedness	1 year or less	16.88	2.17	8
	2 years - 5 years	15.66	2.44	29
	6 years - 10 years	16.21	1.93	43
	11 years - 15 years	15.93	1.80	28
	16 years or more	16.95	2.04	40

The Years Teaching at an IB School effect was significant,  $F(20,462) = 2.18, \lambda = .74, p < .01, \eta^2 = .07$ , indicating that number of years teaching at an IB school predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. Only the ANOVA for Global Centrism was significant,  $F(4,143) = 4.88, p < .01, \eta^2 = .12$ . Bonferroni-corrected post-hoc comparisons revealed that teachers who had taught

6-10 years scored higher on the reverse-coded Global Centrism measure than teachers who had taught 2-5 years (15.14 vs. 13.24), the only significant difference,  $p < .01$ , with all other age groups falling in between those extremes. Table 12 shows descriptive statistics for the five subscales by Years Teaching at an IB School (unweighted means).

Table 12

*Mean Teacher Responses on Subscales by Years Teaching at an IB School*

	Years Teaching at IB School	M	SD	N
Responsibility	1 year or less	21.75	4.33	24
	2 years - 5 years	21.09	3.22	58
	6 years - 10 years	21.77	3.08	43
	11 years - 15 years	23.13	2.60	16
	16 years or more	22.14	2.85	7
Cultural Pluralism	1 year or less	28.07	3.06	24
	2 years - 5 years	27.43	2.96	58
	6 years - 10 years	27.67	2.64	43
	11 years - 15 years	28.44	2.66	16
	16 years or more	25.43	2.51	7
Efficacy	1 year or less	15.29	2.07	24
	2 years - 5 years	15.43	2.13	58
	6 years - 10 years	15.33	1.96	43
	11 years - 15 years	15.75	2.44	16
	16 years or more	15.00	1.15	7
Global Centrism	1 year or less	14.54	2.24	24
	2 years - 5 years	13.24	2.19	58
	6 years - 10 years	15.14	2.25	43
	11 years - 15 years	14.13	2.39	16
	16 years or more	13.43	1.99	7
Interconnectedness	1 year or less	16.54	1.98	24
	2 years - 5 years	16.02	2.28	58
	6 years - 10 years	16.35	1.76	43
	11 years - 15 years	17.06	2.11	16
	16 years or more	15.43	2.51	7

The Years Teaching at a non-IB School effect was not significant,  $F(25,514) = 1.31, \lambda = .80, p = .18, \eta^2 = .04$ , indicating that number of years teaching at a non-IB school did not predict scores on the global mindedness subscales. For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(5,142) = 2.25, p = .05, \eta^2 = .07$ ; however, post-hoc comparisons revealed no significant effects. The ANOVA for Cultural Pluralism was significant,  $F(5,142) = 2.64, p = .03, \eta^2 = .08$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had taught 11-15 years scored higher on Cultural Pluralism (29.33) than teachers who had taught 6-10 years (26.60,  $p < .05$ ) or 1 year or less (26.48,  $p = .05$ ), the only significant differences, with all other age groups falling in between those extremes. Table 13 shows descriptive statistics for the five subscales by Years Teaching at a non-IB School (unweighted means).

Table 13

*Mean Teacher Responses on Subscales by Years Teaching at a Non-IB School*

	Years Teaching at Non-IB School	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	1 year or less	20.38	2.94	16
	2 years - 5 years	22.31	3.06	42
	6 years - 10 years	20.45	4.35	20
	11 years - 15 years	23.06	2.36	18
	16 years or more	21.93	2.95	14
	None, I've always taught in an IB World School	21.50	2.91	38
Cultural Pluralism	1 year or less	26.48	3.00	16
	2 years - 5 years	27.64	3.00	42
	6 years - 10 years	26.60	3.05	20
	11 years - 15 years	29.33	2.33	18
	16 years or more	28.36	2.68	14
	None, I've always taught in an IB World School	27.55	2.52	38
Efficacy	1 year or less	14.75	1.57	16
	2 years - 5 years	15.17	2.33	42
	6 years - 10 years	15.05	2.09	20
	11 years - 15 years	15.89	1.57	18
	16 years or more	16.00	2.04	14
	None, I've always taught in an IB World School	15.50	2.01	38
Global Centrism	1 year or less	14.19	3.45	16
	2 years - 5 years	14.40	2.50	42
	6 years - 10 years	13.35	2.28	20
	11 years - 15 years	14.33	1.97	18
	16 years or more	13.43	1.95	14
	None, I've always taught in an IB World School	14.26	1.91	38
Interconnectedness	1 year or less	15.38	1.54	16
	2 years - 5 years	16.19	1.78	42
	6 years - 10 years	16.05	2.56	20
	11 years - 15 years	16.94	1.59	18
	16 years or more	16.86	2.41	14
	None, I've always taught in an IB World School	16.26	2.37	38

The Courses Taught effect was significant,  $F(10,244) = 2.40$ ,  $\lambda = .83$ ,  $p = .01$ ,  $\eta^2 = .09$ , indicating that courses taught predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(2,126) = 3.21$ ,  $p = .04$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who taught Humanities scored higher on Responsibility (22.13) than teachers who taught Science (20.45),  $p < .05$ . The ANOVA for Cultural Pluralism was also significant,  $F(2,126) = 7.75$ ,  $\eta^2 = .11$ ,  $p < .01$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who taught Humanities scored higher on Cultural Pluralism (28.43) than teachers who taught Science (26.64,  $p < .01$ ) or Mathematics (26.29,  $p < .01$ ). Finally, the ANOVA for Efficacy was also significant,  $F(2,126) = 3.17$ ,  $\eta^2 = .05$ ,  $p < .05$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who taught Humanities scored higher on Efficacy (15.74) than teachers who taught Mathematics (14.48),  $p < .05$ . Table 14 shows descriptive statistics for the five subscales by Courses Taught (unweighted means).

Table 14

Mean Teacher Responses on Subscales by Courses Taught

	Courses Taught	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	Humanities	22.13	2.96	77
	Mathematics	21.19	3.44	21
	Science	20.45	3.59	31
Cultural Pluralism	Humanities	28.43	2.44	77
	Mathematics	26.29	3.42	21
	Science	26.64	3.00	31
Efficacy	Humanities	15.74	2.04	77
	Mathematics	14.48	2.14	21
	Science	15.32	2.06	31
Global Centrism	Humanities	14.48	2.22	77
	Mathematics	13.90	2.61	21
	Science	13.58	2.62	31
Interconnectedness	Humanities	16.56	1.89	77
	Mathematics	15.71	2.39	21
	Science	15.81	2.26	31

The IB Training effect was not significant,  $F(5,139) = 1.33, \lambda = .95, p = .26, \eta^2 = .05$ , indicating that whether teachers had received IB training did not predict scores on the global mindedness subscales. For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Cultural Pluralism was significant,  $F(1,143) = 5.67, p = .02, \eta^2 = .04$ , revealing that teachers who had received IB training scored higher on Cultural Pluralism (27.93) than teachers who had not received IB training (26.70). Table 15 shows descriptive statistics for the five subscales by IB Training (unweighted means).



Table 15

*Mean Teacher Responses on Subscales by IB Training*

	IB Training	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	Yes	21.89	3.11	98
	No	21.17	3.86	47
Cultural Pluralism	Yes	27.93	2.59	98
	No	26.70	3.48	47
Efficacy	Yes	15.54	2.01	98
	No	15.17	2.27	47
Global Centrism	Yes	14.22	2.14	98
	No	13.79	2.90	47
Interconnectedness	Yes	16.44	2.01	98
	No	15.83	2.21	47

The College Major effect was significant,  $F(15,379) = 2.43, \lambda = .78, p < .01, \eta^2 = .08$ , indicating that college major predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(3,141) = 6.49, p < .01, \eta^2 = .16$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had majored in the Humanities scored higher on Responsibility (22.34) than teachers who had majored in Science (19.32),  $p < .01$ , and that teachers who had majored in Education also scored higher (21.50) than teachers who had majored in Science,  $p = .09$ . The ANOVA for Cultural Pluralism was also significant,  $F(3,141) = 8.70, p < .01$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had majored in the Humanities scored higher on Cultural Pluralism (28.31) than teachers who had majored in Science (25.31),  $p < .01$ , and that teachers who had majored in Education also scored higher (27.41) than teachers who had majored in Science,  $p = .04$ . Finally, the ANOVA for

Interconnectedness was significant,  $F(3,141) = 5.49, p < .01, \eta^2 = .10$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who had majored in the Humanities scored higher on Interconnectedness (16.69) than teachers who had majored in Science (14.88),  $p < .01$ . Table 16 shows descriptive statistics for the five subscales by College Major (unweighted means).

Table 16

*Mean Teacher Responses on Subscales by College Major*

	College Major	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	Education	21.50	3.83	22
	Humanities	22.34	2.80	93
	Mathematics	21.80	2.17	5
	Science	19.32	3.31	25
Cultural Pluralism	Education	27.41	3.17	22
	Humanities	28.31	2.48	93
	Mathematics	26.80	3.56	5
	Science	25.31	2.58	25
Efficacy	Education	15.41	2.63	22
	Humanities	15.59	1.98	93
	Mathematics	14.40	1.82	5
	Science	14.84	1.75	25
Global Centrism	Education	13.86	2.49	22
	Humanities	14.39	2.12	93
	Mathematics	14.20	2.86	5
	Science	13.48	2.86	25
Interconnectedness	Education	16.05	2.50	22
	Humanities	16.69	1.88	93
	Mathematics	16.60	2.70	5
	Science	14.88	1.86	25

The Lived Abroad effect was significant,  $F(5,144) = 2.11, \lambda = .93, p = .07, \eta^2 = .07$ , indicating that whether teachers had lived abroad predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(1,148) = 7.77, p = .01, \eta^2 = .05$ , revealing that teachers who had lived abroad scored higher on Responsibility (22.67) than teachers who had not lived abroad (21.18). The ANOVA for Cultural Pluralism was also significant,  $F(1,148) = 9.58, p < .01, \eta^2 = .06$ , revealing that teachers who had lived abroad scored higher on Cultural Pluralism (28.59) than teachers who had not lived abroad (27.13). The ANOVA for Efficacy was also significant,  $F(1,148) = 5.11, p = .03, \eta^2 = .03$ , revealing that teachers who had lived abroad scored higher on Efficacy (15.91) than teachers who had not lived abroad (15.13). The ANOVA for Global Centrism was also significant,  $F(1,148) = 4.29, p = .03, \eta^2 = .03$ , revealing that teachers who had lived abroad scored higher on the reverse-coded Global Centrism measure (14.65) than teachers who had not lived abroad (13.83). Finally, the ANOVA for Interconnectedness was significant,  $F(1,148) = 4.19, p = .03, \eta^2 = .03$ , revealing that teachers who had lived abroad scored higher on Interconnectedness (16.74) than teachers who had not lived abroad (16.02). Table 17 shows descriptive statistics for the five subscales by Lived Abroad (unweighted means).

Table 17

*Mean Teacher Responses on Subscales by Lived Abroad*

	Whether Lived Abroad	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	Yes	22.67	3.22	54
	No	21.18	3.10	96
Cultural Pluralism	Yes	28.59	2.91	54
	No	27.13	2.70	96
Efficacy	Yes	15.91	2.22	54
	No	15.13	1.93	96
Global Centrism	Yes	14.65	2.43	54
	No	13.83	2.25	96
Interconnectedness	Yes	16.74	1.95	54
	No	16.02	2.13	96

The Worked Abroad effect was not significant,  $F(5,144) = 1.86$ ,  $\lambda = .94$ ,  $p = .11$ ,  $\eta^2 = .06$ , indicating that whether teachers had worked abroad did not predict scores on the global mindedness subscales. For exploratory purposes, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(1,148) = 4.63$ ,  $p = .03$ ,  $\eta^2 = .03$ , revealing that teachers who had worked abroad scored higher on Responsibility (23.22) than teachers who had not worked abroad (21.51). The ANOVA for Cultural Pluralism was also significant,  $F(1,148) = 8.30$ ,  $p < .01$ ,  $\eta^2 = .05$ , revealing that teachers who had worked abroad scored higher on Cultural Pluralism (29.43) than teachers who had not worked abroad (27.41). The ANOVA for Efficacy was significant,  $F(1,148) = 2.81$ ,  $p < .10$ ,  $\eta^2 = .02$ , revealing that teachers who had worked abroad scored higher on Efficacy (16.17) than teachers who had not worked abroad (15.30). Finally, the ANOVA for Interconnectedness was significant,  $F(1,148) = 6.59$ ,  $p = .01$ ,  $\eta^2 = .04$ , revealing that teachers who had worked abroad scored higher on

Interconnectedness (17.44) than teachers who had not worked abroad (16.12). Table 18 shows descriptive statistics for the five subscales by Worked Abroad (unweighted means).

*Table 18 Mean Teacher Responses on Subscales by Worked Abroad*

	Whether Worked Abroad	M	SD	N
Responsibility	Yes	23.22	4.12	18
	No	21.51	3.03	132
Cultural Pluralism	Yes	29.43	3.51	18
	No	27.41	2.68	132
Efficacy	Yes	16.17	2.12	18
	No	15.30	2.04	132
Global Centrism	Yes	14.61	3.12	18
	No	14.06	2.22	132
Interconnectedness	Yes	17.44	2.18	18
	No	16.12	2.03	132

The Second Language effect was significant,  $F(10,280) = 3.26, \lambda = .80, p < .01, \eta^2 = .10$ , indicating that whether teachers spoke a second language predicted scores on the global mindedness subscales. To explore these effects, I performed one-way follow-up ANOVAs on each of the subscales. The ANOVA for Responsibility was significant,  $F(2,144) = 7.06, p < .01, \eta^2 = .09$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who spoke a second language (Yes) scored higher on Responsibility (23.10) than teachers who did not speak a second language (No; 20.79),  $p < .01$ . The ANOVA for Cultural Pluralism was also significant,  $F(2,144) = 14.47, p < .01, \eta^2 = .17$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who spoke a second language scored higher on Cultural Pluralism (29.31) than teachers who Somewhat spoke a second language (27.90,  $p < .10$ ) and teachers who did not speak a second language (26.51,  $p < .01$ ), the latter two groups also differing significantly from each other ( $p = .06$ ). The ANOVA for Efficacy was also significant,  $F(2,144) = 4.01, p = .02, \eta^2 = .05$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who spoke a second

language scored higher on Efficacy (16.05) than teachers who did not speak a second language (14.96,  $p = .02$ ). The ANOVA for Global Centrist was also significant,  $F(2,144) = 4.14, p = .02, \eta^2 = .05$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who spoke a second language scored higher on the reverse-coded Global Centrist measure (14.69) than teachers who did not speak a second language (13.59,  $p < .05$ ), as did teachers who Somewhat spoke a second language (14.70,  $p = .09$ ). Finally, the ANOVA for Interconnectedness was also significant,  $F(2,144) = 10.28, p < .01, \eta^2 = .12$ ; Bonferroni-corrected post-hoc comparisons revealed that teachers who spoke a second language scored higher on Interconnectedness (17.40) than teachers who Somewhat spoke a second language (16.23,  $p = .04$ ) and teachers who did not speak a second language (15.68,  $p < .01$ ). Table 19 shows descriptive statistics for the five subscales by Second Language (unweighted means).

*Table 19 Mean Teacher Responses on Subscales by Second Language*

	Second Language	<i>M</i>	<i>SD</i>	<i>N</i>
Responsibility	Yes	23.10	2.75	42
	Somewhat	21.97	3.38	30
	No	20.79	3.39	75
Cultural Pluralism	Yes	29.31	2.11	42
	Somewhat	27.90	2.48	30
	No	26.51	3.09	75
Efficacy	Yes	16.05	1.75	42
	Somewhat	15.53	1.91	30
	No	14.96	2.19	75
Global Centrist	Yes	14.69	2.24	42
	Somewhat	14.70	1.49	30
	No	13.59	2.64	75
Interconnectedness	Yes	17.40	1.52	42
	Somewhat	16.23	2.14	30
	No	15.68	2.13	75

A summary of the findings for teacher perceptions of global mindedness and the nine teacher characteristics are listed in Table 20.

*Table 20 Teacher Characteristics Summary of Findings*

<b>Characteristic</b>	<b>Statistical Analysis</b>	<b>Significant/Not Significant</b>	<b>Partial Eta Squared Test</b>
Years Teaching	MANOVA	Not Significant	.04
Years Teaching in an IB School	MANOVA	Significant	.07
Years Teaching Not in an IB school	MANOVA	Not Significant	.04
IB Training	MANOVA	Not Significant	.05
Courses Taught	MANOVA	Significant (Humanities)	.09
College Major	MANOVA	Significant (Humanities)	.08
Lived Abroad	MANOVA	Significant	.07
Worked Abroad	MANOVA	Not Significant	.06
Second Language Spoken	MANOVA	Significant	.10

### **Summary**

This study included survey data collected from both students and teachers from the same urban/suburban school district. There were 735 students and 193 teachers who completed Hett's (1993) Global Mindedness Scale Survey. Student survey results were then compared to academic performance data and course enrollment data. Teacher survey results were compared to teacher characteristics that were reported by teachers at the same time they completed the survey. Five empirical research questions were posed and tested through the use of different statistical analyses. The first research question sought to understand the relationship between student perceptions of the dimensions of global mindedness and their participation in the MYP. An analysis of the data indicated that there was not a significant relationship between global mindedness and participation in 3.75 years of the MYP compared to their peers that did not

participate in the MYP at all. However, there was a significant relationship for students who participated in .75 of a year compared to their peers who had no experience in the MYP at all. Additionally, when each dimension of global mindedness was evaluated individually there was a significant relationship between MYP participation and cultural pluralism.

Data related to the second research question reported findings for student perceptions of global mindedness and academic performance suggests that English grades, Math grades, English standardized tests and Math standardized tests predicted scores of the global mindedness subscales. However, students GPA did not predict scores of the global mindedness subscales. The interaction between MYP status and English grade, MYP status and Math grade, and MYP status and GPA was not significant indicating that the effect on the global mindedness scales did not differ as a function of whether or not a student had attended MYP. The interaction between MYP status and English HSA was significant ( $p = .08$ ) and the MYP status and Math HSA was significant ( $p < .01$ ) indicating that the effect on the subscales of the global mindedness subscales differed depending on whether the student was in the MYP.

Additionally, the findings for research question three indicate that when evaluating the effect of English and Math grades, GPA, and English and Math standardized test performance over time between students in the MYP compared to their peers not in the MYP there were some significant differences. The overall average English and Math grades did not significantly change over time for both students who participated and did not participate in the MYP. In regard to English, MYP status was significant ( $p = .06$ ) indicating that students who had attended MYP had higher English grades over time. There was a positive significant ( $p < .01$ )



relationship between students who attended MYP and math grades over time. Students who participated in the MYP had overall higher math grades over time. Students who attended the MYP had statistically significant ( $p = .01$ ) higher GPA over time. English and Math standardized test performance over time was significant in English ( $p = .06$ ) and math ( $p = .05$ ) indicating that students in the MYP had higher English and Math proficiency on standardized test performance over time than students who had not attended the MYP. Further, the interaction between English standardized test performance and MYP was significant ( $p = .09$ ) indicating that English proficiency of students who had no MYP declined over time. The same test was not significant in relation to the MYP standardized test performance over time.

Research Question four sought to explore the relationship between student perceptions of global mindedness and course enrollment (on-level or advanced). There was a significant relationship for both English ( $p < .01$ ) and Math ( $p < .01$ ) in terms of course enrollment predicting scores on the global mindedness scale. However, the interaction between MYP status and English and math coursework was not significant. Indicating that the effect on global mindedness subscales did not differ as a function of whether or not a student had participated in the MYP. When evaluating English and math course enrollment over time there was a significant relationship for students who participated in the MYP. Students who participated in the MYP took more challenging English courses over a three-year period (model significance level  $p < .01$ ). The predictor indicators included responsibility, cultural pluralism and efficacy. Students who participated in the MYP took more challenging Math courses over a

three-year period (model significance level  $p < .01$ ). The positive significant predictors included responsibility, cultural pluralism, efficacy and global centrism.

When the relationship between each of the subscales of global mindedness was analyzed independently and compared to each academic performance and course enrollment variable, cultural pluralism and global centrism had the strongest significance. The subscales of cultural pluralism, global centrism, and efficacy were most consistently significant across variables. There were mixed findings of significance for efficacy and responsibility. The results further indicate that students who had higher English and Math grades and GPA over time had lower efficacy. Students who took on-level courses scored lower on responsibility, while students who scored higher on English and Math assessments over time scored higher on responsibility.

Research question five sought to explore the relationship between teacher perceptions of global mindedness and a cluster of characteristics (years teaching, years teaching in an IB school, years teaching in a non-IB school, IB training, courses taught, college major, lived abroad, worked abroad, speaks a second language). The data found that there was a significant relationship between five of the nine characteristics (years teaching in an IB school, courses taught, college major, lived abroad, and speaks a second language) and perceptions of global mindedness.

Further, the research shows that when evaluating each of the five dimensions individually across all teacher characteristics, cultural pluralism and responsibility had the strongest relationships. Cultural pluralism, responsibility, efficacy, and interconnectedness were consistently seen among five or more of the characteristics. There were mixed findings for

global centrism, which showed significant relationships for years teaching in an IB school, IB training and speaking a second language.

## CHAPTER 5: DISCUSSION AND CONCLUSIONS

This chapter begins with a brief overview of this quantitative, exploratory research study on the construct of global mindedness as defined by Hett (1993) from the perspective of students and teachers in relation to participation in the International Baccalaureate Middle Years Programme, academic performance, course enrollment, and teacher characteristics respectively. This study is purposefully contextualized in a world that is experiencing the impact of the complex, diverse, and interconnected processes of globalization. In that these processes likely contribute to the increasing inequalities across all facets of the human condition, this study suggests that teachers need to acquire the requisite knowledge and skills to teach students to further develop a critical global perspective and to take responsible action. It also suggests that students need to develop the knowledge, attitudes, and skills required to possess a critical global perspective, and to take responsible action in order to address the complexities and challenges of life in a globalizing world. The discussion of findings is considered in light of the study's limitations. This chapter concludes with recommendations for future research and a final summary of the study.

### **Overview of Study**

The impact of a globalizing world has created challenges related to human rights, inequality, and diversity, as well as the role of education in economic, political and cultural agendas. In the realm of education, the increasing pace of globalization has resulted in increasing demands to incorporate a global perspective into the K-12 curriculum (Kirkwood-Tucker, 2009). Students who are tasked with taking responsible action in this globalizing world could benefit from possessing the knowledge, skills, attitudes, and perspectives to do so.

Additionally, it could be useful for teachers to be trained and able to provide opportunities for students to develop global thinking around the ideas of shared responsibility, interconnectedness, and cultural pluralism. According to Shakelee and Baily (2012), the idea of training teachers differently to prepare students differently is not new and some changes have been made to teacher training and curriculum standards. However, the complex forces of globalization are rapidly intensifying the need for revised, high-quality, sophisticated teaching and learning. Curriculum standards and teacher training that focus more on conceptual understanding, critical thinking, and multiple perspectives have the potential to guide future teaching and learning in schools that are surrounded by a rapidly globalizing world (Shakelee & Bailey, 2012; Spring, 2008; Walker, 2011). With this in mind, a demonstration and understanding of the dimensions of global mindedness, as well as an identification of the tools and strategies needed to promote this multifaceted concept, becomes more relevant within the context of the development of a global perspective for education.

This study was based on the work of E. Jane Hett (1993) who held that it was indeed possible to educate individuals for a global perspective (Hanvey, 1976; Hett, 1993). Through her substantial research, which included a review of related empirical measures, Hett proposed that global mindedness be defined as “a worldview in which one sees oneself as interconnected to the world community and feels a sense of responsibility for its members which is reflected in attitudes, beliefs, and behaviors” (Hett, 1993, p. 143). In addition, Hett developed five dimensions of global mindedness (cultural pluralism, efficacy, global centrism, interconnectedness, and responsibility) and used them as the foundation for the 30-item Global Mindedness Scale (GMS).

Prior to this study, the GMS was used on a few occasions in a variety of contexts. Following Hett (1993), Gillian (1995), and Zhai and Scheer (2004) used the GMS to identify levels of global mindedness for undergraduate students, faculty, and administrators. Kehl (2005) utilized the GMS to compare differences between personal characteristics, general self-efficacy, and the social attitudes of students who had participated in short-term or semester-long study abroad programs. One of the most relevant uses of Hett's GMS as it relates to this study is Duckworth, Walker-Levy, and Levy's (2005) study of international mindedness of pre- and in-service teachers. Duckworth et al. (2005) used the terms "international mindedness" and "global mindedness" synonymously. This study addresses the lack of clarity between the two concepts by identifying the use of the word "international" in the term "international mindedness" as emphasizing the relationships between nations, rather than those based on global standards. This framing demonstrates an awareness of the interrelation of all peoples as espoused through the five dimensions of global mindedness. In 2013, the GMS was used to explore the perceptions of global mindedness among students enrolled in the MYP as compared to students not enrolled<sup>5</sup>. This constituted the first documented use of the GMS with secondary students. The current research was conducted with the data set from the aforementioned study. The current study is the first to explore teachers' perceptions of global mindedness within the context of implementing an International Baccalaureate program in the school where these teachers are currently teaching.

I explored perceptions of global mindedness between students who participated in the MYP as compared to students who did not participate in the MYP or who were newly enrolled

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<sup>5</sup> Confidentiality agreements require that the authors remain anonymous.

in the MYP as ninth graders. I analyzed the relationship between the students' perceptions of global mindedness and both academic performance and course enrollment. Then, I explored teacher perceptions of global mindedness and related the findings to specific teacher characteristics. There were mixed findings on students' perceptions of global mindedness when comparing MYP students to non-MYP students, suggesting that student development of global mindedness may evolve over time and is not significantly impacted by a single experience, as previous research also suggests. Teacher and student understanding of global mindedness in the MYP might be underdeveloped and focused on global centrism and cultural pluralism. The findings also suggest that specific teacher characteristics predict global mindedness and vice versa.

## **Discussion**

### **The Global Mindedness Scale and the Measurement of Student Perceptions of Global Mindedness**

In order to better incorporate the dimensions of global mindedness into teaching and learning at the secondary level in the International Baccalaureate Middle Years Programme, it could be valuable to explore the extent to which a relationship exists between participation in the MYP and students' perceptions of global mindedness. Once there is a better understanding of the extent to which students' perceptions of global mindedness relate to participation in the MYP, academic performance, and course enrollment, schools and teachers may be able to more intentionally identify and implement teaching and learning strategies that promote further development of global mindedness for all students in the International Baccalaureate Middle Years Programme (MYP). The findings from the exploratory study suggest that the

implementation of the MYP in the schools participating in the study is not consistently and significantly impacting students' perceptions of global mindedness.

An analysis of the findings for research question one (which evaluated perceptions of global mindedness of students who participated in the MYP as compared to students who only participated in the MYP in their first year of high school and students who did not participate in MYP at all) provides some initial understanding of students' perceptions of global mindedness in relation to an education program that emphasizes global mindedness in the written, taught, and assessed curriculum. When comparing the perceptions of global mindedness of students who participated in 3.75 years of the MYP (MYP is a total of five years) to peers in similar schools that do not have the MYP, the status effect was not significant. However, when comparing students new to the MYP in the ninth grade (meaning they experienced the MYP for three fourths of a year) to their peers that never had the MYP, the status effect was significant ( $p = .07$ ).

Although the MYP in ninth grade effect was significant, indicating that students new to the MYP in the ninth grade had higher scores on the global mindedness subscales, this single finding does not support a conclusion that participation in one year of the MYP significantly helps students develop global mindedness. This finding does not align with other findings and there are too many other confounding factors that could have contributed to this finding. There were no significant relationships between participation in the MYP in the ninth grade year and academic performance or course enrollment. Additional research is needed, including a comparison with a larger participant sample and an analysis of confounding factors that may influence the level of statistical significance. An alternative explanation for this finding may be



that as students have more experiences in high school and in life, they have the potential to further develop their understanding and appreciation for the dimensions of global mindedness.

Furthermore, while schools adjust their school mission to align with that of the International Baccalaureate, public schools are often required to continue meeting state and national standards, which focus on the academic success of children on standardized assessments (Bunnell, 2009). Schools may have good intentions and embrace the IB philosophy, however, other factors—especially policy and funding—could influence schools to focus more on the academic aspects of the IB and less on the development of global mindedness.

When comparing students who participated in the MYP to their peers who did not participate in the MYP, cultural pluralism, operationally defined as “an appreciation of the diversity of cultures in the world and a belief that all have something of value to offer” (Hett, 1993, p. 143), was significant ( $p = .07$ ). Further, when comparing students new to the MYP to peers who did not experience the MYP, the global mindedness dimension of cultural pluralism had a significant effect size ( $p < .01$ ). These findings may suggest that the dimensions of global mindedness are developing as students participate in the Middle Years Programme and are given more opportunities to develop their understanding of global mindedness.

These findings suggest that more research is needed on how students develop each of the five subscales of global mindedness and why cultural pluralism stood out for students who participate in the MYP. If schools are adhering to and espousing the IB mission to teach students about intercultural understanding and respect, then schools with the MYP may need to reconsider how they are teaching global mindedness to provide students with opportunities to develop all dimensions of global mindedness. Students may need to experience tangible

opportunities to develop and evaluate their progress in the acquisition of the attitudes, values, and skills necessary to have a worldview in which one sees oneself as connected to the world community as well as feels a sense of responsibility to take action.

An analysis of the findings by subscale (cultural pluralism, efficacy, global centrism, interconnectedness, responsibility) and all 30 items together suggested all items are relevant and interrelated. For this exploratory research, the five subscales were examined simultaneously as opposed to determining a composite score. Though this is a conservative form of analysis, it is the most frequent way the Hett GMS (1993) has been replicated. In addition, Hett's (1993) five dimensions coalesce to form one definition, further confirming the validity and reliability of the GMS as a tool for identifying the development of global mindedness for both secondary students and teachers. This does not imply that the GMS should be employed as a test or assessment of global mindedness, but rather as one tool for identifying the development of the five dimensions of global mindedness for reflection, as a needs assessment in determining strategic needs, or for professional development purposes. The appropriate use of the GMS may allow schools with International Baccalaureate programs to identify the impact of program implementation. Further, schools could use the findings to inform strategic planning, professional development, and school community awareness related to globalization and responsible action.

It may also be beneficial to consider using the five dimensions of global mindedness (cultural pluralism, efficacy, global centrism, interconnectedness, responsibility) to initiate the development of a comprehensive conceptual framework of global mindedness for schools to utilize. For example, the International Baccalaureate espouses the development of the IB learner

profile and requires the use of specific terms (balanced, communicator, inquirer, risk-taker, thinker, reflective, caring, principled, open-minded, and knowledgeable) that serve as the attributes of a developing global citizen (Appendix C). While well intended, the use of culturally specific terms, a narrow interpretation of identified attributes, and in some cases, the use of culturally inappropriate values, has caused confusion when developing global mindedness (Haywood, 2007). Perhaps these attributes and their definitions could be more aligned with the dimensions of global mindedness and schools could be expected to more explicitly teach and evaluate student development of said attributes. As a way of ensuring that schools adhere to this expectation, the International Baccalaureate could make the teaching of the attributes a standard that is evaluated at program authorization and every evaluation thereafter.

### **The Global Mindedness Scale and the Measurement of Student Academic Performance**

In order for children to live successfully, both economically and socially, in a better and more peaceful world, they need the requisite knowledge, skills, attitudes, and perspectives (Zhao, 2010). Academic performance in high school and college is one of the greatest predictors of acquiring the requisite knowledge, skills, attitudes, and perspectives. The International Baccalaureate's mission and fundamental drive for implementing international education is teaching and learning centered around global mindedness. Global mindedness must be explicitly taught when implementing any IB program (Hill, 2000; Walker, 2004).

With that in mind, this research sought to explore the extent to which MYP implementation impacted global mindedness as reflected in student academic performance. Student academic performance was operationalized as: math and English grades, GPA, and

English and math standardized test performance for students in the ninth grade (MYP is grades 6-10) as well as over time. The development of global mindedness requires students to seek multiple perspectives and develop genuine understanding of concepts that impact locally, nationally, and internationally. Global mindedness becomes a key component of the curriculum across disciplines in the MYP. If students are successfully acquiring the mindsets and skills described in the five dimensions of global mindedness (cultural pluralism, responsibility, efficacy, global centrism, and interconnectedness), is there a relationship between global mindedness, grades, GPA, and standardized test performance?

The findings show that there is not a positive significant relationship between global mindedness and the interaction between MYP status and ninth grade English grades, ninth grade math grades, and GPA. However, the relationship between global mindedness and the interaction between MYP status and high school standardized assessment performance was significant for the subject of English ( $p = .08$ ) and the subject of math ( $p < .01$ ). The mixed findings suggest that additional research is needed to better understand the extent to which global mindedness would reveal itself in student academic performance while participating in the MYP. As a comparison, when evaluating ninth grade English and math grades, and English and math high school assessment scores, there was a positive significant relationship between global mindedness scores and performance. Regardless of MYP status, students who had higher grades in the ninth grade and performed higher on standardized tests also scored positively higher on the global mindedness scale.

For exploratory purposes I examined each of the five dimensions of global mindedness individually and the interaction between ninth grade English and math grades,

GPA, and English and math high school standardized test performance and MYP status. There were contradictory findings of positive significance and no significance for any of the five dimensions and their interactions separately among the academic measures. For example, correlating with the findings from the first research question, there was a significant relationship between MYP status and global centrism and the interaction with English grades ( $p = .04$ ). In regard to math grades, there was not a significant effect on any of the five subscales. MYP status effect was significant for global centrism ( $p = .09$ ) from the perspective of GPA. For the standardized tests of high school English and math there was a significant relationship for responsibility, cultural pluralism, efficacy, and global centrism when evaluated individually. The exploratory findings suggest that it is plausible that students participating in the MYP have a higher GPA, and if they have a higher GPA, they may score higher on global centrism. If a student did not participate in the MYP, it is plausible that there may still be a stronger relationship between GPA and global centrism. Regardless of participation in the MYP, a student was more likely to score high on global centrism if she/he had a higher GPA. Students who experienced the MYP scored higher on global centrism regardless of GPA. This suggests that MYP influences global centrism but that its influence cannot be easily measured in GPA or grades.

To further explore the relationship between global mindedness, MYP status, and academic performance, I explored the relationship between math and English grades, GPA, and English and math standardized test performance over three years. Both English grades and English standardized test performance over time indicated a significant relationship ( $p = .06$  and  $p = .06$ , respectively), indicating that to some extent students who participated in the MYP had

higher average English grades and English standardized test performance over time. Further, math grades, GPA, and math standardized test performance measured over time had a positive significant relationship ( $p < .01$ ,  $p = .01$ , and  $p = .06$ , respectively) with MYP status. These findings suggest that the students who participated in the MYP could have a higher overall math, GPA, and math standardized test performance over time, as compared to their peers who did not participate in the MYP. Additional findings suggest that English proficiency on standardized tests declined for students who did not participate in the MYP, as did proficiency on standardized math assessments.

These findings suggest that more research is needed to better understand the extent to which global mindedness is expected to and does reveal itself in student academic performance. It would be useful to explore beyond the relationship between perceptions of global mindedness and academic performance, and attempt to discern whether there are any causal relationships where one influences the other or vice versa. Also, it would be important to better understand the potential causes of MYP students having higher academic performance over time as compared to their peers. Are MYP students learning more about perseverance and grit as compared to their peers? Or, are MYP students developing a stronger foundation of knowledge, skills, and behaviors that helps the MYP students outperform their peers over time? These contradictory findings suggest that a longitudinal study on the impact of the MYP on student perceptions of global mindedness could be valuable because global mindedness potentially reveals itself over time, such that students are better able to articulate it individually and through academic performance as they have more school and life experiences.

Shakelee and Baily (2012), suggest that the acquisition of global mindedness is evolutionary and not revolutionary; global mindedness takes time to develop and does not happen with just one teaching and learning experience. The relationship between MYP students' perceptions of global mindedness and academic performance was not significant for a point in time, however there were some correlations when looking over a three-year period. In contrast to those findings, the results of comparing student perceptions over 3.75 years of participation in the MYP and .75 years participation in the MYP were mixed. Participation in 3.75 years of the MYP did not predict higher scores on the global mindedness survey. However participation in .75 years of the MYP did predict higher scores on the global mindedness survey. These findings do not align with the idea that the development of global mindedness is evolutionary, and they also do not align with the other findings in this study in relation to both academic performance and course enrollment. The other findings in this study showed that participation in the MYP did not predict higher scores on the global mindedness survey in relation to academic performance and course enrollment. Other factors may have influenced the significant finding of participation in .75 years of the MYP and the higher scores on the global mindedness survey. The single finding does not align with the other findings and does not substantiate a conclusion that would definitively suggest that both Shakelee and Bailey's (2012) findings and the other findings from this study are invalid. Rather, the mixed findings from this study suggest further research is needed to better understand how students develop global mindedness, the factors that influence that development, and the time it takes to acquire and articulate one's understanding of global mindedness.

## The Global Mindedness Scale and the Measurement of Student Course Enrollment

In 2009 the Asia Society and Council of Chief State School Officers published a report that recognized education as the key to economic growth in a global knowledge and innovation-based economy. They highlighted the fact that low educational performance will have significant economic costs, therefore, countries around the world need to focus on increasing graduation rates, raising achievement, making educational systems more equitable, and rethinking the skills needed for the 21<sup>st</sup> century. Tucker (2013) suggests that in order for the U.S. to respond to the realities of globalization it must accept that there is a convergence of two major developments: the trajectory of global economic development and the workforce needed to teach our children in the current stage of global economic development. With that in mind, focusing research on course enrollment could inform educators about the extent to which students are choosing more advanced courses and developing their perceptions of global mindedness.

This research explored how course enrollment may be correlated with MYP status and global mindedness, finding that both ninth grade English and math enrollment in more challenging courses was significantly related to scores on the global mindedness scale ( $p < .01$  and  $p < .01$ , respectively). However, when evaluating ninth grade English and math coursework and the interaction between MYP status and global mindedness, there were no significant relationships. In general, students who took more challenging courses in the ninth grade scored higher on the global mindedness scales, however, the English and math coursework effect on global mindedness subscales did not differ as a function of whether or not a student



participated in the MYP. Since the MYP is for all students no matter their ability level, it is not totally surprising to see that MYP status did not influence students to take more challenging courses and have higher global mindedness. It is interesting to note that there seemed to be a plausible relationship between students who enrolled in more challenging courses and scoring higher on global mindedness. This could suggest that more research is needed on what students are learning in the more challenging courses that could influence their perceptions of global mindedness, or that what students are not learning in the less challenging classes is influencing their perceptions of global mindedness.

When exploring the relationship between global mindedness and course enrollment over time, the findings suggest that there was a positive significant relationship between MYP and more challenging course enrollment. In both English and math, students who participated in the MYP took more challenging course work over a three-year period than that of students who did not participate in the MYP. In the case of English, the subscales of responsibility, cultural pluralism, and efficacy were all significant predictors related to students in the MYP taking more challenging English courses. Students who experienced the MYP and scored high on these dimensions of global mindedness were more likely to take more challenging English courses. In regard to math, the subscales of responsibility, cultural pluralism, efficacy, and global centrism were all significant predictors related to students in the MYP taking more challenging math courses over time.

The global mindedness dimension of cultural pluralism and global centrism revealed the strongest relationships in the study. There were significant relationships between cultural pluralism, global centrism, and efficacy, and academic performance and course enrollment

factors consistently throughout the study. There were mixed findings for the subscale of responsibility and both academic performance and course enrollment. There was rarely a significant relationship between interconnectedness and any of the factors used in the study. These findings could suggest that cultural pluralism and global centrism are either the most common understanding of students in the MYP or are the most developed subscales of global mindedness. It would be interesting to better understand the relationship between these two subscales and the IB learner profile. Are cultural pluralism and global centrism most developed in the curriculum, most easily understood, and/or most frequently emphasized in the teaching?

Although there is some variability in the research findings, there is reason to support Sachs' (2007) suggestion that at a time when global thinking is needed to address global problems, the International Baccalaureate is well positioned to offer a viable solution. The mixed findings suggest that more research is needed to better understand the relationship between global mindedness and student perceptions, especially focusing on how and where the understanding of global mindedness might reveal itself (e.g., in academic performance, course enrollment, standardized test performance, and/or on its own). Additionally, the inconsistency in the findings suggests that additional systematic research on the impact of the MYP could help to better inform the IB on the extent to which there is alignment between the intent of the programs and the impact of the programs on students. More research could also be helpful in guiding teachers in the development of content and dissemination strategies for explicitly teaching global mindedness.

## **The Global Mindedness Scale and the Measurement of Teacher Perceptions of Global Mindedness**

The concept of global mindedness used for this study is grounded in the theoretical framework of the need for the development of a critical global perspective of education that focuses more on collaboration and human rights than on the furthering of global economic competition. Developing global mindedness is increasingly important for professionals in an ever-changing global context. This is especially true for educators who teach students and interact with families from a wide range of backgrounds (Darling-Hammond, 1997; Shakelee & Baily, 2012; Zhao, 2010). In order to facilitate the development of global mindedness through the five dimensions (cultural pluralism, efficacy, global centrism, responsibility, and interconnectedness) in teacher education and professional development, it would be strategic to identify the teacher characteristics and experiences that potentially influence the development and demonstration of this multidimensional concept. The findings for this study identified five of nine significant relationships between the teacher characteristics and the five subscales of global mindedness for teachers in schools authorized to teach the Middle Years Programme and/or the Diploma Programme. The findings suggest that higher scores on the GMS could be influenced by teacher characteristics or vice versa.

### **Teacher Characteristics**

**Years teaching.** The data for this study did not show a significant relationship between the five dimensions of global mindedness and the number of years teaching. However, when looking at each subscale individually using analysis of variance, four of the five dimensions (responsibility [ $p = .05$ ], efficacy [ $p = .06$ ], global centrism [ $p = .07$ ], and interconnectedness [ $p =$

.08]) were significant, suggesting that teachers who taught more than 16 years scored higher on these four dimensions of global mindedness than teachers who taught 11-15 years. The variance in these findings suggests that more research is needed to better understand the influencing factors. For example, is there a relationship between age, years teaching and global mindedness? Both Gillian (1995) and Smith (2008) found that age was a predictor for the GMS. The results of other studies employing the GMS contradicted this idea, as no significant relationship for age and the dimensions of global mindedness were reported (Duckworth et al., 2005; Hett, 1993; Zhai & Scheer, 2004). Due to the mixed findings of this research and of previous research, it could be useful to further study the relationship between years teaching and perceptions of global mindedness across age groups and years teaching. This understanding may support professional development that provides opportunities for teachers who have been teaching for different amounts of time to share their experiences, thereby supporting others in their understanding of the dimensions of global mindedness.

**Years teaching in a school with an International Baccalaureate program.** There was a significant relationship between teacher perceptions of global mindedness and the number of years teaching at a school with an IB program ( $p < .01$ ). Further, when looking at each of the five dimensions of global mindedness individually, the data suggest that teachers who taught in an IB program for 6-10 years scored higher on global centrism than their peers who only taught in an IB program for 2-5 years. Additionally, in comparison, there was not a significant relationship between global mindedness and teaching at a non-IB school. As such, the number of years a teacher taught at a non-IB school before working at an IB school was irrelevant. These findings are supported in the literature (Shakelee & Baily, 2012), suggesting that intercultural

development is an evolutionary process rather than a revolutionary process that can be achieved in one course or one single experience. This finding that teachers working at an IB school had higher scores on the GMS, suggests that perceptions of global mindedness among teachers who work in IB schools are influenced by ongoing professional development on topics of global mindedness. It is plausible that this information could influence the manner in which teachers are trained to educate children about global mindedness. Integrating ongoing and purposeful international and intercultural experiences that require teachers to consider multiple perspectives, in both the pre-service and service teacher training, could be considered as a possible implication of this finding.

**Subject taught.** Helping students develop a sense of global mindedness is more important today than ever before (Darling-Hammond, 1997; Hill, 2007; Noddings, 2005; Zhao, 2010). It could be valuable to provide opportunities for teachers and students to develop an understanding of global mindedness with the same rigorous exploration and treatment as all other subjects (Skelton et al., 2002). A plausible implication of this study would be to provide more ongoing professional development on global mindedness to teachers, especially teachers of math and science. The relationship between perceptions of global mindedness and courses taught was significant ( $p = .01$ ) indicating that the courses taught predicted a teacher's score on the GMS or vice versa. Additionally, analysis of variance revealed that on the dimension of responsibility, humanities teachers scored significantly higher than science teachers. On the dimension of cultural pluralism, humanities teachers scored higher than both math and science teachers with a significance level of  $p < .01$ . In regards to the dimension of efficacy, humanities teachers scored significantly higher ( $p < .05$ ) than math teachers.

These findings suggest that the teachers of the humanities are more likely to be globally minded; more research is needed to better understand why this occurs. For example, is the type of person drawn to teaching the humanities more likely to be globally minded, or are people who are less globally minded drawn to teaching subjects other than humanities? The finding that humanities teachers scored higher on the global mindedness survey aligns with the findings of previous research (Duckworth et al., 2005) and could be explained by giving consideration to the content taught in a humanities course. Frequently, humanities teachers provide opportunities for students to learn through understanding multiple perspectives and teach students to identify and analyze differences. Two studies (Duckworth et al., 2005; Kirkwood-Tucker, 2009) and these exploratory findings suggest that humanities teachers are more likely to understand global mindedness than their peers. Would it be worthwhile for educational leaders to consider offering different and more targeted training on global mindedness for math and science teachers? If math and science teachers had more training on global mindedness they may be more likely to provide more opportunities for students to develop global mindedness in the written and taught curriculum.

**IB training.** According to the data from this study, attending an official IB training did not predict global mindedness. When exploring the individual dimensions, teachers who attended an IB training did score significantly higher on the dimension of cultural pluralism. Cultural pluralism is an appreciation of the diversity of cultures in the world and a belief that all have something of value to offer (Hett, 1993). At every official IB training for teachers, a session is spent on training teachers to consider different perspectives, and teachers are encouraged to provide students with numerous opportunities to consider a variety of

perspectives. More research is needed to better understand the significance of attending official IB trainings on teacher practice and perceptions of global mindedness.

Official IB trainings occur outside of the school, trainers are provided by the IB, and the training is 15 hours. There is no expense to the teacher to attend the training. The school district pays all the costs associated with the training: registration, travel, food, hotel, and substitute teachers. The training includes any teachers in IB schools that teach that subject and also registered for the training at that same time and location. Teachers often come from North, South, and Central America to attend these trainings, so there is an informal opportunity to learn from educators from a variety of school settings. The IB has an authorization and evaluation requirement that mandates that at least one teacher per subject area, at each school offering the MYP, attend official IB trainings. While the finding for the relationship between IB training and teacher perceptions of global mindedness was unexpected, it may be explained by the significant finding between the years teaching at an IB School and perceptions of global mindedness. Teachers attend official IB training for 15 hours very few times (once or possibly twice) while teaching in an IB school. An IB coordinator, with a full-time and fully released (meaning she/he teaches no classes to students) schedule, provides the majority of the professional development to support teachers in implementing the IB at the school. Teachers are provided with frequent, ongoing, and varied training and coaching as they implement the MYP at their school. Further research on the topic of professional development could better explain these results and inform both the IB and schools about the type, significance, and importance of providing professional development to teachers, as it relates to influencing their perceptions of global mindedness.

**College major.** Similar to the findings for courses taught, the study suggests that college major did predict scores on the subscales of the global mindedness survey with a significance level of  $p < .01$ . Teachers who studied humanities (languages, English, social studies, psychology, international education, political science, arts, dance, music, counseling, social work) reported higher scores on the global mindedness survey. When each of the five subscales was analyzed individually, humanities teachers scored significantly higher on three of the five subscales (responsibility [ $p < .01$ ], cultural pluralism [ $p < .01$ ], and interconnectedness [ $p < .01$ ]). On each of these three dimensions, teachers who studied humanities scored highest, followed by teachers who studied education. These teachers of humanities and education scored significantly higher than teachers who studied science. An implication of this finding may be to consider ways in which more emphasis on teaching the dimensions of global mindedness could be worked into math and science curriculum. For example, as a part of the written and taught science curriculum, it might be useful to include lab experiences in which students analyze science concepts that show how science investigations are interconnected. Students could also study problems and propose solutions to global problems, thereby aiding in the development of an understanding of global centrism. In math, students could study and propose multiple solutions to problems that highlight how one's actions can make a difference in national and international issues.

Additionally, it is worth exploring the extent to which a person who studies humanities and education may be predisposed to being more globally minded. Or, conversely, are people who study subjects other than humanities and education less likely to be globally minded? In that science teachers potentially do not enter the workforce as globally minded as teachers who



studied humanities and education, are there professional development opportunities that could be provided to these teachers to ensure that they understand and can implement ideas of global mindedness in the classroom? This finding also suggests that schools may want to consider some potential implications regarding hiring. For example, IB schools may want to prioritize hiring math and science teachers who also have humanities and education degrees. It could be beneficial for schools to inform math and science teachers about the importance of fostering a globally minded perspective at the school, as well as to prioritize hiring teachers who are willing to engage in further discussion and development of the concept of global mindedness.

**Lived abroad.** The data for this study showed that the relationship between teacher perceptions of global mindedness and living abroad was significant ( $p = .07$ ). When evaluating each of the five subscales of global mindedness individually, there was a significant relationship between perceptions of global mindedness and each individual dimension: responsibility ( $p = .01$ ), cultural pluralism ( $p < .01$ ), efficacy ( $p = .03$ ), global centrism ( $p = .03$ ), and interconnectedness ( $p = .03$ ). Although Kehl (2005), Kirkwood-Tucker et al. (2010), and Hersey (2012), support the finding of the importance of longer periods abroad when developing the dimensions of global mindedness, previous research does present some contradictions (Duckworth et al., 2005; Smith, 2008).

Since living away from one's home may allow for more opportunities to interact with people from other cultures, including time to gain a better understanding of the local language, culture, and contexts, additional support for this finding may exist. According to Douglas and Jones Rikken (2001), in that study abroad students went beyond their comfort zones to explore new cultures and became involved in new relationships, they are more likely to enter situations

involving people of different cultures in the future. An implication of this finding includes promoting experiences of studying, teaching, or living abroad for teachers in IB programs. Alternatively, if living abroad is not a realistic possibility, then schools should value and promote other types of experiences that give teachers opportunities to be exposed to and collaborate with people from other cultures in various contexts.

**Worked abroad.** The study findings reveal that there was not a significant relationship between perceptions of global mindedness and teachers who worked abroad. However, when evaluating each of the dimensions of global mindedness individually there was a significant relationship with four of the five dimensions (responsibility [ $p = .03$ ], cultural pluralism [ $p < .01$ ], efficacy [ $p < .10$ ], and interconnectedness [ $p = .01$ ]). These contradictory findings may suggest that working abroad might be important but might not be as influential to perceptions of global mindedness as living abroad.

These findings raise more questions than answers: Can global mindedness be developed by living abroad? Could working abroad make a person feel negatively about global mindedness? For example, could a teacher develop the opposite of global centrism and feel more allegiance to one's own country if they had negative experiences working abroad? Could teachers miss living and working in their home country and, if so, would this correlate with their understanding of global mindedness? Additionally, does the length of stay and/or working abroad impact perceptions of global mindedness? Could a teacher travel to another country for the summer to live and/or work and return a more globally minded person? A person who takes the initiative to travel or work abroad for a short amount of time may be eager to experience and understand other perspectives. The person might go into the experience

with a positive mindset and openness to global mindedness, and then the experience may enhance that understanding of other cultures. If the person were to stay abroad for a longer period of time, could they develop resentment toward other perspectives because of a desire to return to one's own culture and known society?

This is a limited area of research, and because the findings from this exploration suggest that living abroad is significantly related to teacher perceptions of global mindedness while working abroad is not, few conclusions can be drawn. These findings may be better understood after further research with a larger sample of teachers who lived and/or worked abroad for extended and varying amounts of time. Research that included a larger sample and additional background questions of teachers who studied abroad, compared to those who worked abroad, could provide information about why teachers who lived abroad may have higher scores on the global mindedness survey than those who worked abroad. Teachers who study abroad may voluntarily choose to do so and have higher perceptions of global mindedness going into the experience, while those that work abroad may do so out of necessity and may not be as globally minded entering into the experience. In the latter case, these teachers may experience working abroad in a negative way, thereby negatively impacting their perceptions of global mindedness.

Research that included analysis of teacher perceptions of global mindedness for teachers who lived and worked abroad for different amounts of time would offer insight into the impact of time and specific experiences on the development of global mindedness. Kehl and Morris (2008) suggest that living abroad for eight weeks or less does not significantly impact perceptions of global mindedness, but there is little research on understanding the perceptions of global mindedness for teachers that study and/or work abroad for longer and varying

amounts of time. Teachers who study abroad for a pre-determined amount of time, such as six months to a year, might have higher perceptions of global mindedness because they chose to participate in the experience and know it will only last for a finite period. Teachers who work abroad because they have to, or for an undetermined amount of time that is longer than eight weeks, may become bitter about the experience and form negative perceptions of global mindedness.

**Second language speaking ability.** According to the data from this study, the ability to speak a second language has a positive impact across the dimensions of global mindedness. Speaking a second language significantly predicted ( $p < .01$ ) teacher perceptions of global mindedness. Teachers who speak a second language demonstrated higher levels of global mindedness on all five of the dimensions (responsibility [ $p < .01$ ], cultural pluralism [ $p < .01$ ], efficacy [ $p = .02$ ], global centrism [ $p = .02$ ], and interconnectedness [ $p < .01$ ]) than those that do not speak a second language. Interestingly, 50.3% of the teachers who completed the survey reported that they speak a second language, whereas only 18% of surveyed Americans report speaking a second language (Skorton & Altschuler, 2012). The finding that the ability to speak a second language is related to greater global mindedness is supported by research, which indicates that second language acquisition may widen understanding of cultural practices and beliefs, thereby supporting the development of cultural pluralism, efficacy, and interconnectedness (Merryfield, Jarchow, & Pickert, 1997). Therefore, it is plausible that the ability to speak more than one language is a relevant characteristic, which may positively correlate with the development of the dimensions of global mindedness.

Although the study found evidence of the importance of speaking a second language in the development of the dimensions of global mindedness, it cannot be inferred that learning a language introduces you to another culture or vice versa. Rather, these findings suggest that opportunities to communicate and think through another perspective may influence one's perceptions of global mindedness. The very nature of language learning exposes the individual to different patterns of thinking, interacting, and speaking, which may prompt changes in roles and relationships that enhance awareness and appreciation of other cultures (Fennes & Hapgood, 1997). In most cases, by the time teachers are working in a classroom there are some unchangeable teacher characteristics (years teaching, subject taught, college major), but there are also changeable characteristics, such as speaking a second language. As such, there are potentially very specific things teachers can do to change their perceptions of global mindedness.

While recognizing the limited power and effect size for the findings of this study, some implications related to the findings for second language ability include support for additional language acquisition initiatives and/or recommending that current and prospective teachers (and even students) learn a second language to facilitate the development of global mindedness. In addition, education leaders may consider recruiting teachers who speak a second language with the idea that they may be globally minded or more willing to teach global mindedness to students.

**Summary of teacher characteristics.** The findings related to teacher characteristics and perceptions of global mindedness suggest that years teaching at an IB school, courses taught, college major, experience living abroad, and second language speaking ability have a positive

relationship to the development of global mindedness for teachers who work in schools that have IB programs. It may be worthwhile to further explore the relationships between this cluster of teacher characteristics as they pertain to teacher development of curriculum materials that include a focus on global mindedness. We can infer from the findings that it may be useful for teachers to have more opportunities to interact with and participate in the types of intercultural experiences that allow for the development of global mindedness. The cluster of characteristics (living abroad, speaking a second language, college major, and teaching at a school with IB) may also be driven by a personal desire for new experiences that influence a change in perspective and understanding of oneself and other cultures. As this research is grounded in the theory that it is indeed possible to teach for a global perspective (Hanvey, 1976; Hett, 1993), this study highlights the potential value of providing teachers with meaningful interactions across cultures was a way of facilitating the development of global mindedness.

### **Study Limitations**

Study limitations included the use of the GMS survey with students, the limited type of teachers who volunteered to take the survey, and the survey instrument itself. Students were asked to take the GMS survey three quarters of the way through their ninth grade year of schooling, which meant they either had 3.75 years of the MYP, three fourths of a year of the MYP, or no experience with the MYP. It would have been more beneficial for students to have taken the survey at the beginning of sixth grade (the beginning of the MYP) and at the end of the MYP (the end of 10th grade) in both schools with the MYP and those without.

A disproportionate number of students from the MYP took the survey as compared to students in schools that did not have the MYP. School leaders of schools that did not have the

MYP determined whether or not their students participated, and it was not easy to convince these schools to relinquish instructional time in order to participate in this research. A further limitation was that the racial breakdown of students in the MYP compared to those not in the MYP was not equivalent. More White students in the MYP took the survey (48.4%) than White students not in the MYP (26%). Black students comprised 12.7% of the students who took the survey in the MYP schools and 26.6% of the students who took the survey in the non-MYP schools. Only 17.6% of students in the MYP schools received FARMS whereas 36.2% of students in the non-MYP schools received FARMS.

Analysis of student academic performance only utilized math and English grades and standardized assessments. Because the MYP emphasizes and requires schools to teach eight subject areas, the study could have been more complete and informative if it had analyzed grades and standardized test performance for more subject areas.

The MYP is a curriculum framework and schools are required to adhere to specific standards to become and remain authorized IB schools. That said, in the spirit of inquiry, reflection, and improvement, the IB does not expect that all schools are achieving all the standards at a high level at all times. The IB's openness to growth and development may mean that the quality of the MYP implementation can vary greatly and therefore have a differentiated impact on student perceptions of global mindedness, academic performance, and course enrollment choices. Additionally, the acceptance that the MYP is implemented in schools to varying degrees also allows for varying understanding and perceptions of global mindedness from the teacher's perspective.

Both the students and the teachers who completed the GMS survey for this exploratory research came from schools within the same urban/suburban school district. While this may be seen as beneficial because it could mean that the students and teachers have the same context for living and schooling, it could also mean that they are all exposed to a similar and potentially high degree of global mindedness. In future research, it could be beneficial for students and teachers from differing social contexts within the United States to complete the GMS survey. The awareness of global mindedness might be higher in this specific area of the country. Of the teachers who completed the survey, 77% held a master's degree. Throughout the United States, only 47.7% of teachers (both in public and private K-12 schools) have master's degrees (Department of Education, 2012). Additionally, of the teachers who completed the survey, 50.3% reported that they spoke a second language as compared to 18% of American adults who reported that they speak a second language (Skorton & Altschuler, 2012). The students and teachers who participated in the survey for this study are diverse and may not completely represent schools, students, and teachers who experience the IB MYP across the United States' public education system.

Finally, there is some sense that the GMS survey has the potential to inspire a level of social desirability, especially during times of war or global conflict (Hett, 1993). Living in such a diverse community and attending/working at schools that serve diverse communities could potentially raise awareness of global issues and motivate students and teachers to respond favorably as a way of demonstrating a level of social consciousness. It could potentially be more useful to have the same students and teachers complete the survey multiple times as a pre/post experience of the MYP to see if there are individual differences using the same sample. A



pre/post survey could show the development of global mindedness over time. Additionally, it could be useful to employ the survey with students and teachers from different demographic areas of the United States and who live in differing social contexts.

### **Recommendations for Future Research**

The mixed findings from this study suggest the potential existence of relationships between student perceptions of global mindedness and academic performance and course enrollment. Additionally, there are potential significant relationships between teacher perceptions and a cluster of teacher characteristics that could impact teaching and learning in the International Baccalaureate Middle Years Programme. Further research in the following five key areas of the International Baccalaureate, as it relates to the development of global mindedness, would help to substantiate these findings and provide more concrete implications:

1. Learning: The extent to which students are expected to articulate their understanding of global mindedness as they participate in the Middle Years Programme.
2. Curriculum development: The development of global mindedness in the written and taught curriculum, and its relationship to academic performance and course enrollment.
3. Teacher professional development: Teacher development of global mindedness and how this influences the written, taught, and assessed curriculum.
4. IB program implementation: The extent to which the quality of MYP implementation relates to student perceptions of global mindedness.

5. **Accountability:** The development of an evaluation tool that teachers and students could use to reflect on and measure the development of global mindedness.

These ideas will be developed further as considerations for future research.

## **Learning**

Just as globalization is a complex concept, global mindedness is also multidimensional, and it may take time to both develop and articulate a deep understanding of global mindedness. There is little research on how secondary students learn and demonstrate global mindedness. If it is not just a singular experience that helps a child develop global mindedness, are there some key experiences that aid that development? Are there important ideas and concepts a student could learn throughout all subject areas that would foster the development of global mindedness? Further, are there particular lessons that need to be taught that would improve students' ability to articulate their understanding of global mindedness? The development of global mindedness could be demonstrated by the results of a mixed-methods study examining how students develop and articulate global mindedness as participants in the MYP. The study could include interviews with students as well as a survey that asks students about how they develop and articulate the dimensions of global mindedness. The study could include questions that address learning across all subject areas, not just English and math. These findings could begin to explain how students learn to develop and articulate global mindedness.

Would it be useful to promote the understanding of the five dimensions of global mindedness by incorporating and aligning the dimensions of global mindedness with the International Baccalaureate Learner Profile (Appendix C)? For example, it could be useful to

ensure all dimensions of global mindedness are explicitly included in the learner profile. This study found that MYP students had higher scores on cultural pluralism and global centrism than non-MYP students, possibly suggesting that these two dimensions are more apparent than the others in the written and taught curriculum. While MYP teachers have already begun to work on integrating the IB Learner Profile into the written and taught curriculum as a requirement of MYP implementation, they may not include all the dimensions of global mindedness. It could be of interest to study how students learn and develop their understanding of global mindedness when all the dimensions of global mindedness are taught more explicitly throughout all subject areas as part of the IB Learner Profile.

For comparative purposes, a mixed-methods study could be employed to better understand the development of global mindedness for teachers and students in both International Baccalaureate Middle Years Programmes and non-International Baccalaureate Middle Years Programme schools (and all IB schools versus non-IB schools) located in various regions of the United States and/or the world. The study could explore how teachers use the dimensions of global mindedness in their teaching and how students learn global mindedness. This type of research would need to include more than one administration of the GMS at various points in participation of the MYP. The qualitative aspect of the study could include interviews with teachers to understand how teachers include global mindedness in the written and taught curriculum. These interviews could provide greater insight into how teachers create opportunities for learning global mindedness. Interviews with students would offer improved understanding of student perceptions of when and how they are learning global mindedness. For example, do students see the concept appear in one particular subject more than another,

and to what extent do they believe it is an important aspect of what they should be learning as part of the MYP experience?

A longitudinal study of student perceptions of global mindedness starting at the beginning of the MYP and following participants through the end of the MYP, the end of high school, and into college and their careers could show how students develop their perceptions of global mindedness over time. This type of research would show the extent to which the development of global mindedness is evolutionary. The study could be conducted across demographically different regions and include a diverse student sample. The research would need to include either a pre-test/post-test or annual global mindedness survey completion over the years of participation in the MYP and after. It will be important to continue the research after student participation in the MYP to begin to understand how time and life experience might also contribute to the development of global mindedness.

### **Curriculum Development**

If schools are implementing the International Baccalaureate then there is an assumption that the school believes in, values, and supports the IB mission to “create a better and more peaceful world through intercultural understanding and respect” (IBO, 2013). The IB provides a curriculum framework and schools are responsible for aligning that framework with the standards and content required by their school. With that in mind, it could be valuable to study how global mindedness is included in the curriculum development at a school that implements the MYP. To what extent do school leaders ensure that global mindedness is part of the written and taught curriculum, both vertically and horizontally? Research could be done on the curriculum used in a school, how the school develops and revises the curriculum, and how the

curriculum is taught. It would also be valuable to analyze how teachers measure the extent to which students are developing their individual global mindedness as they proceed through the IB program. This type of research could be done through document analysis and interviews with educators and students. It would be important to consider what global mindedness should look like in relation to academic performance and course enrollment and how the development of global mindedness could be measured in relation to both. The analysis of the curriculum could go beyond English and math, as the MYP emphasizes the use of global mindedness in all eight subject areas.

An element of this research could be an evaluation of course enrollment and academic performance in the first years of the MYP as predictors for success (both academic and the acquisition of global mindedness) in the Diploma Programme and in college. When global mindedness is explicitly part of the written and taught curriculum, does early positive academic performance and enrollment in the most challenging courses predict future academic success and strong development of global mindedness in the future? This would be a two part study; first it would be important to understand the extent to which global mindedness was a part of the curriculum. Then, student academic performance and course enrollment could be studied in schools that have been determined to exhibit significant use of global mindedness in the written and taught curriculum.

### **Teacher Professional Development**

Another future study that could provide deeper understanding of the teacher development of global mindedness would be an analysis of professional development for teachers as it relates to global mindedness. This study found that a cluster of teacher

characteristics related to higher scores on the global mindedness survey. In particular, this study found that teachers who had more years teaching at an IB school that provided ongoing professional development had higher scores on the global mindedness survey, but participation in IB training was not correlated with higher scores on the global mindedness survey. The IB could initiate and study the development of professional development opportunities for teachers in order to better understand and incorporate global mindedness into the teaching and learning of the International Baccalaureate program in which they work. A study could be conducted using a large sample of teachers who teach in the MYP and receive professional development that explicitly relates to global mindedness. How do teachers internalize and use the professional development to include global mindedness in their teaching? Are there specific teacher characteristics that enhance the professional development experience? Are there specific teacher characteristics that contribute a greater extent to the development of global mindedness? Finally, do these characteristics have any impact on student academic performance in specific subject areas? For example, if humanities teachers are more globally minded, do students who do well academically in humanities also have higher global mindedness scores?

### **International Baccalaureate Program Implementation**

IB schools are evaluated every five years and are provided a report on their implementation by the IB that includes commendations, recommendations, and matters that must be addressed. It could be valuable to study teacher and student development of global mindedness in relation to the quality of implementation. Do schools with fewer matters to address have teachers and students with higher scores on the global mindedness survey? For

example, if a school has fewer matters to address, does that suggest effective program implementation? If so, this may be an indication that global mindedness is an explicit and impactful focus of the MYP. If the goal of the IB is to ensure that students develop global mindedness, and there is a relationship to the quality of program implementation, then should the IB be concerned if IB program implementation is not of high quality or has many matters that must be addressed? The implication could be that the IB require a certain level of quality of implementation so it has the possibility of realizing the mission of the IB. The IB should consider developing and using a measurement tool that evaluates the impact of global mindedness on student perceptions, as another way of measuring quality of program implementation.

### **Accountability**

Given the mission of the International Baccalaureate to “create a better and more peaceful world through intercultural understanding and respect,” and that the IB works with schools to provide “rigorous assessment” (currently of content knowledge and not global mindedness), it may want to consider ways in which it could hold schools more accountable for ensuring that all students develop global mindedness. In holding IB schools accountable, it would be important to have a better understanding of how and when students develop global mindedness. A study could be conducted with the goal of developing an accountability tool that could be used in schools to help teachers and students follow their own progress in developing global mindedness. Students would have to keep track of their understanding and development of each dimension of global mindedness over time. A large number of examples could be provided to students, and students could provide their own examples of each

dimension. After the tool was refined, students and teachers could keep track of how much they believe they are developing global mindedness by using a rating scale for each dimension. Interviews would need to be conducted to more completely understand how teachers and students interpret and use the tool. As a result of the research, a common accountability tool could be created and shared with MYP teachers and students. It is plausible that if global mindedness is explicitly measured, it could become more valued at the school and be more evident when comparing MYP student and teacher perceptions of global mindedness with non-MYP student and teacher perceptions.

### **Summary**

I intended for the findings from this study to be considered by the International Baccalaureate Organization; schools that implement the International Baccalaureate Middle Years Programme (MYP); schools that are considering the implementation of the MYP; and teachers, students, and parents who are interested in exploring the relationship between student and teacher perceptions of global mindedness and academic performance and teacher characteristics. This research suggests that students could benefit from acquiring the knowledge, skills, attitudes, and perspectives needed in order to be globally minded, so they can navigate the globalizing world. Additionally, it could be useful for teachers to adjust their practices to provide students with more opportunities to develop the knowledge, skills, attitudes, and perspectives to be globally minded, especially in relation to the context of education in an ever-changing society. The findings from this study suggest that it could be valuable for current and prospective teachers to be provided with the educational tools and experiences that facilitate their understanding of global mindedness, as well as how to best



teach it to students, regardless of the specific subject area. In addition to supporting the use of Hett's (1993) Global Mindedness Scale (GMS) as a tool for understanding and identifying the development of the dimensions of global mindedness, the findings from this study may be useful in assisting the International Baccalaureate, and educators at all levels, in identifying and understanding the dimensions of global mindedness. This would serve as a first step in the journey towards developing a global perspective of education in order to better address the complexities and challenges of life in the midst of rapid globalization.

In a recent speech, Hargreaves proffered, "we should value what we measure, and measure what we value" (2014). In a way, this suggestion is the essence of my research. Globalization is transpiring, for good and for bad; the world is more complex, interconnected, and multidimensional than ever before. Schools and teachers need to educate children in different ways to better prepare them for the realities of the globalizing world. With that in mind, global mindedness—a worldview wherein one sees oneself as connected to the world community, feels a sense of responsibility, and reflects commitment through demonstrated knowledge, attitudes, beliefs, and behaviors (Hett, 1993)—needs to be taught, valued, and in turn, measured. International education programs, such as the MYP, that promote global mindedness in the mission, include global mindedness in the curriculum framework, and address aspects of global mindedness in the IB learner profile, have great potential for ensuring teachers and students develop global mindedness. However, the findings from this study suggest that schools that implement the MYP may need to increase their emphasis on learning, curriculum development, teacher professional development, program implementation, and accountability for the development of global mindedness.

There was not a significant relationship between participation in the MYP and students' perceptions of global mindedness. There was a positive significant relationship between students' perceptions of global mindedness and academic performance in English and math and on standardized tests in English and math, irrespective of participation in the MYP. Additionally, there was a positive significant relationship between MYP and taking more challenging English and math courses over time. Students who participated in the MYP took more challenging English and math courses and the global mindedness dimensions of responsibility, cultural pluralism, and efficacy were significant predictors. Cultural pluralism is the only dimension of global mindedness that showed some level of significance in all the research questions. These findings may imply that if global mindedness is an important value of implementing the MYP, then schools may need to consider more and different ways of teaching it, as well as of measuring the impact of global mindedness on academic performance as students develop their understanding of global mindedness.

The data analyses conclude that there is not a significant relationship between participation in the MYP and perceptions of global mindedness for students who participate in 3.75 years of the program. Although there is a significant relationship between participation in the MYP for three fourths of the ninth grade year and perceptions of global mindedness, other factors may be influencing this finding; more research with a greater sample size and more diverse population is needed. There is a significant relationship between students' understanding of cultural pluralism and participation in the MYP as compared to students who do not participate in the MYP. These findings suggest that there may be a difference in perception of global mindedness as students mature and experience high school, however more

research is needed to better understand the impact of the MYP and perceptions of global mindedness. Are students more reflective and better able to articulate their understanding of global mindedness as they experience high school and naturally mature with age? To what extent does the quality of the implementation of the MYP impact students' perceptions of global mindedness?

This study's findings also indicate that ninth grade English and math grades and GPA had no significant effect on the global mindedness scales in relation to whether a student participated in the MYP or not. However, there was a significant relationship between high school English and math standardized test performance, positive global mindedness scores, and participation in the MYP. At the same time, the results show a significant relationship between student perceptions of global mindedness and higher grades in English and math and better performance on high school English and math standardized tests, regardless of participation in the MYP. Exploration of the relationship between academic performance over time using English and math grades, GPA, and standardized test performance revealed a significant relationship for students who participated in the MYP, suggesting that students who experience the MYP do better academically over time.

This study also explored the relationship between student perceptions of global mindedness and course enrollment, investigating whether MYP students were more likely to take more challenging courses and to score higher on the global mindedness scale. There was not a significant relationship between course enrollment and the interaction of global mindedness and whether or not a student participated in the MYP. There was a significant relationship between more challenging course enrollment in English and math and global

mindedness, irrespective of participation in the MYP. Students who took more challenging courses also scored higher on the global mindedness scale. When looking at course enrollment over time, the findings suggest that MYP students took more challenging English and math courses over time. These findings align with the findings that MYP students had higher English and math grades and standardized test performance over time. Irrespective of scores on the GMS, students who participated in the MYP had higher academic performance and took more challenging courses over time.

The findings for the relationship between teacher perceptions of global mindedness and teacher characteristics showed a positive significant relationship between teacher perceptions of global mindedness and a cluster of five of the nine teacher characteristics (years teaching at an IB school, course taught, college major, living abroad, and speaking a second language). This suggests that more research is needed on the type and influence of teacher characteristics; especially the professional development provided to teachers in IB schools. Further, different professional development opportunities pertaining to global mindedness may be appropriate for teachers of different subject areas, as some teachers may potentially be more globally minded, depending on the course taught and their college major. Previous research (Duckworth et al., 2005) supports the finding that there is a relationship between speaking a second language and being more globally minded. A disproportionate number of teachers in this study reported speaking a second language (50.3%) as compared to the general American public (18%) (Skorton & Altschuler, 2012). This suggests that more research is needed with a greater sample of teachers from different types of IB schools to better understand the prevalent and relevant teacher characteristics of teachers that teach in an IB program.

The results of a study conducted by the Asia Society and Goldman Sachs (Bell-Ross & Desai, 2005) suggest that knowledge about the rest of the world is no longer a luxury—it is a necessity. This is especially true for students, as they will need to take responsible action as globalization occurs around them. Additionally, the need for understanding emphasizes the importance of the need for teachers to ensure that students have the opportunity to experience and develop global mindedness. It could be useful for teachers to consider the ways in which global mindedness can be incorporated into teaching and learning, especially given that it is an expectation of the International Baccalaureate organization. It is important for policy makers, school leaders, and teachers at all levels to consider and implement international education policies, frameworks, and practices that espouse a critical theory perspective and the development of global mindedness. In the ever-changing world, we will leave all children behind if education is not organized within a global context and teachers are not given the tools to understand, exemplify, and support the development of global mindedness of all students. If we can incorporate the five dimensions of global mindedness (cultural pluralism, efficacy, interconnectedness, responsibility, and global centrism) into teaching and learning, we will be on the path to developing effective education programs that provide all students with the opportunity to be contributing global citizens. All students will then have the knowledge, skills, attitudes, and perspectives required to function in a complex, interconnected world with a sense of value, social justice, and equality for all of humankind.

## APPENDIX A: IB PROGRAMME STANDARDS

### Section A: Philosophy

Standard A: The school's educational beliefs and values reflect IB philosophy.

### Section B: Organization

#### Standard B1: Leadership and structure

The school's leadership and administrative structures ensure the implementation of the IB programme (s).

#### Standard B2: Resources and support

The schools' resources and support structures ensure the implementation of the IB Programme (s).

### Section C: Curriculum

Standard C1: Collaborative Planning Collaborative planning and reflection supports the implementation of IB programmes (s).

#### Standard C2: Written Curriculum

The school's written curriculum reflects IB philosophy

#### Standard C3: Teaching and learning

Teaching and learning reflects IB philosophy

#### Standard C4: Assessment

Assessment at the school reflects IB assessment philosophy.

IBO (2011a)

## APPENDIX B: CHARACTERISTICS OF GLOBAL MINDEDNESS (Hett, 1993)

1. Possession of certain personal attributes: Tend to be inquisitive, flexible, tolerant of ambiguity, and open-minded; seeks opportunities for hearing the “other” and for learning about those different from themselves.
2. Belief in the unity of humanity: Have looked within and in that self-reflection, have found their own connection to the larger world community; are aware of the common thread that links them to other people everywhere; and feel a sense of global belonging.
3. Are cultural pluralists: Understand culture and how it influences worldview and behavior and, more than this find great pleasure in the diversity and challenge that cross-cultural experiences have brought into their lives.
4. Oppose prejudice: Reject all forms of prejudice, including ethnocentrism, chauvinism, and racial prejudice because they see beyond the superficialities of culture, color, religion, etc., to the essence of a shared human experience on earth.
5. Are activists: Live their vision by acting; have a sense of empowerment; believe in the importance of doing something; whether in one’s own community or on a global level; possess a sense that they can make a difference
6. Exhibit environmental concern: Are concerned for the wellbeing of the planet.
7. Understand the interconnectedness of the global community: Feel a sense of kinship and connectedness with the human family and see the benefits of this growing interconnection for their own culture of nation.
8. Have a sense of responsibility and care, are aware of their role within an extended community, feel a sense of responsibility towards the global community.
9. Possess additional language ability: believe that second language ability is important in order to be able to make switches internally to other frames of reference or worldviews.
10. Seek to learn: are active seekers of information about the global arena through reading, meeting people from other countries, and taking classes which have an international focus.
11. Possess a futurist perspective: have a long term perspective and try to be cognizant of the future.

## APPENDIX C: IB Learner Profile Attributes

The aim of all IB programmes is to develop internationally minded people who, recognize their common humanity and shared guardianship of the planet, help to create a better and more peaceful world. IB learners strive to be:

**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 wellbeing 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.

IB Learner Profile Booklet (2007)



## APPENDIX D: Types of International Baccalaureate Professional Development

### **Category 1 Workshops**

Category 1 workshops focus on IB philosophy and implementation. They provide professional development and assistance for schools that have decided to apply for IB authorization. They are also relevant for educators who are new to a school with an existing IB programme and those interested in joining an IB school.

Participants will gain an understanding of:

- the basic philosophy and curricular model of the programme, including the IB mission statement, learner profile, and curriculum documents
- programme standards and practices appropriate to the participants' role (e.g., teacher, administrator, head of school, and so on)
- the appropriate programme framework (PYP, MYP, DP)
- Category 1 workshops also help to prepare educators to implement the IB programme successfully by explaining the application authorization and implementation processes, including:
  - Timeline of the application process (including deadlines)
  - Professional development requirements

### **Category 2 Workshops**

Category 2 workshops focus on programme delivery. They emphasize written, taught and assessed curriculum and best classroom practice. These workshops enhance the understanding of the IB philosophy and programme model and improve the quality of programme delivery.

Participants will:

- make connections between the programme framework and the IB standards and practices
- enhance their understanding of the written, taught and assessed curriculum in IB programmes
- discuss and analyze IB standards and practices that are appropriate to their role
- engage in discussion and activities aimed at sharing pedagogical techniques and finding, sharing, developing and using resources.

### **Category 3 Workshops**

Category 3 workshops shift from implementation and programme delivery to impact and influence. They provide a forum for experienced educators to build on and enhance their professional development portfolios. Participants investigate specific areas of interest and expertise in depth through detailed explorations and discussions around topics such as learning theory, pedagogy, assessment and other scholarly interests.

## APPENDIX E: Global Mindedness Student Survey

The following survey asks your opinion about a variety of topics, including your school experience, your plans in high school, and your perceptions of world issues. There are no right or wrong answers. *Survey responses are confidential.* Neither schools nor students will be identified publicly by name. Thank you for participating in the survey.

---

**Please enter your student ID:**

**What high school do you attend?**

**Please read each statement and decide whether or not you agree with it. Then choose the response that most accurately reflects your opinion. There are no "correct" answers.**

---

**1. I generally find it interesting to spend time talking with people from another culture.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**2. I feel an obligation to speak out when I see my government doing something I consider to be wrong.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**3. Countries are enriched when they are made up of many people from different cultures and countries.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**4. Really, there is nothing I can do about the problems of the world.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**5. The needs of my country must be the highest priority when negotiating with other countries.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**6. I often think about the kind of world we are creating for future generations.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**7. When I hear that thousands of people are starving in an African country, I feel very frustrated.**

- Strongly Agree
- Agree

- Disagree
- Strongly Disagree

**8. Everyone can learn something of value from all different cultures.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**9. Generally, an individual's actions are too small to have a significant effect on the ecosystem.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**10. People should be permitted to pursue the standard of living they can afford, even if it has a slight negative impact on the environment.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**11. I think of myself, not only as a citizen of my country, but also as a citizen of the world.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**12. When I see the conditions some people in the world live under, I feel a responsibility to do something about it.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**13. I enjoy trying to understand people's behavior in the context of their culture.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**14. My opinions about national policies are based on how those policies might affect the rest of the world as well as my country.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**15. It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**16. My country's values are probably the best.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**17. In the long run, all countries probably will benefit from the fact that the world is becoming more interconnected.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**18. The fact that a flood can kill 50,000 people in Bangladesh is very upsetting to me.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**19. It is important that schools provide clubs and activities designed to promote understanding among students of different ethnic and cultural backgrounds.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**20. I think my behavior can impact people in other countries**

- Strongly Agree
- Agree

- Disagree
- Strongly Disagree

**21. The present distribution of the world's wealth and resources should be maintained because it promotes survival of the fittest.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**22. I feel a strong connection with the worldwide human family.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**23. I feel very concerned about the lives of people who live in countries where human rights are not respected.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**24. It is important that we educate people to understand the impact that current policies might have on future generations.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**25. It is not really important to me to consider myself as a member of the global community.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**26. I sometimes try to imagine how a person who is always hungry must feel.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**27. I have very little in common with people in underdeveloped nations.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**28. I am able to affect what happens on a global level by what I do in my own community.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**29. I sometimes feel irritated with people from other countries because they do not understand how we do things in my country.**

- Strongly Agree
- Agree



Disagree

Strongly Disagree

**30. Wealthy countries have a moral obligation to share their wealth with the less fortunate peoples of the world.**

Strongly Agree

Agree

Disagree

Strongly Disagree

APPENDIX F: Global Mindedness Teacher Survey

**Perceptions of Global Mindedness in the  
International Baccalaureate Middle Years Programme:  
The Relationship to Student Academic Performance and Teacher Characteristics  
Teacher Survey**

School:

How many years have you been teaching (including the current school year)?

How many years have you taught in an IB school (including the current school year)?

How many years have you taught in a school without the IB?

What courses do you currently teach and have you taught?

What was your major(s) in college? If necessary please specify between Bachelors, Masters, and Doctorate degrees.

Have you lived abroad?

Yes  No

If so, how many years?

Have you worked abroad?

Yes  No

If so, how many years?

Have you had IB training?

Yes  No

Did you participate in the Peace Corps, AmeriCorps, or a like volunteer program?

Yes  No

Please read each statement and decide whether or not you agree with it. Then choose the response that most accurately reflects your opinion. There are no "correct" answers.

---

**1. I generally find it interesting to spend time talking with people from another culture.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**2. I feel an obligation to speak out when I see my government doing something I consider to be wrong.**

- Strongly Agree
- Agree
- Disagree
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**3. Countries are enriched when they are made up of many people from different cultures and countries.**

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**4. Really, there is nothing I can do about the problems of the world.**

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- Disagree
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**5. The needs of my country must be the highest priority when negotiating with other countries.**

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**6. I often think about the kind of world we are creating for future generations.**

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**7. When I hear that thousands of people are starving in an African country, I feel very frustrated.**

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**8. Everyone can learn something of value from all different cultures.**

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**9. Generally, an individual's actions are too small to have a significant effect on the ecosystem.**

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Disagree

Strongly Disagree

**10. People should be permitted to pursue the standard of living they can afford, even if it has a slight negative impact on the environment.**

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Disagree

Strongly Disagree

**11. I think of myself, not only as a citizen of my country, but also as a citizen of the world.**

Strongly Agree

Agree

Disagree

Strongly Disagree

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Disagree

Strongly Disagree

**13. I enjoy trying to understand people's behavior in the context of their culture.**

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Agree

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- Strongly Disagree

**15. It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.**

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- Agree
- Disagree
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**30. Wealthy countries have a moral obligation to share their wealth with the less fortunate peoples of the world.**

- Strongly Agree
- Agree
- Disagree
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