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Teachers' Perspectives Implementing Inquiry-Based Learning in the International Baccalaureate Primary Years Program

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Walden University
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Abstract

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Constance Marie Bahn

MS, Walden University, 2011

BS, Millersville University, 2007

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

The International Baccalaureate Primary Years Program (IBPYP) curriculum for students ages 3–12 is implemented using inquiry-based learning. There is a lack of understanding about primary international teachers' perspectives about their implementation of inquiry-based learning in this setting. The purpose and research question of this basic qualitative study addressed the identified lack of understanding about international IBPYP teachers' perspectives in an urban setting in the International Baccalaureate Africa, Europe, and Middle East region about their implementation of inquiry-based learning. The Reggio Emilia approach served as the conceptual framework of this study. Data were gathered from 11 participants through semistructured interview questions, triangulated through a researcher journal, audit trail, and thick descriptions during a deductive and inductive coding process. The results of this study indicated six themes emerging from the data: how teachers plan their units, training required, flexibility of curriculum, student-centered instructional strategies, maintaining a learner-centered focus, and limitations to implementation. The findings of this study could help educators improve their implementation of the inquiry-based learning component of the IBPYP and aid administrators in evaluating the school schedule and teacher training. Recommendations include studies focused on how teachers implement inquiry-based learning and administrators' role related to implementation, which could create positive social change with future educators meeting the learning outcomes reported in past studies about the IBPYP.

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Dedication

This page is dedicated to my partner, Joe Greenbeck, who believed in me and encouraged me to pursue this degree, and who tirelessly took care of every aspect of our adult lives so I could focus on achieving this degree while working full time. It is also dedicated to my amazing support network of friends, who have cheered me on from day one, encouraged me to keep going during the last half, and understood the missed social outings. They have been there for me through surprise coffee deliveries, impromptu glasses of wine despite not having showered, and continuous cheerleading.

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For anyone whom I have not mentioned, please know I appreciate you for your contributions to my journey, and if your name was not mentioned, it is because I ran out of room for the massive amount of amazing, inspirational persons who have guided, supported, encouraged, and assisted me in completing this goal. I am extremely appreciative of all of you. Thank you!

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Chapter 1: Introduction to the Study

Introduction

Academic interest in the International Baccalaureate (IB) programs is growing internationally (Ayyildiz & Uzumcu, 2016; Dickson et al., 2018; Steffen & Bueno-Villaverde, 2018). As of September 3, 2019, there were 1,782 International Baccalaureate Primary Years Program (IBPYP) schools in 109 countries worldwide (International Baccalaureate Organization [IBO], 2021). The IBO (2019b) reported that it was designed to develop independent and lifelong learners, and that the IBPYP curriculum was specifically designed to enable learners to construct their understandings through a transdisciplinary framework and inquiry-based learning, a key component of the IBPYP. The IBPYP has been found to develop inquiry-based thinking and learning (Savage & Drake, 2017) that requires teacher training to develop inquiry-based learning that challenges students to think critically from a global perspective (Lau et al., 2018). That inquiry mentality has been found to increase students' science skills after implementation of the IBPYP (Tugluk, 2020) and develop students' confidence levels regardless of age or gender in Grade 3, 4, and 5 IBPYP classrooms (Lau et al., 2018).

Research has focused on the most popular reasons that schools implement the full IB continuum (Diploma Program [IBDP], Middle Years Program [IBMYP], and IBPYP): its pedagogy, holistic approach, philosophy, global citizenship, academic rigor, and interdisciplinary teaching (Dickson et al., 2018; Kadıoğlu & Erişen, 2016; Wright et al., 2016). The few studies that have focused on the IBPYP have been concerned with implementation of the transdisciplinary framework of the IBPYP (Gurkan, 2021; Savage

& Drake, 2017), student and school system outcomes (Dix & Sniedze-Gregory, 2020; Lau et al., 2018), problems related to implementing more than one IB program within a school system (Walker & Lee, 2018), strong implementation and school climate (Boal & Nakamoto, 2020; Steffen & Bueno-Villaverde, 2018), challenges transitioning from a traditional school model to an IBPYP model (Lochmiller et al., 2016), and a conflict between implementation of the philosophy of the IBPYP being found easy by Steffen and Bueno-Villaverde (2018), yet Savage and Drake (2017) reported that the most critical comments concerning the IBPYP centered around poor implementation. Due to growth in the popularity of this program, understanding teachers' perspectives about their implementation of the core component, inquiry-based learning, could ensure that students continue to experience the positive outcomes reported in past studies.

The potential social implications of this study are that the findings of this study might add to the existing body of research on the IBPYP and specifically teachers' perspectives about implementing inquiry-based learning within the IBPYP. Researchers have indicated a lack of studies examining the IBPYP program with a specific need to investigate the implementation of the IBPYP's inquiry-based learning (Ayyildiz & Uzumcu, 2016; La Porte, 2016; Lau et al., 2018; Lochmiller et al., 2016; Mutammimah et al., 2019). The findings could lead to an understanding of the struggles, best practices, and pedagogical training needed to implement inquiry-based learning within the IBPYP and inform teacher training within the private international school setting.

In this chapter, I include the background related to the topic of study; identify the gaps in literature and need for this study based on a current problem; and explain the

purpose, intent, and decision to focus on this specific aspect of the research problem. This chapter also includes an outline of the nature of the study and conceptual framework, along with key definitions and assumptions believed to be true, but not proven. I conclude with the scope, limitations, and significance of the study.

Background

One of the growing curriculum trends in international education programs for primary school students ages 3–12 is the implementation of inquiry-based learning. Inquiry-based learning is central to the IBPYP (IBO, 2019b) used in primary schools (Mutammimah et al., 2019; Van Uum et al., 2017). The IBO (2019d) reported all IB programs' teaching methods are based on inquiry. The IBO (2020) defined inquiry-based learning as central to a student-centered learning process. Further, the IBO (2020) characterized inquiry-based learning as student-centered, with educators acting as guides and facilitators of learning through encouraging inquiry and collaboration among students, scaffolding learning from open inquiry to guided inquiry, and actively inquiring about their practice and how to support student interests and learning needs to cocreate the curriculum together. For this study, implementation of inquiry-based learning is defined as teachers actively creating teaching and learning plans with students actively engaged in that process (Brown, 2018; Mutammimah et al., 2019). Inquiry-based learning requires that students have ownership of the topic, presentation format, and questions they are asking and problems they are solving (Brown, 2018; Edwards, 2003; Harris, 2017). Teachers support students in this process through guidance and scaffolding (Hitt & Smith, 2017) to expand students' skill sets throughout the stages of inquiry (Harris,

2017; Van Uum et al., 2016). Implementation of inquiry-based learning within the IBPYP has been found to bring positive effects for students and teachers (Mutammimah et al., 2019). However, Gurkan (2021) found that teachers implementing the transdisciplinary curriculum struggled to find inquiry subjects related to IBPYP main ideas and to write age-appropriate lines of inquiry and thinking for students when implementing inquiry-based learning within the IBPYP. Lau et al. (2018) found that schools that implemented the IBPYP did so school-wide, and teachers attended training to develop implementation skills.

The IBPYP inquiry-based learning was inspired by Malaguzzi's Reggio Emilia approach (REA; Malaguzzi, 1993), a unique conceptual framework the combines the seminal works of Dewey, Vygotsky, Bruner, Piaget, and Bandura (Brown, 2018; Elliott, 2005; Gandini, 1993), which Morrissey et al. (2014) found to be congruent with the philosophy of the IBPYP. Lochmiller et al. (2016) found that teachers need professional support throughout transitioning from traditional teaching methods to the IBPYP philosophy. In agreement, Savage and Drake (2017) found that criticism of the IBPYP centered around poor implementation of the IBPYP and a need for teacher training. Walker and Lee (2018) agreed that training was necessary to bridge the gaps between all three IB programs; they found professional connectors or linkages that provided a bridge between the skills, knowledge, and capacities required to make the programs work, and the structure and effectiveness of professional learning opportunities provided. Steffen and Bueno-Villaverde (2018) found the IB philosophy and IBPYP infrastructures were easy to implement, but the written and/or planned assessment curriculum was considered

difficult. Gurkan's (2021) research expanded upon this and found that IBPYP had to be holistic and is the stage where unit concept, skill, action, and attitude elements are achieved. Each of these studies above focused on aspects of implementing the IBPYP, but only one focused specifically on inquiry-based learning with a focus on the benefits of implementing inquiry-based learning within the IBPYP (Mutammimah et al., 2019).

Despite research stating that inquiry-based learning and teaching as inquiry can improve learners' achievement and outcomes (Alameddine & Ahwal, 2016; Buabeng & Akuamoah-Boateng, 2019; Mutammimah et al., 2019), the challenges, solutions, and implementation of inquiry-based learning within the IBPYP have not been fully investigated (Ayyildiz & Uzumcu, 2016; Lochmiller et al., 2016; Mutammimah et al., 2019). Lau et al. (2018) stated that there have been few studies that have examined the value of the IBPYP in supporting education at the primary level. Lochmiller et al. (2016) and Mutammimah et al. (2019) stated that there is a lack of studies that have examined the implementation of the IBPYP's inquiry-based learning. Ayyıldız and Uzumcu (2016) reported further evidence of a gap in the literature and stated that there are few studies on the international IBPYP and fewer focusing on the implementation of inquiry-based learning within the IBPYP. This study needed to be conducted from the perspectives of primary international IBPYP teachers to aid in defining supports that primary international educators need to generate the learning achievement outcomes reported in past studies.

Problem Statement

The IB program is an international educational program designed to develop international mindedness, critical thinking, and lifelong learning skills consisting of four different programs: the primary years program (kindergarten–Grade 5), middle years program (Grades 6–10), diploma program (Grades 11–12), and career-related program (Grades 11–12; IBO, 2019d, 2019e, 2019f, 2019g, 2019h). The problem is that there is a lack of understanding of primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP (Mutammimah et al., 2019). The IBPYP is being used more frequently in international schools and taught using inquiry-based learning (Ayyildiz, & Uzumcu, 2016; Dickson et al., 2018; IBO, 2019b; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018). The IBO (2020) reported that between 2012 and 2017, the number of IBPYP schools worldwide increased by 479 schools, from 989 to 1,468, and programs offered worldwide grew by 39.9%. The IBO (2020) also reported that as of September 2019, the number of IB programs being offered worldwide was 6,812.

According to La Porte (2016), future IBPYP qualitative studies on instructional strategies are needed to better understand the complexity of the IBPYP around the world. A core component of the IBPYP model is the use of inquiry-based learning (IBO, 2019b). The focus of this study was on the perspectives that primary international teachers have about their implementation of inquiry-based learning using the IBPYP instructional practices. While research has demonstrated that the IBPYP can prepare students for

secondary education, not all teachers implement inquiry-based learning in the same way (Köksal & Southerland, 2018).

This study was needed to fill this gap in the literature as identified by Ledger (2017), with the IBPYP being the least researched of the IB programs. Additionally, this study needed to be conducted to add to the knowledge base of understanding in the implementation of inquiry-based learning within the IBPYP, including the challenges and solutions in implementation from the perspective of international educators (Ayyildiz & Uzumcu, 2016; Lochmiller et al., 2016; Mutammimah et al., 2019; Savage & Drake, 2017). Lastly, this study needed to be conducted to explain what types of supports and training primary international teachers perceive they need to implement the inquiry-based learning component of the IBPYP philosophy (Lochmiller et al., 2016).

Purpose of the Study

The purpose of this basic qualitative study was to explore the perspectives of primary international teachers in an urban environment about their implementation of inquiry-based learning within the IBPYP. I conducted this study applying the qualitative paradigm with a focus on its disciplinary roots in constructionism, phenomenology, epistemologically social constructivism, and interpretation (Patton, 2015). This study provides information about the perspectives that primary international teachers have about their implementation of IBPYP inquiry-based learning in the private international school setting located in an urban environment within the IB Africa, Europe, and Middle East (IBAEM) region.

Research Question

Research Question—Qualitative: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

Conceptual Framework for the Study

Morrissey et al. (2014) found that the IBPYP was inspired by Malaguzzi's REA—a conceptual framework developed through the use of multiple constructivists' learning theories, where learning is documented and observed to create a narrative of each individual's learning (Brown, 2018; Edwards, 2003; Malaguzzi, 1993). The REA (Gandini, 1993; Malaguzzi, 1993) is a conceptual framework and educational philosophy that employs Vygotsky's cognitive development theories concerned with aspects of thinking, understanding, and construction of thought processes (Theus, 1968); Piaget's cognitive education and development theories of learning being a constructive process (Gould & Howson, 2019); Dewey's theory of democracy in education, which builds on the foundation of an individual's past experiences (Dewey, 1903; Elliott, 2005); Bruner's curriculum theory of understanding a discipline's structure as enabling any student to understand how a discipline works (Elliott, 2005); and Bandura's social cognitive model, in which he suggested that the learner will benefit from models in the environment, such as interacting (Bandura et al., 1963). Interview questions were aligned with the REA (Malaguzzi, 1993) and enabled me to explore from the teachers' perspectives about their implementation of inquiry-based learning within the IBPYP.

Nature of the Study

This basic qualitative study (Ravitch & Carl, 2016) was conducted using a researcher-designed interview protocol in which data were collected through video software, a researcher-designed interview protocol, and a reflexive journal. Eight to 11 participants were interviewed using semistructured interview questions to understand their perspectives about their implementation of inquiry-based learning within the IBPYP. Participants were recruited through purposive sampling from my primary location of one IBPYP private international school with two campuses that agreed to allow its teachers to participate in this research and exists in the IBAEM region.

Definitions

The following definitions are for terms that have multiple meanings and were operationalized for use within this study.

IB's holistic approach: The IB holistic approach to teaching and learning requires that the education system take the whole person into account; moral and ethical growth work together to aid in the development of critical and analytical thinking skills to develop students' values, academic skills, and disciplinary knowledge (Dickson et al., 2018; Wright et al. 2016).

Inquiry-based learning: Inquiry-based learning is defined as teachers actively creating teaching and learning plans with students actively engaged in that process (Brown, 2018; Mutammimah et al., 2019). Inquiry-based learning is student learning that centers on students taking ownership of the topic, presentation format, and questions they are asking and problems they are solving. Teachers act as guides and facilitators of

learning through encouraging inquiry and collaboration among students, with the teacher building in supports through scaffolding to expand students' skill sets at each phase of inquiry (Harris, 2017; Hitt & Smith, 2017; IBO, 2020). Inquiry-based learning also requires that teachers reflectively inquire about their practices to best support their students (IBO, 2020) and can be broken down into seven phases: (a) introduction, (b) exploration, (c) designing the investigation, (d) conducting the investigation, (e) conclusion, (f) presentation/communication, and (g) deepening/broadening (Van Uum et al., 2016).

Learner-centered instructional strategies: Learner-centered instructional strategies involve an environment where students actively participate in their own learning, through self-monitoring and other metacognitive skills scaffolded by the teacher throughout the curriculum for most students (Bakar et al., 2013). Learner-centered instructional strategies use formative assessment to inform the student of the learning process, not compliance, and are used to inform students about how they learn (Boyadzhieva, 2016; Meškauskienė & Guoba, 2016; Schweisfurth, 2015). Learner-centered strategies provide formative assessment that enables students to assess their strengths and weaknesses through reflection as self-assessment and have the ability to demonstrate growth over time in order to motivate them to seek progress and maintain self-esteem (Boyadzhieva, 2016; Meškauskienė & Guoba, 2016; Schweisfurth, 2015). The self-management strategies involved in learner-centered instruction are teacher language usage and implementation of learner-centered practices such as (a) questioning,

(b) incorporating student participation through providing opportunities to ask questions, and (c) providing opportunities for students to teach their peers (Boyadzhieva, 2016).

Assumptions

My assumptions for this study were that primary international teachers' perspectives while implementing inquiry-based learning within the IBPYP would influence their development of pedagogy and units of inquiry. This could lead to a better understanding about primary international teachers' perspectives on their implementation of inquiry-based learning within the IBPYP. I assumed that participants would answer the interview questions honestly, based on their individual perspectives. I assumed that participants would be able to identify what inquiry-based learning is and be able to identify what implementation of inquiry-based learning is from their perspectives while implementing the IBPYP. I assumed that the use of semistructured interviews was the best method for collecting data because it enabled me to gain thick descriptions of participants' experiences.

Scope and Delimitations

The scope of this basic qualitative study was based on a specific population. I studied primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP in one school system located in the underresearched IBAEM region. I used purposeful sampling of IBPYP teachers who teach Grades PreK through 5 in one private accredited IBPYP international school that has two campuses in an urban setting within the IBAEM region. I chose this setting and population because the school system is in the IBAEM region, a region that is

underresearched. I did not gain enough participants from the 20 IBPYP teachers to reach saturation from these two campuses owned by one school; therefore, I recruited from the school I work at, which is a second urban international IBPYP school system with 15 teachers who work across two campuses within the IBAEM region. The results of this are transferable, specifically to primary international IBPYP teachers in urban IBAEM regions.

Limitations

I sought to understand the perspectives of primary international teachers on their implementation of inquiry-based learning. I cannot guarantee that the phenomenon under investigation will be stable and reliable because it is based on the participants' individual perspectives and experiences. To combat the instability and unreliability of responses being based on the participants' individual perspectives the results of the study were interpreted using consistent measures in line with my data collection methods and were triangulated through thick descriptions and my researcher journal. A potential barrier to collecting my primary data was that I did not have a relationship with the primary group of participants I recruited from. I combatted this by communicating the problem, purpose, and potential social implications of this study in relation to primary international teachers. I have personal biases that could have influenced the study outcomes due to my experiences with the IB program as a whole. First, I taught IBPYP physical education for 1 year to Grades PreK through 4 at a private international school in Japan. I also enjoyed the inquiry-based teaching component and collaborating with IBPYP teachers to develop integrated units of inquiry. Second, I am an IBDP instructor and science teacher who

believes that inquiry-based teaching practices lead to higher student achievement and require continuous professional development. To combat these biases, I recorded participants' responses via audio and shared all transcripts of interviews with participants for transcript review to ensure I interpreted the participants' perspectives in their own words, without the influence of my interpretation.

Significance

This study adds to the existing body of research on the primary years program and specifically primary international teachers' perspectives on their implementation of inquiry-based learning within the IBPYP. The results of this research may assist educational leaders in creating recommendations concerning what instructional methods could be added or removed from the IBPYP to improve student learning outcomes. Because a growing number of students are experiencing the IBPYP in urban private international schools, exploring primary international teachers' perspectives about their implementation of inquiry-based learning may lead to potential changes in IBPYP instruction and ultimately better prepare students for the next stage in their educational journey. Because IBPYP is an international program, this research is transferable to international schools implementing the IBPYP's inquiry-based learning within their school system. The results of this study have the potential to create social change when leaders and researchers use the study results to enhance or expand inquiry-based learning practices in the IBPYP.

Summary

The purpose of this basic qualitative study was to explore the perspectives that primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP, an IB program, which the IBO (2017, 2021) and Steffen and Bueno-Villaverde (2018) have indicated is growing internationally. The majority of research has focused on reasons to implement the IBDP, IBMYP, and IBPYP (Dickson et al., 2018; Kadıoğlu & Erişen, 2016; Wright et al., 2016), with researchers identifying a specific need to investigate the implementation of the IBPYP's inquiry-based learning (Ayyildiz & Uzumcu, 2016; La Porte, 2016; Lau et al., 2018; Lochmiller et al., 2016; Mutammimah et al., 2019). The data collection process involved a purposeful sampling strategy, semistructured interviews, use of a reflexive research journal, audit trail, and transcript review to ensure credibility, reliability, validity, and transferability. Eleven participants were recruited from a private international school with two campuses that implement the IBPYP, which is located in an urban environment in the IBAEM region. The research question, problem, and purpose statement were aligned with basic qualitative research using the REA (Malaguzzi, 1993) as the conceptual framework, which was developed through the use of multiple constructivists' learning theories, where learning is documented and observed to create a narrative of each individual's learning (Brown, 2018; Edwards, 2003; Malaguzzi, 1993).

Chapter 2: Literature Review

Introduction

The problem is that there is a lack of understanding about primary international teachers in the international private school setting implementing inquiry-based learning within the IBPYP (Mutammimah et al., 2019). The purpose of this basic qualitative study was to explore the perspectives of primary international teachers in an urban environment about their implementation of inquiry-based learning within the IBPYP. Academic interest in IB programs is growing internationally (Ayyildiz & Uzumcu, 2016; Dickson et al., 2018; Steffen & Bueno-Villaverde, 2018). Several researchers (Dickson et al., 2018; Kadıoğlu & Erişen, 2016; Wright et al., 2016) have reported that the most popular reasons that schools implement the IB program are its pedagogy, holistic approach, philosophy, global citizenship, academic rigor, and interdisciplinary teaching. Yet Ayyildiz and Uzumcu (2016), La Porte (2016), Lau et al. (2018), Lochmiller et al. (2016), and Mutammimah et al. (2019) indicated that there are a lack of studies conducted that have examined the IBPYP and very few conducted on the implementation of inquiry-based learning, a core component of the IBPYP model (IBO, 2019b) and one that Gurkan (2021) found must be holistic and balanced with inquiry items written according to learners' interest, curiosity, cognitive ability, and lived experiences. Implementation of the IBPYP's inquiry-based learning can develop learners who are independent and lifelong learners; therefore, there may be potential benefits in exploring primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP.

This chapter includes a review of the conceptual framework, its history, and its philosophy. Additionally, it contains a review of the current literature on the implementation of the IBPYP. This chapter also includes the literature search strategy and an investigation of the literature on curriculum theory and development; inquiry-based instructional implementation, strategies, and methods; and constructivist learning theory supported by the REA (Gandini, 1993; Malaguzzi, 1993).

Literature Search Strategy

Development of this literature review consisted of an electronic search in Walden University's library, in the databases Educational Sciences: Theory & Practice, Science Direct, SAGE Journals, EBSCOhost, ERIC, ProQuest, Taylor & Francis Online, Zenodo, and Directory of Open Access Journals, as well as on the IBO research site, the North American Reggio Emilia Alliance bibliography of free resources, and Google Scholar multidatabase search. The searches were confined to publications from the past 5 years for current literature and could be as old as 100 years for seminal works. Chain citing was used to determine original research supporting results within present-day studies.

The key search terms used to conduct the study included *Primary Years Programme (PYP)*, *international education*, *national program*, *International Baccalaureate Diploma Program*, *critical thinking*, *inquiry*, *teaching method*, *cognitive attributes*, *International Baccalaureate Learner Profile*, *noncognitive attributes*, *international schools Middle Year Programme (MYP)*, *International General Certificate of Secondary Education (IGCSE)*, *Diploma Programme (DP)*, *mathematics education*, *science education*, *curriculum planning*, *IB*, *curriculum studies*, *curriculum theory*,

curriculum integration, identity, international education, experiential learning, Creativity, Activity, Service (CAS), administrator opinions, middle schools, curriculum change, student perceptions, transdisciplinary instruction, Turkish National Curriculum, Aero Standards, Ontario Standards, science literacy, math ability, writing ability, SEENA mathematics assessment, Cambridge checkpoints in science, math, and writing, Reggio Emilia approach, secondary education, primary education, academic readiness, inquiry-based learning, Atelier, constructivist curriculum, developmentally appropriate, emergent curriculum, environment, hundred languages, Malaguzzi philosophy, portfolio assessment, and *preschool.*

While the implementation of inquiry-based learning within the IBPYP was the focus of this study, exhaustive searches indicated that much of the literature available for review centered on international curricula that prepared students for college and university, such as the IBDP and IGCSE. To explore more fully what is known about the implementation of inquiry-based instructional strategies of primary international teachers, I also reviewed some of the studies involving IGCSE and IBDP instructional strategies and outcomes. To explore empirical data related to inquiry-based instructional strategies, I reviewed some studies involving subject-based outcomes, student development and learning outcomes, schoolwide systems outcomes, and teacher professional development outcomes. The review that follows contains the literature available for review as determined by literature searchers conducted in collaboration with the Walden University librarian, who assisted me in determining the scope of literature available for review. Theorists and educational philosophy were instrumental in determining the focus of this

review. The educational philosophies that I searched were the REA and inquiry-based constructivist philosophy. The current literature themes include curriculum development and implementation, constructivist learning theory, inquiry-based instructional implementation, and strategies and methods. Fifty-eight articles, three books, 18 websites, one dissertation, and four curriculum programs are a part of the review of literature for this study.

Conceptual Framework

The conceptual framework for this study was the REA (Malaguzzi, 1993) to instruction, which has roots in Piaget's (1961) constructivist learning theory, Vygotsky's cognitive development theory (Al-Shammari et al., 2019; Brown, 2018; Gandini, 1993), Bruner's (1960) curriculum theory, Dewey's (1903) theory of democracy in education (Lindsay, 2015), and Bandura's (1997) social cognitive model (Gandini, 1993; Malaguzzi, 1993). The IBPYP was developed using the REA (Brown, 2018), which is a pedagogical framework based on a constructivist educational philosophy that supports emergent curriculum developed over time using a reflective, inquiry-based approach based on the constructivist framework (Brown, 2018). The constructivist framework within teaching is an approach that focuses on the internal factors that affect learning in order to make learning meaningful: the learner's prior knowledge, ability to remember and process information, and motivation to learn (Qarareh, 2016).

The Reggio Emilia Approach

The REA to teaching is an approach whereby teachers take the role of colearners and enable children to take control of their learning through projects (Brown, 2018;

Elliott, 2005; Malaguzzi, 1993) through the support of teachers (Edwards, 2003; Malaguzzi, 1993), supporting the IBO (2020f) taught curriculum approach of students engaging actively in their own learning (Lau et al., 2018). Elliott (2005) stated that the guiding principles for the REA are the following:

- the child as protagonist, collaborator, and communicator;
- the teacher as a partner, a guide, a nurturer, and a researcher;
- the parent as a partner too;
- the environment becomes a third teacher; and
- documentation is a form of communication. (p. 1071)

Morrissey et al. (2014) found that the REA was the inspiration for the IBPYP through its philosophy of "learning made visual" and use of documentation as essential to both teaching and learning.

Documentation is a key method of assessing student learning and understanding within the REA (Brown, 2018; Edwards, 2003; Elliott, 2005; Malaguzzi, 1993) and is done through active teacher observation via note taking, photographs, and tape recordings of group discussions and play (Blagojevich & Garthwait, 2001). Assessment in the IBPYP is similar to REA assessment and is done using documentation through the use of portfolio-type assessments to represent student learning along the way (Brown, 2018; IBO, 2020). Assessment within the REA and the IBPYP relies on qualitative data analysis and telling a story of the learning that took place as a narrative of the learning as reflected by the collaboration of learning between the child and the teacher.

The IBO (2020) and Malaguzzi (1993) stated that inquiry could take place in many locations with open-ended time frames and a flexible process of inquiry, as well as through teachers' use of inquiry to record and help students learn through their own interests, not a prescribed set of standards, much like Edwards (2003) described inquiry-based learning in the REA. Malaguzzi stated that children construct their knowledge through self-learning and colearning, which Brown (2018) further supported by comparing the REA to the ideas of constructivist learning where children create and construct their own learning based upon their lived experiences and what others experienced around them. Edwards further described Malaguzzi as a social constructivist who created the REA with a framework designed in a social-constructivist manner.

The founder of the REA, Malaguzzi (1993), defined the key concepts of his theory and philosophy of education as one where children learn by interactions. Malaguzzi stated that children interact with their environment, actively transforming their relationship with the world and with other people, which he describes as "a need, a desire, a vital necessity that each child carries within" (p. 11). Furthermore, Malaguzzi explained that each child seeks out positive interactions with adults and other children. Children do this in small groups where they learn to negotiate and master dynamic communication; these interactions minimize negative results and enable children to grow and learn in a variety of ways, enabling abstraction and recombination of ideas. Malaguzzi proposed that children construct knowledge through self-learning and colearning through the support of interactive experiences that are scaffolded through adults to produce both cognitive dissonance and cognitive growth along with social

development of intelligence and skills for collaboration and problem solving. The theories that influenced Malaguzzi provide more clarity as to the ideas and principles within the REA framework.

Theories That Influenced the Reggio Emilia Approach

Within the REA, Vygotsky and Piaget's cognitive education and development theories and Dewey's (1903) theory of democracy in education work together to explain how people learn and understand the world around them. Vygotsky's cognitive development theories were concerned with the aspect of thinking to understand and understanding to arrive at transformation and construction of all thought processes (Theus, 1968). Piaget (1961) further proposed that learning was a constructive process (Gould & Howson, 2019) of a logical structure that required a combination of experience and coordinating activity of the subject, consisting of knowing and transformation through abstractions from the actions and their coordinating physical experiences. Piaget's proposal was a further development of Dewey's (1903) proposition that education builds on the foundation of an individual's past experiences (Elliott, 2005). These theorists' ideas transfer to the REA in Malaguzzi's (1993) theory of how children learn and understand the world around them through play. Additional theorists who influenced Malaguzzi added to how students learn in the REA.

Curriculum Theory and Social Cognitive Model: How Children Learn

Bruner's (1960) curriculum theory combined with Bandura's (1997) social cognitive model influenced the development of the emergent constructivist curriculum design of the REA. Bruner's curriculum theory indicates that understanding a discipline's

structure enables any student to understand how a discipline works and that curriculum should be taught recursively (Bruner, 2006; Elliott, 2005). Bruner's theory influenced Malaguzzi in his argument for children constructing their understanding through the scaffolding of adults. Furthermore, Bandura's social cognitive model completes the constructivist theories comprised within the REA, where Bandura suggested that the learner will benefit from models in the environment, such as interacting (Bandura et al., 1963). The works of Vygotsky, Piaget, Dewey, Bruner, and Bandura together comprise the backbone of Malaguzzi's REA, making it a unique conceptual framework and educational philosophy.

Benefits of Using the Reggio Emilia Approach as the Conceptual Framework

The unique conceptual framework of the REA provided a pedagogical framework for exploring primary international teachers' perspectives about implementing inquiry-based learning within the IBPYP (Brown, 2018). Brown described the REA as involving no set curricula, manual, or policies, but rather allowing learning to emerge based on the interests and desires of teachers and students. McNally and Slutsky (2017) described the REA as one where teachers participate in developing the learning environment to teach through questioning, and one where teachers also learn from the children, community, and experiences. Moss (2018) and McNally and Slutsky reported that the REA makes learning visible, with the process of documentation regarded as an essential component of both teaching and learning. Edwards (2003) further stated that REA is an evolving experience where teachers see themselves as provocation and reference points and view children as the authors of their own learning. Malaguzzi (1993) stated that REA

education was based on relationships with people, society, and the environment where teachers follow the children's interests and foster emergent learning while children record and manipulate their ideas (Edwards, 2003).

Elliott (2005) found that the REA was based on children exploring, discovering, constructing, communicating, and interacting to author their own learning. Each of these elements was present in Brown's (2018) findings and built the conceptual framework of using the environment, relationships of children with children and children with adults, real-life learning, documentation and observation, reflection, and qualitative assessment. These various authors each describe the conceptual framework of the REA in a way that is progressive and steeped within a qualitative framework where documentation and observation help to write the narrative of each individual's learning experience. Using the REA as my conceptual framework enabled me to develop interview questions (see Appendix A) that aligned with the REA and allowed me to explore the perspectives of primary international teachers regarding their implementation of inquiry-based learning (see Appendix B).

Malaguzzi's (1993) unique conceptual framework and educational philosophy indicate that learning is coconstructed between adults and children through interactions with people and the environment, and takes place through making learning meaningful, self-learning, colearning, and learning made visible (Brown, 2018; Gandini, 1993; Malaguzzi, 1993). The REA is based on the constructivist framework that focuses on internal factors that affect learning in order to make learning meaningful (learner's prior knowledge, ability to remember and process information, and motivation to learn) and

has been identified as its own conceptual framework (Gandini, 1993; Malaguzzi, 1993). I used each component of the REA to develop my interview questions (see Appendix A and Appendix B). The first component that I used was making learning meaningful through learners' prior knowledge. The second component that I used was the ability to remember and process information. The third component that I used was self-learning through using the environment and interactions. The fourth component that I used was the use of colearning through using the environment and interactions. Then I used the component of learning made visible through documentation, observation, and reflection. Lastly, I used the component of qualitative assessment derived to gain insight into the perspectives of the participants.

Literature Review Related to Key Variables and Concepts

This section focuses on research related to the IB curriculum approach and particularly on the IBPYP; constructivist approaches to curriculum; inquiry-based learning models and their implementation, strengths, and methods; curriculum development and implementation; and implementation of the IBPYP in the IBAEM region.

Research on the International Baccalaureate Curriculum Approach and Particularly the International Baccalaureate Primary Years Program

The philosophy of the IB, seen in every IB program, is one that has taken a holistic approach to teaching and learning within the context of the student. Wright et al. (2016) defined the holistic approach of the IB as involving a view of the whole person, where moral and ethical growth work together to aid in the development of critical and

analytical thinking skills. Furthermore, Dickson et al. (2018) stated that the IBO's philosophy develops students' values, academic skills, and disciplinary knowledge. These authors' perspectives align with the mission that the IBO reports of, wanting to create a world that is better through education by teaching to the whole person using student-centered instructional strategies, not simply memorizing facts, and focusing on teacher-centered instructional strategies, in order to think in a globalized way. The IBO aims to develop an intrinsic desire to learn and create a more peaceful world by combining the student-centered instructional approaches to teaching and approaches to learning (ATL) encapsulated within the IB philosophy with the IB Learner Profile (IBLP).

In 2006, the IBO identified a series of Learner Profiles to represent the characteristics of students in their ability to enact the mission of the IBO to make the world a better place through more than academic accomplishments (IBO, 2017). The profile aims to develop learners beyond academic skills holistically into the following 10 specifics according to the IBO (2019h):

- Inquirers—We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.
- Knowledgeable—We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

- Thinkers—We use critical thinking skills to analyze and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.
- Communicators—We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.
- Principled—We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.
- Open-minded—We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.
- Caring—We show empathy, compassion, and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.
- Risk takers—We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.
- Balanced—We understand the importance of balancing different aspects of our lives— intellectual, physical, and emotional— to achieve well-being for

ourselves and others. We recognize our interdependence with other people and with the world in which we live.

- Reflective—We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development. (p. 5)

Walker et al. (2016) ascertained that the IBLP is a common language the bridges the gap between all of the IBO programs to describe the intended holistic learning outcomes of the IBO program. Additionally, Sperandio and Kong (2018) found the LP generated "a positive school attitude and climate" p. 86. The IBO built in further support of holistic learning through their ATLs. All five IB programs contain the same 6 approaches to teaching and 5 ATLs, implemented at age-appropriate levels, in order to develop active, compassionate, and lifelong learners (IBO, 2019d).

Dickson et al. (2018) reported that teachers and school leaders found the IBO programs positively influenced changes to teaching in learning and students reported a range of benefits related to academic, cognitive, and affective outcomes. Sperandio and Kong (2018) found that teachers perceived the adoption of the IBPYP "improved their pedagogical knowledge and practices, teacher involvement in developing the programme curriculum, ongoing teacher learning through reflection and teacher collaboration" p. 86. Additionally, Sperandio and Kong found that parents felt more knowledgeable about the educational program and could use IBPYP language with their children at home. The approaches to teaching in the IBO are kept broad and flexible, engaging in a Deweyan approach, employing democracy in education that enables the teacher to implement

teaching strategies of their choosing reflecting the needs of their particular context and the needs of their students (Dewey, 1903; IBO, 2019d). The IBO (2019d) reports:

> In all IB programs, teaching is
>
> - Based on inquiry. A strong emphasis is placed on students finding their own information and constructing their own understandings.
> - Focused on conceptual understanding. Concepts are explored in order to both deepen disciplinary understanding and to help students make connections and transfer learning to new contexts.
> - Developed in local and global contexts. Teaching uses real-life contexts and examples, and students are encouraged to process new information by connecting it to their own experiences and to the world around them.
> - Focused on effective teamwork and collaboration. This includes promoting teamwork and collaboration between students, but also refers to the collaborative relationship between teachers and students.
> - Designed to remove barriers to learning. Teaching is inclusive and values diversity. It affirms students' identities and aims to create learning opportunities that enable every student to develop and pursue appropriate personal goals.
> - Informed by assessment. Assessment plays a crucial role in supporting, as well as measuring, learning. This approach also recognizes the crucial role of providing students with effective feedback. (p.6)

Each of these six approaches is a hybrid of student-centered learning and learner-centered instructional strategies, that researchers have found to be effective approaches to teaching. Henriksen et al. (2016) contended that curriculum designed by educators in the classroom with the students' learning needs as the central focus, and in the research field in conjunction with educational and community stakeholders to benefit society and develop students capable of problem solving, and creativity lead to discovery. Which, Uzum and Pesen (2018) found further evidence that learner-centered instructional strategies led to higher academic achievement among students because teachers paid attention to individual learning styles and characteristics of students. Tal and Tsaushu (2017) stated that student-centered instructional strategies guided by formative assessment improve the quality of learning, which Babincakova et al. (2020) agreed and found that formative assessment stimulates higher-order cognitive skills like application and analysis, and student participants found formative assessment helpful to aid in identifying gaps in knowledge and improving their school results. Additionally, Meškauskienė and Guoba (2016) stated that formative assessment should be combined with students self-assessing themselves throughout the learning process, so they are involved in their own evaluation through metacognition, which aligns with the IBO's (2019d) ATLs and emphasis on recognizing that students benefit by learning how to assess their own work and work of others.

The IBO (2019d) ATLs contain five interrelated, age-appropriate skills designed to produce learners who have self-efficacy, autonomy, self-agency, and possess a growth mindset. The IBO (2019d) states:

The same five categories of skills span all IB programs, with the skills then emphasized in developmentally appropriate ways within each program. The five categories are

- thinking skills, including areas such as critical thinking, creative thinking and ethical thinking
- research skills, including skills such as comparing, contrasting, validating and prioritizing information
- communication skills, including skills such as written and oral communication, effective listening, and formulating arguments
- social skills, including areas such as forming and maintaining positive relationships, listening skills, and conflict resolution
- self-management skills, including both organizational skills, such as managing time and tasks, and affective skills, such as managing state of mind and motivation. (p. 7)

The ATLs take a progressive approach to instruction, and assessment within the constructivist paradigm, in which Dewey, Piaget, and Vygotsky contend each learner constructs a subjective understanding of the world through experience (Al-Shammari et al., 2019; Dewey, 1903; Piaget, 1964; Vygotsky, 1962). The philosophy of the IBO approaches to teaching, and ATLs encapsulate many of the reasons that schools implement the IB, and it all began with the creation of the IBDP.

International Baccalaureate Diploma Program

According to Donahue (2016) the IBDP is perceived as able to develop students who are college and career ready, and the IBO (2018) found that students in the United States outperformed non-IBDP candidates both in university grades and rate of graduation. Completion of the IBDP involves students engaging in critical thinking, reflection, inquiry, and civic engagement to develop academically, personally, and socially. Sagun et al. (2016) found students who participated in the IBDP had better time-management and higher critical thinking skills when entering college and Kadıoğlu and Erişen (2016) found that the IBDP was aligned well with their school's existing college preparation program and when combined created college candidates who were more likely to graduate. Additionally, Hill (2018) found no statistically significant difference in university acceptance, graduation rates, and retention rates between IBDP graduates and students who chose to get an IB certificate rather than complete the diploma exams, indicating that taking part in the IBDP courses alone could be beneficial. In order to develop candidates with these attributes, Yagiz et al. (2016) found that teachers need to learn the requirements of the IBDP syllabi to understand where students are coming from and where they are headed. A core component of the IBDP that helps students develop academically and make globalized connections to empathy through service is the CAS program, which must be completed regardless of students completing the IBDP or the Career-related Program.

The CAS requirement ties together the academic, and holistic approach of the IBDP. The CAS component of the IBDP is based on the philosophy of experiential

learning and Academic Service Learning (Hatziconstantis & Kolympari, 2016). According to Belal (2017) the CAS program is perceived as the main way students interact with the diverse local community. Hayden and McIntosh's (2018) findings suggest that experiential learning about CAS shows that there is a potential for well-designed experiences to result in transformation and the development of new skills to prompt new understandings: drawing parallels between the social constructivist approaches to learning of Dewey and Vygotsky. The CAS component is an integral part of tying in a holistic and hands-on way of learning and utilizing service learning, a student-centered instructional method, which can be seen in the MYP.

Middle Years Program

The MYP has gained popularity over the years because it is perceived to generate learners who are global citizens and critical thinkers capable of entering into challenging academic high school programs during their last two years of high school. Implementation of the MYP has been gaining popularity in the Asia-Pacific region (Wright, et al., 2016). Wright et al. reported that the theoretical basis for adopting the MYP are the assessment, educational philosophy, pedagogy, and curriculum centered on communication, holistic learning, and intercultural understanding. Wright et al. also found globally, that the IB pedagogy, holistic approach, philosophy, and global citizenship were the most popular reasons to implement the MYP in the Asia-Pacific region because it is considered very marketable through the MYP Certificate and external validation of school-based assessments (Bunnell, 2020). Dulun et al. (2019) found that students felt more prepared and like they had obtained the skills necessary to complete

the IBDP upon completion of the IBMYP. Dickson (2019) found that despite having perspectives that the MYP "increased inquiry-based learning opportunities; exposure to holistic learning through development of academic and social skills; and a healthier balance between core and elective learning areas" (abstract) schools in Australia chose to discontinue implementation of the MYP. Even still, multiple researchers found that schools perceived the MYP to increase their status as a way to draw in more students and in some cases encourage families to place their children in public, rather than private school; with financial costs and excessive paperwork outweighing the educational benefits (Dickson, 2019; Monreal, 2016; Perry et al., 2018). Unlike the MYP, the IBPYP has very little research on why it is implemented, but instead has studies focusing on its outcomes.

Primary Years Program

The IBPYP has been found to generate inquiry-based thinking and higher academic outcomes. Steffen and Bueno-Villaverde (2018) found that the IBPYP is known for developing inquiry-based thinking and learning due to its transdisciplinary themes, that according to Savage and Drake (2017), are supported with a flexible framework that is transportable to different contexts and cultures. Lau et al. (2018) went on to explain that the IBPYP required teacher training to develop inquiry-based learning and to challenge students by encouraging critical thinking from a global perspective. Lau et al. also found that the IBPYP developed students' confidence levels with their peers regardless of age or gender in Grade 3, 4, and 5 IBPYP classrooms in the United States. Tugluk (2020) found the inquiry mentality of the IBPYP significantly increased students'

science skills after implementing the IBPYP, but not in comparison to students who did not experience the IBPYP. Despite the valuable information gathered in past studies, and Twigg's (2010) request that researchers need to "engage in more extensive research activity" p. 57 on teacher's practices, values, and beliefs for successful inquiry-based teaching in the IBPYP within other schools to focus on "generalizable data pertaining to influences promoting inquiry-based teaching-learning pedagogies" pg. 57 the IBPYP remains the least researched of the IB programs (Ledger, 2017) with most studies focusing on the outcomes of the IBDP (Lau et al., 2018).

Constructivist Approaches to Curriculum

Qarareh (2016) defined constructivist learning theory as a process in which the learner constructs new knowledge through rebuilding past understanding within the learner's cognitive system: this is done through experiences of the learner and prior knowledge. Additionally, Brown (2018) stated that the constructivist learning theory can be seen within the REA because it is a framework where children construct their own understanding of the world around them through lived experiences as well as the shared experiences of others. Elliott (2005) further agreed that children develop their understanding and learning from adults fostering relationships among children and with adults and that the learner's perspectives, and therefore understandings, came from teachers, their family, other children through play and discussion, and interacting with other adults and children in order to plan, explore, discover, communicate, and interact with their environment. In addition, McNally and Slutsky (2017) and Morrissey et al. (2014) found that in REA (Brown, 2018) teachers enable children to take control of their

learning through questioning and colearning, rather than posing solutions to problems for their learners, which is one of the five steps of the constructivist learning model (Qarareh, 2016). When applying Qarareh's definition of constructivist learning theory to the REA (Brown, 2018), there are clear connections of students constructing their own meaning, rather than being told what to learn and think, placing the child as the author of their own constructed education, and the teacher as the recorder of the qualitative and descriptive data to record the constructed understanding and development of knowledge in each child (Brown, 2018; Edwards, 2003; Elliott, 2005; McNally & Slutsky, 2017; Morrissey et al., 2014).

Inquiry-Based Models

Harris (2017) defined inquiry-based learning as learning in which students have ownership of the topic, presentation format, and the questions they are asking and problems they are solving. The IBO (2020) defined inquiry-based learning as students being central to the learning process, educators acting as guides and facilitators of learning through encouraging inquiry, and collaboration among students and teachers that is scaffolded from open inquiry to guided inquiry, with teachers actively inquiring about their practice and how to support student interests and learning needs, rather than administering a prescribed standards-based curriculum. Inquiry-based instruction can be categorized into Van Uum et al.'s (2016) seven phases: (a) introduction, (b) exploration, (c) designing the investigation, (d) conducting the investigation, (e) conclusion, (f) presentation/communication, and (g) deepening/broadening. Each component of inquiry is a skill needed to solve problems, organize data, and develop concepts in the real world

and each requires information-processing capabilities. Using inquiry-based instructional methods has been found to have positive effects for teachers and students (Mutammimah et al., 2019) and increase academic achievement and results (Alameddine & Ahwal, 2016), but students need to be supported adequately (Lazonder & Harmsen, 2016) and teachers require ongoing professional training (Buabeng & Akuamoah-Boateng, 2019). Support can be provided through guidance and scaffolding, which have been shown to be essential for inquiry-based learning (Hitt & Smith, 2017) to expand students' skill sets at each phase of inquiry (Harris, 2017) throughout implementation.

Implementation

According to Hitt and Smith (2017) inquiry-based instruction can be implemented using scaffolding from guided or structured inquiry into open inquiry (Van Uum et al., 2017). Hitt and Smith identified three major paradigms for inquiry-based learning: learning through discovery, authentic inquiry experiences, and constructivism, with constructivism aligning with the standards and practices of the IBO (IBO, 2014a). This requires an instructional approach Hitt and Smith defined as one that: probes students' prior knowledge, provides students with an unknown situational based question or a problem so they can construct their own mental models and explanations, engages students in thinking and discussing content, and involves students using authentic materials or equipment (IBO, 2020). Teachers can choose from a wide range of implementation strategies within inquiry-based learning (IBO, 2020), which may indicate that primary international teachers' perspectives of implementation of inquiry-based learning may vary while implementing inquiry-based learning within the IBPYP.

Strategies

Multiple researchers found that scaffolding, modeling, and guidance were essential to students accomplishing the task and learning from the activity (Harris, 2017; Hitt & Smith, 2017; Lazonder & Harmsen, 2016; Van Uum et al., 2017). Hitt and Smith proposed that scaffolding could be used as a guide for students' thinking to help them focus on the process of learning and the relevant information. Lazonder and Harmsen found that guidance had a significant positive effect on inquiry-based learning activities, performance success, and learning outcomes. While Harris, on the other hand, advised teachers to model inquiry at the beginning of the year with a gradual release of responsibility to students over time. Some examples of scaffolding and modeling throughout the inquiry process include: helping students learn how to find reliable information and provide proof to support their answers; which can be done through skill support in library, databases, website analysis, archives, presentation skills, and collaboration (Harris, 2017; IBO, 2020); and provide students with a simple prompt, extensive explanation, specific directions, or mini lesson at the start of inquiry (IBO, 2020; Lazonder & Harmsen, 2016). Lazonder and Harmsen stated that age and grade level have no bearing on the guidance provided, however the guidance provided should be based on learners' topical knowledge or familiarity with inquiry skills and the teacher to student ratio. Guidance can be modified and scaffolded through various methods to facilitate inquiry-based learning.

Methods

Scaffolding methods within inquiry-based learning range from open inquiry, guided inquiry, to structured inquiry (Hitt & Smith, 2017; IBO, 2020). An open inquiry lesson requires students emulate an investigation conducted by working specialists in the fields of investigation; they are responsible for designing the entire investigation from the research question or problem; data collection procedures and recording; and analyzing their research results; the teacher is merely a facilitator (Hitt & Smith, 2017; IBO, 2020; Van Uum et al., 2016). Guided inquiry lessons are scaffolded; the instructor provides the research question and students use this question to inform their data collection and analysis before, during, and after the investigation (Hitt & Smith, 2017; IBO, 2020). Structured inquiry begins with the instructor providing the problem or research question and the data collection procedures; with students responsible for analyzing the results (Hitt & Smith, 2017). Luddecke (2016) suggested that teachers implement the IBPYP by involving students in curriculum planning, which Moss (2018) reported teachers did through encouraging a democratic relationship between the community themselves, and through encouraging children to have a discourse, and challenge interpretations and perspectives: Gurkan (2021) found teachers "constantly develop, assess, and transform from a transdisciplinary curriculum into an inquiry-based teaching plan, before, during, and after the process" p. 179. No matter the method, Mutammimah et al. (2019) and the IBO (2020) assert that both teachers and students are active in teaching and learning: teachers are active and motivated in creating the teaching and learning plan; students are actively engaged in the teaching and learning process; making inquiry-based learning a

colearning experience for both teachers and students: supporting Malaguzzi's REA (Brown, 2018) to teaching.

Curriculum Development and Implementation

The IBPYP pedagogical philosophy is one of holistic constructivism, with the goals of "supporting students' efforts to construct meaning from the world around them" (IBO, 2020f, para.1). Constructivists, such as Dewey, Piaget, and Vygotsky, would define *constructivism* as learning in which each learner constructs a subjective understanding of the world through experience (Al-Shammari et al., 2019). The IBPYP curriculum was developed with a focus on six transdisciplinary themes taught using inquiry-based instructional practices: (a) who we are, (b) where we are in place and time, (c) how we express ourselves, (d) how the world works, (e) how we organize ourselves, and (f) sharing the planet (IBO, 2017). The curriculum places a strong emphasis on inquiry-based learning both inside and outside the classroom (IBO, 2019a). Morrissey et al. (2014) stated that the IBPYP curriculum is organized into three categories: (a) the written curriculum, (b) the taught curriculum, and (c) the assessed curriculum (IBO, 2020e).

The *written curriculum* was designed to generate learners' academic and social-emotional needs; to develop students who are independent and take responsibility for their learning; to support students' efforts to gain knowledge, understanding, and functionality within the world; and to help establish well-rounded individuals with personal values that enable the development of international-mindedness (IBO, 2020g). According to the IBO (2020g), the five essential elements of the PYP are the following:

- knowledge, which is both disciplinary, represented by traditional subject areas (language, maths, science, social studies, arts, PSPE) and transdisciplinary
- concepts, which students explore through structured inquiry in order to develop coherent, in-depth understanding, and which have relevance both within and beyond subject areas
- skills, which are the broad capabilities students develop and apply during learning and in life beyond the classroom
- attitudes, which contribute to international-mindedness and the well-being of individuals and learning communities, and connect directly to the IB learner profile
- action, which is an expectation in the PYP that successful inquiry leads to responsible, thoughtful, and appropriate action. (para. 3)

The *taught curriculum* identifies the pedagogical approach schools should take to teach the IBPYP written curriculum (IBO, 2020f). The taught curriculum supports student lead inquiry, which Netcoh (2017) found requires a balance of perceptions related to boundless choice and academic rigor to enable students to actively participate in their learning and construct meaning from the world around them (IBO, 2020f). The IBO (2020f) states student lead inquiry is accomplished through "drawing on their prior knowledge;" "providing provocation through new experiences;" and "providing opportunities for reflection and consolidation" (para. 2). The written and taught curriculum are then assessed using assessment methods that serve as powerful motivators for choosing learning strategies and approaches (IBO, 2020e; Lee & Choi, 2017).

According to the IBO (2020h), assessment in the IBPYP program has the following purposes: “promote student learning, provide information about student learning, contribute to the successful implementation of the programme” (para. 1). The IBPYP uses various forms of assessment that showcase learning as a continuous journey (IBO, 2020h). Formative assessment is used to help teachers anticipate knowledge and understanding gaps in advance and to modify teaching methods during the learning process (Babincakova et al., 2020; IBO, 2020h); formative assessment is a tool that should inform instruction, curriculum development, and used to improve teaching and learning (Babincakova et al., 2020). Formative assessment and diagnostic assessment strategies range from collecting information on each element of the written curriculum, understanding of concepts, and the acquisition of knowledge (IBO, 2020h). Summative assessment strategies range from the mastering of skills, the development of positive attitudes, and the ability to take responsibility (IBO, 2020h). Maintaining a variety of assessment and self-assessment strategies that are meaningful can increase adolescent self-esteem when the assessment incorporates self-expression and enhanced self-dependence to reveal abilities and showcase responsibility (Meškauskienė & Guoba, 2016); this makes the IBPYP an authentic education, displaying aspects of educational authenticity (EA).

The IBPYP could be considered authentic education, and the IBO (2019e) reported that the IBPYP prepares students to become caring, active, lifelong learners who demonstrate respect and understanding for the world around them. Luddecke (2016) described the IBPYP as displaying aspects of philosophies grounded in EA, defined as

how the curriculum is structured and constructed in relation to students and teachers who interact with it, necessitating personal responsibility over the maintenance of horizons of significance, advances of political involvement, and direct action to uphold democratic values. Luddecke reported that the IBPYP curriculum displayed EA by having students interact with it through personal responsibility and direct action. The IBPYP encourages globalization and is implemented in all three IB identified world regions: IB Asia Pacific (IBAP), IB Americas (IBA), and IB Africa, Europe, and Middle East (IBAEM).

Implementation of the International Baccalaureate Primary Years Program Within the International Baccalaureate Africa, Europe, and Middle East Region and the World

Implementation of the IB program is growing exponentially in the IBAP region (Wright et al., 2016), and between 2012 and 2017, there was a 479 increase in schools implementing the IBPYP worldwide (IBO, 2020). A study conducted in the IBAP region showed that students who participated in the IBPYP had higher levels of well-being equivalent to two months impact compared to non-IB peers, and that being in an IBPYP school decreased negative feelings and behaviors of an equivalent of 4 months impact compared to non-IB peers (Dix & Sniedze-Gregory, 2020). Dix and Sniedze-Gregory also reported that high implementing IBPYP schools in the AP region had a higher level of teacher engagement, the school climate was more positive, and students had higher socio-emotional learning skills outcomes. However, Walker and Lee (2018) found that schools in the IBAP that implemented more than one IB program had common problems of a lack of knowledge and understanding of other programs' actual activities, purpose,

and content. The terminology and jargon across programs differed, causing an intellectual disconnect (Walker & Lee, 2018) that could hinder the implementation of the IBPYP.

In the IBAEM region, Steffen and Bueno-Villaverde (2018) defined IBPYP implementation as document analysis of preliminary visit reports, school action plans, studies of parent satisfaction surveys, professional development plans, program of inquiry and units of inquiry assessment tools, and IB authorization reports. However, a recent study conducted in the IBA region indicated strong implementation of the IBPYP led to a better school climate (Boal & Nakamoto, 2020). Nonetheless, researchers failed to operationalize a strong implementation of the IBPYP based on the IBO's definition. This disconnect supports Ayyildiz and Uzumcu's (2016) findings that few researchers have focused on the international IBPYP and fewer have focused on the implementation of inquiry-based learning within the IBPYP.

Lochmiller et al. (2016) conducted a study in the IBA regions and found that teachers noted the challenges of moving from a traditional school model to an IBPYP philosophy and a need for professional support throughout their individual transition. The researchers also discovered that teachers viewed it as a serious implementation challenge to teach with an IBPYP philosophy and skillfully use inquiry-based learning while developing students into fluent English speakers (Lochmiller et al., 2016). Steffen and Bueno-Villaverde (2018), however, found that teachers in the IBEAM region who taught both the early years and primary years programs found the IB philosophy and IBPYP infrastructures easy to implement, but the written and or planned assessment curriculum were considered difficult with early years teachers perceiving them as significantly more

difficult. Savage and Drake (2017) conducted a study of all three regions that revealed that most critical comments concerning the IBPYP centered around poor implementation. This disconnect in implementation may be the lack of understanding about the perspectives primary teachers in the IBPYP-authorized school setting have about their implementation of inquiry-based learning within the IBPYP (Mutammimah et al., 2019).

Summary and Conclusions

The literature within this review clearly demonstrates there are benefits, challenges, and gaps within the overall implementation of the IBPYP model. A clear theme from the existing research is that the overall IB model has been found to develop inquiry-based thinking and learning and to generate students who are generally more proficient in scientific literacy, perform better on reading and have increased math performance due to its use of inquiry-based instruction (Dickson et al., 2018; IBO, 2020f; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018) and are more likely to be prepared for college and complete their degree of choice (Hill, 2018; Sagun et al., 2016; Walker et al., 2016). However, another common theme found by multiple researchers was the lack of studies conducted on the IBPYP, and inconsistency surrounding implementation and perspectives of implementation of the IBPYP program (Dickson et al., 2018; Ledger, 2017; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018) as well as a lack of studies that examined the value of the IBPYP in supporting elementary students' education (Lau et al., 2018). In this literature review it is clear that there is a lack of studies conducted that examine the IBPYP (Ledger, 2017) and even fewer studies conducted that have examined the implementation of the IBPYP's inquiry-

based learning (Ayyıldız & Uzumcu, 2016; La Porte, 2016; Lochmiller et al., 2016; Mutammimah et al., 2019). This complete literature review reveals that there is a gap in knowledge and understanding of primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP.

In this literature review I made it clear that inquiry-based instruction falls under the constructivist paradigm and requires various levels of scaffolding and feedback through assessment and documentation to aid learners in developing higher order thinking skills (Brown, 2018; Meškauskienė & Guoba, 2016; Netcoh, 2017; Qarareh, 2016). It is also clear that primary international teachers' perspectives of implementing inquiry-based instruction within the IBPYP vary and that challenges exist with implementation of the IBPYP (Lochmiller et al., 2016; Mutammimah et al., 2019). The challenges that exist are related to inquiry-based instructional strategies and techniques (Walker & Lee, 2018), choice, boundaries, and rigor (Netcoh, 2017; Van Uum et al., 2017), and assessment as a tool to drive inquiry and resilience (Meškauskienė & Guoba, 2016). This literature review revealed the need to understand primary international teachers' perspectives of implementing inquiry-based instruction within the IBPYP. In order to investigate the perspectives of primary international teachers about their implementation of inquiry-based instruction within the IBPYP, I conducted a basic qualitative study.

Chapter 3: Research Method

The Methodology

The purpose of this basic qualitative study was to explore the perspectives that primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP. In this chapter, I seek to detail, explain, and justify the use of the basic qualitative method to answer my research question and describe the design of this basic qualitative study. I also seek to justify the use of purposeful sampling and data collection through semistructured interviews until achieving saturation, and I address my role as the researcher. I justify my choice of using a reflexive interviewer journal, thick descriptions, transcript review, and audit trails and triangulation as a means to justify the research methods as recommended by Lincoln and Guba (1985).

Basic Qualitative Research Design and Rationale

I chose to use the basic qualitative research design because it is a generic approach focused on quality or meaning of experiences, and it has the goals of understanding, describing, and discovery (Ravitch & Carl, 2016). In this study, I sought to interpret, understand, describe, and discover the perspectives that primary international teachers have about their implementation of inquiry-based learning within the IBPYP. The IBPYP was developed using the REA. The REA is a pedagogical framework based on a constructivist educational philosophy, which aligns with the philosophy of my basic qualitative research question. The following research question guided the inquiry of this study.

Research Question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

Basic qualitative design, as Caelli et al. (2003) defined it, is one that focuses on understanding an experience or event and enabled me to explore the phenomenon of teachers' implementation of inquiry-based learning within the IBPYP to understand their perspectives. The conceptual framework of this study was based on the REA conceptual framework, a framework grounded in a constructivist educational philosophy that supports emergent curriculum developed over time using a reflective, inquiry-based approach based on the constructivist framework (Brown, 2018). I expected to gain insight into the perspectives of the participants through the use of researcher-conducted semistructured interviews and the use of a researcher journal to support the data through triangulation.

Rationale

I sought to understand the perspectives of primary international IBPYP teachers to interpret their implementation of inquiry-based learning within the IBPYP. Quantitative studies focus on the quantity, frequency, and magnitude of phenomena, whereas qualitative studies focus on the quality or the meaning of an experience related to a phenomenon being studied, each having separate philosophical roots. Johnson and Onwuegbuzie (2004) indicated that qualitative research has philosophical roots in constructivism and interpretivism, rejects positivism, and focuses on subjectivity. Burkholder et al. (2016) suggested that quantitative research has philosophical roots in positivism and postpositivism, focusing on objectivity. Caelli et al. (2003) stated that

basic qualitative research, or a generic study, exhibits some or all of the characteristics of a qualitative study, with the focus of the study on understanding an experience or an event. Because I was focused on investigating teachers' perspectives about their experiences implementing inquiry-based learning within the IBPYP, a basic qualitative approach was the most fitting approach to conduct this study.

By de Vaus's (2001) definition, those conducting qualitative research aim to interpret data to study a "thing" within its existing context while considering the subjective meanings that people bring to the situation. However, a basic qualitative research study is not guided by a set of established philosophical assumptions; rather, it is one that can exhibit some or all of the characteristics of a qualitative research design and one in which the researcher seeks only to discover and understand (Caelli et al., 2003; Merriam & Grenier, 2019). Therefore, I did consider a variety of qualitative research designs to conduct my study—case study, ethnography, evaluation research, grounded theory, narrative, phenomenology, the critical interpretive framework, and participatory action research—and determined that the basic/generic/basic traditional/pragmatic qualitative inquiry/interpretative description, which I will refer to as the basic qualitative design, was the best approach to answer my research question.

In this study, I sought to understand participants' perspectives, which is the purpose of a basic qualitative study, according to Ravitch and Carl (2016). In my study, I sought to understand primary international teachers' thoughts about their implementation of inquiry-based learning within the IBPYP to understand their experiences. I sought to discover the perspectives of primary international teachers within an urban setting to

understand their experiences. Answering my research question required the collection of qualitative data to understand the phenomenon from the perspectives of the research participants to understand their experiences, which did not require the collection of quantitative data. This study will be used to inform and guide practical action, which is the purpose of a basic qualitative study (Ravitch & Carl, 2016). I collected data using semistructured interviews and a reflexive journal. I analyzed data deductively using a priori coding initially, and then inductively through participants' responses (in vivo coding).

A basic qualitive design best suited my study because I identified patterns and trends across participants based on their lived experiences expressed in their own words (in vivo coding) in order to discover and understand the perspectives and experiences of the participants (Ravitch & Carl, 2016). My study was not guided by a single set of philosophical assumptions. Instead, my study exhibited the characteristics of multiple qualitative methods. It utilized characteristics of a case study through my use of purposeful sampling centered on a case or specific purpose. It exhibited characteristics of grounded theory design, narrative design, and phenomenology design through the use of semistructured interviews and my use of coding practices. My study was a basic qualitative design, identified by Ravitch and Carl (2016) as a flexible design that is evolving and emergent and relies on data collection that uses the researcher as the instrument and consists of multiple methods, or triangulation through interviews, and reflexive journaling.

Role of the Researcher

The constructivism paradigm in qualitative research places value on the multiple realities that people have in their minds, and in order to be reliable and valid, a research study must address these multiple, ever-changing realities (Golafshani, 2003). In order to construct a full view of the realities being experienced in the setting being studied, I operated as the research tool, making observations through interviews triangulated through the use of a reflexive researcher journal (Golafshani, 2003; Lincoln & Guba, 1985). Because I was the data gathering instrument, I had to take into account my own constructed understandings and personal biases as well as the potential for influencing respondents by being an educator in the international community.

I conducted this study in my backup location, which was my place of employment, where I held a teaching position in the secondary school and did not have interaction with or authority over the primary school participants I recruited from. However, as a researcher, I took my perspectives as an IBDP teacher and a science teacher who uses inquiry-based teaching practices into account. My pedagogical beliefs are that inquiry-based teaching is a best practice and is one that personally has required repeated and consistent training to implement in my secondary classroom, which presented the personal bias that I value inquiry-based teaching practices. In order to combat these biases, I kept a researcher journal and audit trail, and I used transcript checking by participants to ensure that participants' perspectives were recorded and that any researcher bias was recorded, with any researcher bias redacted from the final analysis of the data.

Methodology

I conducted this study using a basic qualitative method of inquiry, using purposeful sampling. Through my research question, I sought to understand and explore teachers' perspectives about their experiences implementing inquiry-based learning within the IBPYP. The following sections indicate my process for participant selection, instrumentation, procedures for recruitment, participation, and data collection, as well as my data analysis plan.

Participant Selection

I used purposeful sampling of primary international IBPYP teachers within an internationally accredited IBPYP school. Participants had to be primary international teachers who presently taught PreK through Grade 5 IBPYP. I purposely selected these individuals and setting for interviews to maximize understanding of the experience that I studied. Teddlie and Yu (2007) indicated that a strength of purposive sampling is the increase in transferability, and the smaller size leads to a greater depth of information from a smaller number of carefully selected cases. The population that I used was implementing the IBPYP in an accredited international school within an urban setting in the IBAEM region. This is the exact population and setting that Ayyıldız and Uzumcu (2016), La Porte (2016), Lochmiller et al. (2016), and Mutammimah et al. (2019) identified as needing additional research. Therefore, this population was from the group most likely to maximize the understanding of primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP. The participants were self-identified as IBPYP-trained teachers, which is a qualification for obtaining

IBPYP accreditation as well as a requirement for employment within the organization. I contacted and recruited participants through Google email, detailing the parameters of the study, purpose of the study, and confidentiality of participants.

Participants were from a homogenous group of educators; therefore, I was able to achieve saturation within eight to 11 semistructured interviews, as Baker et al. (2012) recommended. In order to reach saturation, I had to simultaneously sample the population and perform ongoing data collection and analysis to discover emergent themes as they arose (Baker et al., 2012, p.5). I knew that I had reached saturation when I no longer found emergent themes in my data collection (Ravitch & Carl, 2016).

Instrumentation

I collected data through interviewing participants in an audio-recorded set of semistructured questions and a reflexive researcher journal using a researcher-created interview protocol (Appendix A). The interview questions were created by me and based on the REA framework using Malaguzzi's (1993) articulation of the concepts. I created the interview questions based on the purpose of discovering teachers' perspectives on implementing inquiry-based learning, outlined by Malaguzzi as the evolving experience from the teacher seeing themselves as the provocation and reference for students as the authors of their own learning, where learning is made visible (Morrissey et al., 2014). Appendix A provides an outline of each interview question and my interview protocol. Appendix B provides an outline of each interview question's alignment to the component of the REA conceptual framework that it reflects. The following is a summary of the

interview questions and how they are connected to each component of the REA conceptual framework (Malaguzzi, 1993).

The background and summary questions included in Appendix A were used to introduce and conclude the interviews. The background questions were general inquiry questions meant to introduce the study and help to make participants feel more comfortable. None of the research questions were copied from any one source but were created by me from a culmination of readings and research outlined within my literature review. The interview process provided me an opportunity to ask conversational questions and helped me to probe more deeply into participants' perspectives. Rubin and Rubin (2012) indicated that conducting interviews allows the researcher to be immersed in the environment and to record, interpret, and decipher meaning from human experiences to better understand the phenomenon, adding to the human experience through research. Rubin and Rubin also noted that interviewing via telephone or conference software has demonstrated similar results as face-to-face interviewing. Rubin and Rubin indicated that because interviewing via telephone or conference software can take place in many different locations, it saves time and money and reaches people who are geographically scattered. My research was conducted via face-to-face video calls using an online platform when possible, rather than in person, face to face, and via telephone when the participant did not want to use the video call for any reason.

Procedures for Recruitment, Participation, and Data Collection

The head of a two-school system at an urban international, PreK–Grade 12 school in the IBAEM region granted permission to use this location for the study. I gained

permission by sending an email request and a LinkedIn message to the head of school of a private international school in the IBAEM region to ask for permission to send my participation request to the head of school to send to their staff for recruitment of participants for my study upon Walden University IRB approval. The head of school wrote me back and gave me permission to send my email participant request form to their school leadership team when I received approval to conduct my study. After receiving Walden University IRB approval, I recruited participants for my study from the PreK through Grade 5 teachers, as teachers in these grades implement the IBPYP. I sent an email invitation in a conversational tone to attract primary international IBPYP teachers from the school who implemented the IBPYP. Participants acknowledged that they were 18 years of age or older and volunteered to participate. Participants were required to respond with "I consent" to an electronic consent form that I sent via my Walden University email address prior to interviews being conducted via Google Meet/Skype/WhatsApp. I emailed a 100 TRY Starbucks gift card to the first 11 participants who agreed to participate and begin the interview.

I gathered data over the course of 2 weeks with an hour-long semistructured interview either during a scheduled lunch time or at the end of the teaching day, or during a weekend or holiday period that the participant identified as acceptable. I tried to set participants at ease by conducting interviews using a password-protected online platform of their choice (Google Meet/Skype/WhatsApp), and I recorded the interviews using a password-protected platform called Otter transcription and recording software to ensure their privacy during responses. I purposefully worded my interview questions directly

related to the conceptual framework in order to answer the corresponding research question to ensure the sufficiency of the data collection instrument. At the end of the interview, I debriefed each participant by sharing that I would provide them with a transcript of their interview for them to review and return to me for any additions or corrections. I ensured that I had their preferred method of contact for any additional follow-up questions that I had. I also debriefed participants by informing them that I would use pseudonyms to protect their identity in my dissertation and that I would provide them with a summary of the dissertation once the study had been completed. I closed the debriefing procedure by thanking them again for participating.

I did not have enough participants from the first school in the system; therefore I recruited from the second school (where I work) in the urban international IBPYP school system with 15 teachers who work across two campuses within the IBAEM region. I followed the same procedures with this second school as with the previous one.

Data Analysis Plan

In this basic qualitative study, the data were gathered through semistructured interviews and a researcher journal in order to identify the perspectives of primary international teachers about their implementation of inquiry-based learning within the IBPYP to answer RQ1. The initial and only research question focused on the semistructured interview data that were deductively coded using a priori coding based on the REA theoretical framework (Malaguzzi, 1993) to identify participant responses that related to the framework and were inductively coded in the participants' own language using in vivo open coding for patterns, categories, themes, and commonalities, allowing

the data to drive the emergent themes as recommended by Saldaña (2016). The a priori codes developed from the REA (Malaguzzi, 1993) were as follows: making learning meaningful (examples: learner's prior knowledge, ability to remember and process information, learner's motivation to learn), self-learning (examples: using the environment, real-life learning), colearning (examples: relationships between children with children or children with adults: through interactive experiences scaffolded by adults to create cognitive dissonance and cognitive growth along with social development of intelligence and skills for collaborating and problem solving), and learning made visible (examples: documentation and observation, reflection, qualitative assessment). I first took a deductive approach through a priori coding and then an inductive approach, allowing the data to drive the themes, and I used initial coding paired with in vivo coding to use the participant's own language to identify patters and trends within the data (Saldaña, 2016), where some a priori codes were discarded (Ravitch & Carl, 2016). Data were triangulated through interviews with multiple participants and my researcher journal comparing emergent themes to the research question and my researcher notes.

Coding is a cyclical act and takes more than one round to get it right; therefore, I had to go through multiple cycles of coding. During my first cycle I used a priori coding to break down the data in relation to the REA framework. I used initial coding to break down the data into discrete parts by examining and comparing them for similarities and differences. Then I compared the initial coding emergent themes and categories to the a priori codes to determine themes. Lastly, I coded across each interview response and compared them to the research question and a priori codes to identify patterns,

commonalities, and grouped lived experiences into similar categories, subcategories, themes or concepts, and assertions using words or short phrases that symbolically assigned a summary of my observations into concrete instances of meaning.

I triangulated the data through isolating each interview response for analysis and compared them to the research question. As categories arose, I identified concepts that emerged in relationship to a smaller category or larger category organizing the codes into groups from less inclusive to more inclusive making sure not to slant my perspective by continuously referring back to my notes, transcripts, and memos. I continued to code using in vivo coding, keeping all categories that emerged in the language of participants. Then, I used the category, which is a word or phrase describing an explicit segment of the data compared to the a priori codes to identify a theme, which is a phrase or sentence used to describe more subtle processes and evolves into a theme that shows the relationship between two or more concepts, which are ideas expresses as a single noun or noun phrase as cited by Rubin and Rubin (2012) and Saldaña (2016).

I triangulated the codes using the researcher journal, along with coding memos compared to the research question. The researcher memos noted any areas where personal bias appeared so I could note it and leave it out of my analysis as well as a place to note insights and outliers that emerged in the data. Once themes emerged from the coding they were represented as summary statements, conclusions, explanations about what something meant, or how an interviewee felt about a matter. Discrepant cases were still represented and described to include the perspectives of all participants because this study sought to understand the perspectives of participants, therefore all perspectives

increased understanding about my phenomenon. All coding were done in a password protected Excel File that was stored on a password protected hard drive that is kept in a lock box in my apartment.

Issues of Trustworthiness

Rigor is an overreaching concept to evaluate the quality of qualitative research consisting of internal validity, reliability, and external validity or generalizability (Merriam, 1995). I combined rigor with realism, which exists independently of us and our interests in the population being researched, because the mind and world are separate. To ensure trustworthiness I used multiple research methods of semistructured interviews, reflexive researcher journal, audit trails, and transcript review as recommended by Smith (1984) and Burkholder et al. (2016): which helped me to attend to the potential observer effect. I sought to illuminate through understanding and extrapolation from similar situations as recommended by Golafshani (2003) which can lead to transferability: all essential components to quality (Golafshani, 2003). Applying realist views of validity helped me to avoid practical difficulties from positivist approaches, which Maxwell (1992) suggested better represents what qualitative researchers do in assessing validity of their research.

Credibility

I ensured credibility through the use of transcript reviews by emailing a copy of the interviewee's transcript and observation notes of the interview to the interviewee. I also used a reflexive journal for recording observations of my thoughts during the research process (Rubin & Rubin, 2012). I used my research question, purpose of the

study, and research method as a guide to identify emergent themes to ensure I refrained from using my own interpretation of the data during the analysis process (Saldaña, 2016). I triangulated the interview responses and my researcher journal in an attempt to identify common themes due to data being collected from a similar situation and from the representative population of urban international IBPYP teachers in the IBAEM region.

Transferability

Transferability can be described through generalizability and examines the relationship between research cases and their contexts and allows qualitative researchers and consumers of their research to judge the quality of generalization of knowledge to alternate situations without relying on statistical or probabilistic evidence Chenail (2010). Transferability relies on the setting being described in sufficient clarity and detail so readers can make their own judgments about how the research applies to their particular scenarios (Merriam, 2002; Rubin & Rubin, 2012). Each data source was gathered from a purposefully sampled group within a similar situation: all data were gathered about international IBPYP teachers in an urban environment within the IBAEM region. Participants were prompted to provide in-depth responses with rich descriptions of their experiences being encouraged: enabling transferability through generalizability to IBPYP teachers in international schools.

Dependability

Dependability in qualitative research is the ability to replicate data collection and analysis through intercoder reliability or interrater agreement, or degree of agreement by multiple researchers on how to describe and categorize the observed data defined by the

study's theoretical framework (Burkholder et al., 2016; Drost, 2011). I ensured dependability by purposefully selecting my participants from an eligible list to ensure I was interviewing the desired population. I also maintained an Excel Spreadsheet as an audit trail within the coding data (initial coding, in vivo coding) to analyze results and judge the quality of the study. I triangulated the coded data from the interviews and my researcher journal to lend to additional dependability and credibility.

Confirmability

In qualitative research reliability and confirmability are difficult due to humans not being inanimate matter and constantly changing and is determined by the phenomenon being found to be stable and reliable and therefore based on the results of the study being consistent with the data collected (Merriam, 1995). Both reliability and confirmability were strengthened through participant transcript reviews; through being honest about my personal views as a science teacher implementing the IBDP using inquiry-based pedagogy; and an audit trail within the coding data that involved hand coding for initial coding and participant responses (in vivo coding) stored in an Excel Sheet with each set of coding from initial to in vivo documented as described in the design portion of the study. Ensuring confirmability and reliability were key to conducting this study ethically, and in a way that is transferable. I interviewed participants to discover their perspectives about their implementation of inquiry-based learning within the IBPYP, so I needed to ensure I was discovering the answer to my question using their constructed understanding, not my own.

Ethical Procedures

This study followed several ethical procedures to ensure respect for persons, beneficence, and justice through informed consent. I obtained Walden IRB approval: number 09-21-21-0258057. After the participants responded to the invitation, I provided them with a written consent form as required by Walden's IRB. Participants were given one week between the consent for participation and the start of scheduling interviews. Participants who agreed to schedule interviews were given a password-protected online platform to provide a safe environment in which to conduct the interview to respect the persons. My original 11 participants were sufficient to achieve saturation.

I maintained the protection of data throughout the study using several procedures. First, I gathered all interview data using a password-protected online platform called Otter transcription and recording software to provide a safe environment. I used my personal password-protected laptop to conduct all interviews and stored all audio-recordings, email correspondence, participant responses, researcher journal, and coded data on a removable password-protected drive that will be stored in a lock box for 5 years. Once 5 years has expired, I will permanently delete the archived data on the removable drive. I will be the only person that has access to the data unless a copy is required by my committee.

I conducted this study in an international accredited school located in my community and therefore needed to have clear boundaries with the organization as well as participants in the study to maximize the trust of participants and the cooperation of the organization to allow me to utilize them as my research site. I conducted all

interviews during non-teaching hours and through Google Meets/Skype/WhatsApp via my personal Gmail/Skype/WhatsApp audio-record using Otter transcription and recording software and stored all recordings on a password-protected removable drive. I kept all responses confidential using pseudonyms for respondents and excluded any identifying information such as gender, race, nationality, age, homeroom grade level, subject area, or specialty area.

Summary

My study focused on exploring the perspectives of international teachers in an urban setting and their implementation of inquiry-based learning within the IBPYP which has not been addressed in previous studies. I chose a basic qualitative methodology study design after I analyzed other qualitative approaches. The purpose of this basic qualitative study was to explore the perspectives primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP. In order to answer my question, I used purposeful sampling of eight to 11 IBPYP teachers within an international accredited IBPYP school in an urban setting in order to reach saturation. Data were gathered through a researcher-designed interview protocol of semistructured questions, a researcher journal, and thick descriptions analyzed through the cyclical coding process of initial coding and in vivo coding. The results of this study have the potential to create social change when leaders and researchers use the study results to enhance learning. Because the IBPYP is an international program, this research will be transferable to international schools implementing the IBPYP's inquiry-based learning within their school system.

Chapter 4: Results

Introduction

The purpose of this basic qualitative study was to explore the perspectives that primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP. The following research question guided the inquiry of this study.

Research Question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

In this chapter, I include the setting and describe the participants' personal or organizational conditions that may have influenced the interpretation of the study results; identify the participant characteristics relevant to the study; and explain and describe the number of participants, data collection procedures followed, data collection instrument used, how data were recorded, and any variation in data collection from what was presented in Chapter 3, along with any unusual circumstances encountered in data collection. This chapter also includes my data analysis from deductive a priori coding to inductive in vivo (in participants' own words) coding and a detailed explanation of how I moved from less inclusive to more inclusive categories and themes and a representation of discrepant cases and how they factored into the analysis. Then I report on how I ensured trustworthiness throughout this study's data collection and data analysis process. I conclude with the results and findings of the study.

Setting

This study was conducted at one two-school accredited international school system within an urban setting in the IBAEM region. The study location is a private for-profit international school that is overseen by the local government Ministry of Education. Because not all international primary schools are private for-profit schools, some are nonprofit organizations, and not all international schools are overseen by the local government, which may have influenced the interpretation of the study results. The setting of an international school presented some difficulties when interviewing and coding transcripts of some participants because not all participants' mother tongue was English. One of the things that I noticed during the transcription process and while listening to the interviews of English as second language participants repeatedly was the difficulty that my participants had with longer questions. I had to break down interview questions further than my probing questions in some instances and use examples from my participant's previous interview responses, which may have influenced the interpretation of the study results.

Demographics

The participants were IBPYP teachers within an internationally accredited IBPYP school system. Participants were primary international teachers who presently taught PreK through Grade 5 IBPYP as homeroom teachers and specialist teachers. All participants were implementing the IBPYP in an accredited international school within an urban setting in the IBAEM region.

Data Collection

As shown in Table 1, I gathered data over 2 weeks, from October 29, 2021–November 10, 2021, from 11 participants through interviewer-conducted semistructured interviews that lasted between 29 minutes and 1 hour and 16 minutes. I conducted all interviews on password-protected online platforms, as seen in Table 1. I started by noting the setting for each interview. The participant in Interview 1 could not join the Google Meet link, and we communicated through email and arranged to meet through Skype within 10 minutes of their scheduled interview time. Participant 1 was seated at a desk with no visible or audible distractions and appeared unphased by the technical difficulties. Participants 2–4, 6, and 8–11 were seated at a desk or table on a laptop with cameras on with no visible or audible distractions. The participants in Interviews 5 and 7 could not join the Google Meet link, so we used WhatsApp and spoke on the phone with no audible distractions in the background. I planned to gather data using Google Meet, WhatsApp, or Skype, so having to change platforms for Interviews 5 and 7 did not cause any unusual circumstances in my data collection. I conducted Interviews 1–4 and 6–11 on my laptop in a closed room to protect the participant's responses from being overheard due to living in a one-bedroom apartment. I conducted Interview 5 in a locked classroom after working late. I locked the classroom door to protect the participant's responses from being overheard by any staff who might have stayed late that day.

Table 1

Interview Schedule Frequency and Duration

Teacher	Interview date	Location	Duration
T1	October 26, 2021	Skype	53 min 53 s
T2	October 29, 2021	Google Meet	1 hr 16 min
T3	November 2, 2021	Google Meet	1 hr 3 min
T4	November 2, 2021	Google Meet	33 min 18 s
T5	November 3, 2021	WhatsApp	37 min 44 s
T6	November 4, 2021	Google Meet	41 min 49 s
T7	November 4, 2021	WhatsApp	35 min 46 s
T8	November 8, 2021	Google Meet	1 hr 1 min
T9	November 9, 2021	Google Meet	57 min 27 s
T10	November 9, 2021	Google Meet	48 min 29 s
T11	November 10, 2021	Google Meet	29 min 22 s

I recorded data using Otter Voice (2016) online software, which I also used to transcribe the data. After completing the transcription process using Otter Voice (2016), I organized each transcript by line and imported it to an Excel sheet. I placed each set of transcripts on its own sheet and labeled it by participant code (i.e., T1–T11). No unusual circumstances were encountered during data collection.

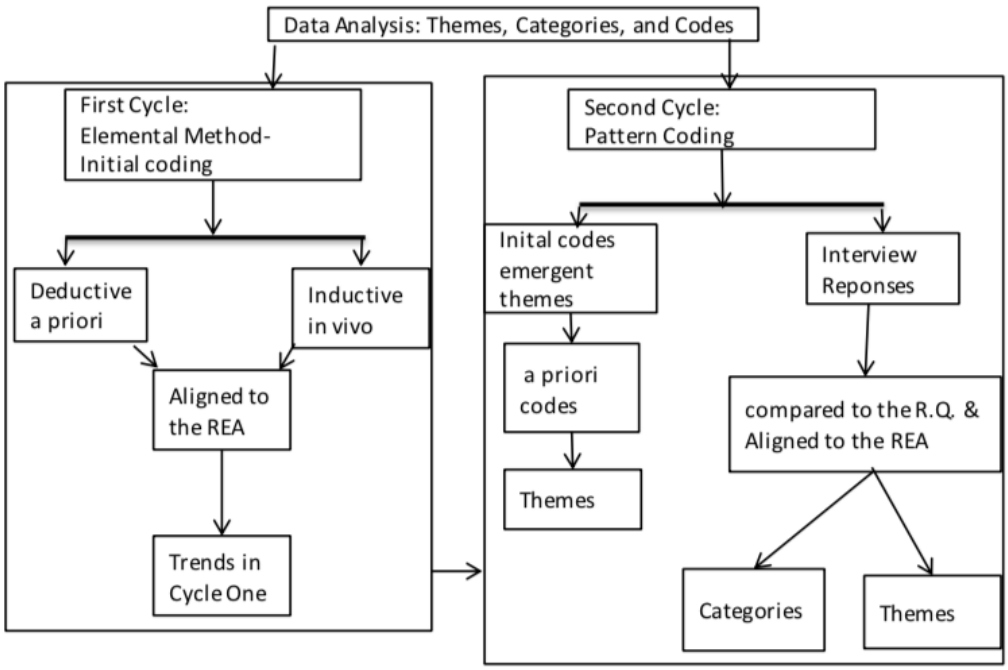
Data Analysis

I analyzed my data using an elemental method (Saldana, 2016) for the first cycle, initial, and in vivo coding by starting deductively using the a priori codes of colearning, learning made visible, making learning meaningful, and self-learning, aligned to the REA framework. I used the a priori initial coding to break down data into discrete parts to closely examine them for comparisons of similarities and differences. Then I inductively conducted initial coding and used in vivo codes placed in quotes as my initial codes. I used my initial codes, which were a priori or initial codes, paired with in vivo to identify

trends in Cycle 1, and discarded a priori codes that did not fit the data. Then I conducted by second cycle of coding: pattern coding (Saldana, 2016). First, I compared initial coding emergent themes and categories to a priori codes to determine themes. Then I coded across each interview response and compared it to the research question and a priori codes to identify patterns and commonalities and to group lived experiences into similar categories, themes, or concepts. In all stages, I kept all categories in the language of the participant. Conducting multiple rounds of coding and triangulating the data by comparing the data to each participant's response and to my researcher journal and memos enabled me to generate themes while comparing them to the participants' words using in vivo coding as well as to my REA framework, as seen in Figure 1.

Figure 1

Data Analysis Process



Summary of Codes With Example Descriptions

I began by transcribing each interview, making notes as memos in the data analysis spreadsheet of trends, concepts, and ideas that I had about the data in relation to the research question that guided the inquiry of this study.

Research Question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

I made notes of my thoughts, code ideas, and theme ideas in my reflexive researcher journal during the transcription process. Once I finished transcribing each interview, I sent it to be reviewed by the participant before I began coding the interview to ensure that I captured the meaning that the participant intended during the interview. Throughout the coding process, I continuously compared my initial codes to the REA framework, research question, and my memos, reflexive researcher journal, and transcripts to identify emergent categories and themes from my participant's actual language.

In and across all 11 sets of data, from the Teacher 1 (T1) interview to the Teacher 11 (T11) interview, I identified 651 lines of text that aligned with the a priori codes derived from the REA. I identified an additional 61 in vivo codes using the language of the participants, which I used to discard a priori codes that did not correctly identify what the participant intended. During the first cycle of coding, the following deductive a priori codes seen in Table 2 aligned with the quotes of participants: making learning meaningful, learning made visible, colearning, and self-learning. As recommended by Saldana (2016), the completed coding manual contains a priori and in vivo codes with

detailed descriptions, exclusion criteria, typical exemplars from each participant, atypical exemplars, and any "close, but no" exemplars in Appendix C, Table C1.

Table 2

Deductive A Priori Codes

RQ. What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?		
A priori code	Participant	Sample excerpts
Making learning meaningful	T4	"I try my best to steer them in the right direction without giving them the answer and making callbacks to maybe the anchor charts that we have in our room or some of the previous lessons that we've done in the past."
Learning made visible	T8	"So we'll go through like we'll always have lists up of like, what we're doing success criteria wise, or rubric wise, and we'll talk about how well we make those, what we can do to improve in our next tasks."
Colearning	T1	"Students are really using their thinking skills, social skills, agreements, sometimes disagreements but okay, fine."
Self-learning	T9	"With math or if we're learning about time, we might do races to time each other and make it link it to real-life learning."

The a priori deductive codes were not sufficient to code the data and, in some cases, were discarded to ensure that I captured the true meaning of the participant's response; therefore, I used inductive coding in the language of the participants during initial coding and arrived at 67 codes in the language of participants. I provide a sample of my in vivo codes with participant identifiers and supporting quotes in Table 3. The completed coding manual is in Appendix C, Table C1.

Table 3

Example Inductive In Vivo Codes Explained and Aligned With Participants' Quotes

RQ. What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?		
In vivo codes	Participant	Example quote
"Resources"	T9	"I think just the lack of resources provided sometimes and it isn't just particularly in this school."
"Time"	T7	"I would want to have to do like real planning, like collaborative planning that would take up like a whole morning or like a whole afternoon where all my classes are either covered, or students are off-campus."
"Integrate"	T10	"So, for example, currently in the Grade * unit that I'm teaching is where we are in place in time, and we're looking at locations on the map and identifying characteristics within those cultures or within those countries, and we're looking more geographically or historically rather than a how the world works, which might be a more scientific led unit."
"Process"	T8	"And also, like learning isn't linear."
"Provocation"	T6	"Starting with provocations from yourself as a teacher and your surroundings in the classroom, and environment, and trying to provoke questions."
"Concept-based learning"	T7	"Having broad concepts and broad topics that can be explored in any way."
"Other teachers"	T8	"I think if you have more time to do that, and explore, really good learning experiences and really good assessment tools, then, you know, you'll be better at sharing those with people and having the time to, you know, go over them with others as well."
"Participate in learning"	T3	"And now I feel like no, no. Okay, what are you doing to participate in this learning?"
"Families in center"	T6	"But having the community involved in the process of inquiry is probably the most brilliant part."
"School not flexible"	T1	"And also, (*events) so many, and some schools are not really flexible."
"Show them"	T3	"And then but show them how so that they know."
"Partners"	T3	"But I've been fortunate my partners have been really into taking field trips, but I have had partners before at other schools who hated it."

Note. The symbol * indicates portions of the participant's quote that have been changed to protect the participant's identity and have either been removed or replaced with a generic representation of what their response was.

Each code type was aligned to the REA for use in developing the trends in Cycle 1, which become subcategories, categories, and in some cases, emergent themes.

Summary of Subcategories, Categories, and Emergent Themes

During the second round of data analysis, I used pattern coding, taking my initial codes and emergent themes and comparing them again to the a priori codes to develop themes, along with comparing my interview responses to the research question and aligning them to the REA to develop categories and themes. I compared each interview to the previous interview to identify the codes that they had in common, based on similar meanings and similar characteristics, while continuing to code my other interviews. I started by moving from less inclusive to more inclusive and identified subcategories that my a priori codes and in vivo codes fit into and then identified categories that each subcategory and code set fit into. I identified 41 subcategories and 37 categories in the words of participants that answered the research question and aligned to the REA.

I provide a sample of my categories aligned with subcategories, in vivo, and a priori codes with participant identifiers and supporting quotes in Table 4. Appendix C, Table C2 has a complete description of the subcategories with definitions and participant quotes, and Appendix C, Table C3 has a complete description of the categories with definitions and participant quotes. Lastly, I grouped subcategories with the categories that they shared a similar meaning or characteristics with.

Table 4

Example of Codes, Subcategories, and Categories

RQ. What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?					
A priori codes	In vivo codes	Subcategory	Category	Participant	Example quote
	"Show them"	"Kids have to understand"	"Imple-menta-tion strategy"	T3	"The kids have to understand what you're doing. You know, I just had to show them the picture of inequity."
	"Process"			T10	"In this way, it's more active; it's more hands-on, it's more process based, and puts more of the responsibility of learning on the student through active participation in lessons."
Learning made visible		"Hang up their stuff"		T5	"So yeah, for me, it's really important really, really important (*my classroom) is like a celebration of student work, and that they can see you know, their peers and that they can see that like if they do a piece of work it's put on the wall."
Making learning meaningful	"Integrate"			T9	"But you can tie those into the things that the students already know, or some may know, and some may not."

Note. The symbol * indicates portions of the participant's quote that have been changed to protect the participant's identity and have either been removed or replaced with a generic representation of what their response was.

After I coded each interview, I grouped categories together based on similar characteristics and similar meanings and then compared them to the previous interviews that I had already coded and categorized. I kept track of all my emergent themes from individual interviews compared to previous interviews. Throughout this process, I identified the following eight emergent themes in the words of participants from the analysis: (a) "flexibility," (b) "guiding," (c) "students choose," (d) "limitations," (e) "training," (f) "plan units," (g) "learner-centered," and (h) "student-centered instruction."

Triangulation of Themes

I continuously compared each participant's interviews emergent themes and categories to the interviews I analyzed before following the methods outlined above (as seen in the example provided in Table 5 with a full example in Appendix D, Tables D1-D3. During this process, I reviewed all themes to ensure they answered my research question and aligned with the REA. I discarded themes that did not have enough data to support them or shifted them into categories in themes that they supported. I also rearranged categories to ensure they were in the correct theme. I compared my themes to my research question, the REA, my memos, and my researcher journal several times to ensure that they answered the research question. The following six new themes in the words of participants emerged: (a) "plan units," (b) "training needed," (c) "flexibility," (d) "student-centered instruction strategies," (e) "maintain learner-centered focus," and (f) "limitations of implementation." My final theme analysis table with all interviews was compared individually and across each interview and compared to the research question, memos, researcher journal, and the REA framework is in Appendix E.

Table 5

Theme Analysis Example Between T1 and T2

Research question What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?				
T1 a priori codes (frequency of occurrence)	T1 codes (frequency of occurrence)	T1 subcategories	T1 categories	T1 emergent themes
	“Meetings then what?” (10) “Tomorrow’s adult” (1) “Teacher agency” (1) “Resources” (8) “School not flexible” (4) “Time” (8)		“Collaboration” “The future”	“Limitations”
T2 a priori codes (frequency of occurrence)	T2 codes (frequency of occurrence)	T2 subcategories	T2 categories	T2 emergent themes
Learning made visible (1)	“Room” (2) “Straddling PYP and middle school” (2) “Resources” (3) “Classes are large” (1) “Supplies” (12) “Behavior” (8)		“Difficult” “Challenges”	“Limitations”
T1 and T2 combined a priori codes (frequency of occurrence)	T1 and T2 combined codes (frequency of occurrence)	T1 and T2 combined subcategories	T1 and T2 combined categories	T1 and T2 combined emergent themes
Learning made visible (1)	“Meetings then what?” (10) “Tomorrow’s adult” (1) “Teacher agency” (1) “Resources” (11) "Room" (2) "Straddling the PYP and middle school" (2) "Behavior" (8) "Supplies" (12) "Classes are large" (1) “School not flexible” (4) “Time” (8)		"Collaboration" "The future" "Difficult" "Challenges"	"Limitations"

Description of the Final Themes

I thoroughly analyzed the data using the REA framework to answer my research question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

All participants stated they view limitations related to challenges and difficulties that restrict their ability to enable children to interact with other children, participate in learning through the environment, and limited in motivating students to and accessing their prior knowledge or ability to display qualitative data for student reflection, which in turn restricts their ability to implement inquiry-based learning. All participants stated that they view the way they plan units as a key method to implement inquiry-based learning that makes learning meaningful, is learning made visible, and enables students to engage in colearning and self-learning, with six out of 11 participants who viewed training as something they needed to help them plan units that align with the REA. All participants view student-centered instruction as a method to implement inquiry-based learning by making learning meaningful, colearning, self-learning, and learning made visible. All participants also view their implementation of inquiry-based learning as learner-centered, where students take an active role in their learning, and by teacher to student collaboration as a method to implement inquiry-based learning. Lastly, all but one participant stated that they view the flexibility of the IBPYP framework enables them to make learning meaningful, visible, and provide students with opportunities to participate in colearning and to engage in self-learning, making the flexibility of the IBPYP framework a core component to their implementation of inquiry-based learning. A few

participants presented outliers that contained both contradicting viewpoints and raised some unexpected points that led to unexpected findings, which are reported below, along with a description of how I factored them into my data analysis.

Outliers, Unexpected Findings, and Discrepant Cases

The participants' responses were consistent; however, I found some outliers and unexpected findings in response to my interview questions. I included these discrepant cases to identify the variances from other participants' responses. I included these discrepant cases in my final data analysis because they could lead to areas of future research related to systems thinking within international schools and its role in implementing inquiry-based learning. Lastly, I included all discrepant cases due to the potential of identifying a coding error, for a case that either did not need to be coded or that I should rethink the code I chose to represent the data as recommended by Saldana (2016) to strengthen the trustworthiness of the findings.

Evidence of Trustworthiness

I implemented a rigorous study that consisted of internal validity, reliability, and external validity or generalizability. I ensured trustworthiness and overcame the potential of the observer effect by using multiple research methods of semistructured interviews, a reflexive researcher journal, audit trails, and transcript review. By using the strategies outlined in this section, I ensured the credibility, transferability, dependability, and confirmability of discovering the perspectives primary international teachers have about their implementation of inquiry-based learning within the IBPYP.

Credibility

I ensured credibility by emailing a copy of all transcripts to participants and any observation notes of the interview to the participant. I instructed participants to make any corrections to my observations and transcripts that did not reflect their true responses. No participants emailed me any corrections. I also used a reflexive journal for recording observations of my thoughts during the research process. I continuously used my research question, purpose of the study, and research method as a guide to identify emergent themes. I placed my research question at the top of every data analysis document and comparison chart to reference as I determined codes, categories, and themes; I also hung my purpose and research method on the wall beside my laptop to reference; I did this to ensure I refrained from using my own interpretation of the data during the analysis process. I also consulted with my chair and methodologist after every interview I coded, categorized, and identified emergent themes. I consulted with another university qualitative research methodologist to discuss ideas, patterns, and trends I noticed within my data three times throughout analyzing my data for an additional perspective on the patterns I was seeing. I triangulated my data by using the interview responses and my researcher journal to identify common themes.

Transferability

I ensured transferability by interviewing a homogenous group of IBPYP primary international teachers to illuminate through understanding and extrapolation from similar situations. I used purposeful sampling and gathered all data from international primary IBPYP teachers in an urban setting within the IBAEM region. I prompted participants to

provide in-depth responses through self-developed probing questions throughout the researcher developed semistructured interviews to enable transferability through generalizability to IBPYP teachers in international schools.

Dependability

I ensured dependability by interviewing the desired population by purposefully selecting my participants from a homogenous group of primary international IBPYP teachers within the IBAEM region. I also maintained an Excel spreadsheet as an audit trail within the coding data (initial coding, in vivo coding) and created a coding manual as recommended by Saldana (2016) within the Excel spreadsheet to analyze results and judge the quality of the study. The coding manual helped me define what exactly fits each a priori code and in vivo code, adding to the quality of my decisions in the audit trail. I used my researcher journal to triangulate the coded data from the interviews and to lend additional dependability and credibility.

Confirmability

I strengthened both reliability and confirmability through participant transcript reviews, being honest about my background, and keeping an audit trail. I emailed participants their transcripts for review 1 week after completing each interview and instructed participants to email me any corrections; no one emailed me corrections. I was honest by detailing my personal views as a science teacher implementing the IBDP using inquiry-based pedagogy. Lastly, I kept an audit trail by storing all data analysis in an Excel Sheet to keep an audit trail within the coding data that involved hand-coding for initial coding and participant responses (in vivo coding), with each set of coding from

initial to in vivo documented as described in the design portion of the study. I recorded all codes, subcategories, categories, and emergent themes and my process of determining each within the audit trail to aid in reliably communicating the results of my study for confirmation.

Results

The following research question guided the inquiry of this study.

Research Question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP?

I found six themes about primary international teachers' views about their implementation of inquiry-based learning as (a) plan units, (b) training needed, (c) flexibility, (d) use of student-centered instruction strategies, (e) maintaining learner-centered focus, and (f) as having limitations to their implementation of inquiry-based learning. In the section below, I will describe each theme through identified categories and subcategories broken down into discrete codes in the language of participants and a priori codes that are aligned to the REA framework, which provide detailed examples of how primary international teachers utilized each implementation strategy. I will also discuss discrepant cases and non-confirming data in further detail related to each theme.

Theme 1: Plan Units

The first theme I found is plan units: Primary international teachers plan units that are aligned to the REA as a method to implement inquiry-based learning in the IBPYP. In response to interview questions dealing with learning made visible, making learning

meaningful, self-learning, and colearning, teachers 2-11 described their implementation of inquiry-based learning as accomplished through the way that they plan units.

T5, T7, T8, T9, and T11 expressed that they plan units through collaboration that is documented as teachers' learning made visible and through integration with homeroom inquiries as a method they use to implement inquiry-based learning. T5 explained that they planned alongside other homeroom teachers to support the work homeroom teachers are doing by integrating homeroom learning into their projects. T8 identified that they collaborate with teachers to integrate in all subjects through recording what each teacher is doing and by collaborating with the PYP coordinator to organize all learning that is taking place in homerooms. T11 supported the idea of cross-curricular integration with all primary homeroom units by stating that they designed learning activities that relate to the homeroom unit of inquiry. T7 and T8 offered further support for a need for more collaborative planning time for integration, and T9 provided further evidence of a need for time to collaboratively plan units to implement inquiry-based learning. T8 provided an example of the views primary international teachers have of planning units to implement inquiry-based learning through collaboration and learning made visible:

> And I think loads of being in touch with each other and find out what's going well with the other teachers too because they might say "Oh, such and such is doing in this unit in art or music or whatever." And I guess the recording and organizing of all of that is important too, and we're lucky that we have a PYP coordinator and our school who just kind of organized everything for us.

Additionally, T3 and T9 view trying to plan units that combine Language Arts and math to make learning meaningful as a method to implement inquiry-based learning. T3 stated: “I worked during this unit as well; we tie it with language arts.” Which, T9 agreed:

> You know, and, you know, to share to so we plan the unit so maybe the other Grade 5 teacher might do the social studies and the science. I might do the math and the Language Arts and then we just share ideas how we're going to utilize that into the units of inquiry.

T3, T5, and T7 viewed the way they plan units as having students’ input to make learning meaningful. T3 stated, “Yeah, I mean, they have to have input.” T5 expanded on in agreement that student input included student questions to aid the teacher in making decisions related to research plans in the unit. Lastly, T7 agreed that students cocreate the unit; “It can always change and depends on what direction students go or like the way the teacher goes.”

T3, T6, and T8 viewed planning units by having the families at the center as an essential element in their implementation of inquiry-based learning. All three viewed the focus of families at the center of concept-based learning activities and provided a focus on self-learning through taking action to make the world a better place. T3 stated:

> I am more like, and I think this is how IB wants us, would like us to think of our families as they're in the center, and then we move out from there, and we're trying to build we're trying to make good humans, right.

Teachers also reported that they planned units to include colearning by focusing on keeping the students in the middle and focusing on learner profiles and attitudes and the main components of the IBPYP. T10 described the way they plan units to implement inquiry-based learning as incorporating the elements of the full IBPYP, which they described:

> So, the main components of the PYP, there are essential elements that were comprised of: They include learner profiles, key concepts, we have transdisciplinary themes we have all of these sorts of overarching elements that are included in every single unit.

T3 agreed with T10 that they planned units by using the learner profile but additionally kept students in the middle of their planning. T5 agreed that they implement inquiry-based learning by planning units that used the learner profile, as T5 specified:

> So, I think that's kind of helpful because you're like, oh, yeah, now you're being like a thinker, or, you know, you're being open-minded, so you can kind of put them with the learner profiles: that works that well.

T2, T3, T4, T7, and T10 view the use of chunking lessons to approach their planning with concept-based learning as a method to facilitate colearning and make learning meaningful and view the use of planning with the end in mind from Understanding by Design (UbD) as essential to make learning meaningful and to plan for self-learning. T2 plans units by chunking lessons to provide guidance, whereas T3 described the way they plan units to implement inquiry-based learning as utilizing UbD; T3 described planning units with the end outcomes or learning goals in mind. T4 also

said they planned units with an end assessment in mind and scaffolded learning activities that guided students through connections to that end goal. T7 agreed they planned units to implement inquiry-based learning by focusing on an end goal. T10 further explained the use of key concepts in planning implementation of inquiry-based learning: “Key Concepts sort of make a thread between different units of inquiry by identifying different areas that students are exploring.” Teachers also viewed it as essential to learn from other teachers to collaborate when planning units to implement inquiry-based learning that makes learning visible and meaningful. T8 supported this view and shared:

> And I think loads of being in touch with each other and find out what's going well with the other teachers too because they might say oh, such and such is doing in this unit in art or music or whatever.

The majority of participants view a need for more time to collaboratively plan. T3 and T9 view a need of having administrative support in aiding in the facilitation of inquiry-based learning ideas the teacher and students have. T5 and T11 purposefully collaborate with other primary homeroom teachers to integrate with the inquiry happening in each homeroom T5 shared:

> So, for (*my subject), I usually work alongside homeroom teachers, and we like collaborate together, and then I will try and sort of help their the work that they're doing, like support the work they're doing in homeroom with like (*) projects that are using the same like subject and topic areas. Areas that they're covering in homeroom.

T8 expanded on the need to collaborate and learn from colleagues to implement inquiry-based learning:

> For me, I always think that it is way more useful, CPD is having the time to talk to another one of my colleagues and ask them what sort of stuff they did or being able to go and check around their classroom at the end of the day or look through books or something like that is, is really, really helpful.

T1 and T9 added that their planning of units as teachers having agency over decisions in relation to the inquiry-based learning component of the IBPYP as a method to implement inquiry-based learning that makes learning meaningful. T9 described the need for administrative support in their use of planning units as a method to implement inquiry-based learning as follows:

> And maybe a little bit more support from you know, other members of staff, as far as you know, not particularly the teaching stuff, but you know, maybe the, you know, like admin. Or some more, you know they're perhaps doing all they can, but you know, maybe just to kind of facilitate, to make things happen rather than just talk about it.

T2, T3, T4, T5, and T11 view the use of tools as useful to their collaboration in planning units and as useful in facilitating learning. T2, T3, T4, T5, and T11 use Toddle as a tool to plan units and for collaboration with other teachers to integrate with all content and homeroom teachers in relation to the inquiry-based learning component of the IBPYP. They view the use of planning their units using the IB learner profile as a tool

to implement inquiry-based learning. T11 shared: “I mean, I used to try and use like the learner attribute profiles and then like my units, I like with all of that stuff as well.”

Discrepant data arose in questions related to making learning meaningful that was not found within the literature related to the REA. These data arose when participants were asked if they would like to share anything else with me. T3 plans units to purposefully collaborate with secondary students as a method of implementation and would like to have more secondary student collaboration. T3 shared:

> Maybe the lack of secondary, I guess, you know, I I've been the most one of the teachers in the primary, that’s probably had the most contact with secondary students because of translanguaging. Right. And I think that would that's I think that needs to happen more. I think it benefits secondary kids and primary kids.

Theme 2: Training Needed

The way teachers plan units contained the second theme of training: Primary international teachers view teacher training as necessary and as a first step to being successful at implementing the inquiry-based learning component of the IBPYP. They view teaching training that is focused on the essential elements of the IBPYP and done in an environment that provides space and accountability as necessary for primary international teachers to implement the inquiry-based learning component of the IBPYP. In response to interview questions pertaining to learning made visible and aiding students in making long-term memories, T1, T2, T3, T4, T6, and T8 view training as necessary for the implementation of inquiry-based learning and as the first step to being successful at implementing inquiry-based learning. They view teacher training that is focused on the

essential elements of the IBPYP of the learner profiles, attitudes, skills, concepts, and transdisciplinary themes as necessary for teachers to implement inquiry-based learning. T2 stated:

> I think some kind of a course about PYP. So, I that just having the training, of having a good solid foundation of like understanding the entire program, and sort of, you know, what's expected of me. I think, would be a good first step to being successful.

T3 further supported this by stating:

> So, if teachers have, yeah, I mean, if they have no idea, the learner profiles, the attitudes, skills, the concepts, you know, there's so many things juggling at one time, you know, the transdisciplinary themes, how are they? That's a lot of information to absorb, right. I think they definitely the essential elements have to be focused on for teachers and then teachers need time in order to internalize all of those.

T3 and T8 view teacher training as needing a growth mindset, where teachers are provided space to make mistakes but held accountable after achieving proficiency to implement inquiry-based learning. They view training to aid teachers in developing and achieving their implementation goals and aiding teachers as researchers to learn, understand, and better implement inquiry-based learning. T3 shared:

> And I think teachers have to be given the space to make mistakes and be forgiven, you know, for not knowing. So, once they do know those things, you need to walk

> into a room and see it, you know, where's the language integration? Where's the math integration? Where's the assessments?

Teachers view training as necessary courses about the PYP and a way to establish consistent expectations related to the implementation of inquiry-based learning from the school, from the training provided, and in teacher training workshops completed by all PYP staff. T2 stated: “But I think, you know, consistency in sort of in training.”

T3 and T6 view training related to the action side, and colearning development of children learning English components of inquiry-based learning as areas they need help in by self-learning. T3 stated: “I would say I need more help with the grappling with the action side of it.” T6 shared: “The ELL, like English language learning is something that I've been having to skill myself up on how I deliver a lesson.”

Lastly, teachers view training as having guidance from other experienced IBPYP teachers and having a strong buddy or partner to help teachers who are new to inquiry-based learning to learn from them about how they implement the inquiry-based learning component; to aid teachers in developing and achieving their implementation goals; and aiding teachers to learn, understand, and better implement inquiry-based learning. T2, T3, T4, T6, and T8 agreed that having a buddy teacher would help to support the training and navigation of the IBPYP. For example, T3 shared:

> You know, they need to have like a strong buddy who has had some, or they need to have some kind of training at the school in order to help those new teachers to navigate all of that information and also not to be expected.

A discrepant case arose from T1 when asked about what would help them to implement inquiry-based learning better related to the REA. T1 related this as a need for affordable training workshops, which has not been brought up in past studies on the IBPYP. T1 views IBPYP workshops and teacher training as expensive, which is a reason primary international teachers believe they are not receiving this much-needed teacher training that could help teachers apply their new learning combined with their prior knowledge in implementing inquiry-based learning. T1 stated:

> Because they are very expensive, and we are, we are getting very less, for example, because it's important for us to update ourselves. I mean IB teachers are a researcher; they need to, they are hungry, they need to learn more, and they need to update, and they need to make a good sense of their new learning and prior knowledge.

Theme 3: Flexibility

The third theme I found is the flexibility of the IPBYP framework: Primary international teachers view the flexibility of the IBPYP framework as a core component of their implementation of inquiry-based learning that is aligned to the REA. In response to interview questions dealing with learning made visible, making learning meaningful, self-learning, and colearning, teachers 1-9 and 11 described the flexibility of the IBPYP framework as a core component of their implementation of inquiry-based learning.

T1, T2, T3, T4, T5, T6, T7, T8, T9, and T11 view the flexibility of the IBPYP framework as useful to their implementation of the inquiry-based learning component of the IBPYP through the intentional decisions by the teacher related to the broad

framework of the IBPYP. T2 stated: “I do think there should be, it should be intentional.” They view the flexibility of the IBPYP framework enables them to make an intentional decision about which concepts to focus on within the concept-based learning approach to facilitate colearning and self-learning. They also intentionally focus on integration when considering the broad framework of the IBPYP and facilitating self-learning. Which T8 summarized:

> But also, that it's not that like so rigid. Like it gives it a real structure that flows along through the questions, the lines of inquiry that we're discussing in class. And that, like, we're constantly making connections between different subjects, different units of inquiry, different people, different places, and integrating that through all of our different curriculum areas, but with like, with a focus on real-life, purposeful problems and solutions.

T1, T2, T3, T4, T5, T6, T7, T8, T9, and T11 view the flexibility of the IBPYP framework as useful to their implementation of the inquiry-based learning component of the IBPYP through the intentional use of the outside environment for self-learning and making learning meaningful when implementing inquiry-based learning. T3 and T4 view field trips as a way to engage in self-learning and make learning meaningful. T4 provided an example: “So we were able to go down to the compost, composter after talking about it just once ourselves, and then get another lesson about how that works.” T1, T2, T3, T4, T5, T6, T7, T8, T9, and T11 also use outside environments to motivate students to learn, to help them draw on prior learning, and to participate in real-life experiences. For example, T6 shared:

> Using library or previously a library is a bit of a nice area I would make sure that area has couches and is like pretty much like a lounge room setup that normally would in my previous work and couches, beanbags, and little mini whiteboards. I could do little workshops, and mentor texts like a focused author, which related to inquiry, and then obviously have some of their reading strategies and so forth on the wall and our focus.

T1 further explained: "They created their own story, and I recorded them, and it was quite actually nice, so we are using outside area like this. And last year, there was a unit about weather, and we made a creative story outside."

The majority of participants view the flexibility of the IBPYP framework as a method to implement the inquiry-based learning component of the IBPYP through intentionally using learning made visible, self-learning, and making learning meaningful through hanging student work, writing students' thoughts down and displaying them, and focusing on integration. For example, T2 supported the idea of using the flexibility of the IBPYP to support students in reflecting on their learning:

> But I think if they can see like, "Oh, I really messed up in that second one, but I fixed it, and I you know, I figured out how to how to change it and make it look better." So, I try to use that as a big learning tool. You know, of course, Google; I use Google Arts and Culture a lot, and that has been like, you know, a fantastic tool for me to sort of just let them explore (*), you know, and there's music in there and culture.

T1, T2, T3, T4, T5, T6, T7, T8, and T9 also view flexibility as useful to their implementation through the intentional use of tools such as making learning meaningful, and learning made visible to inform instruction and inform students of their learning, and the intentional use of self-learning and making learning meaningful. T5, T6, and T9 offered supporting statements related to using the flexibility of the IBPYP framework to make learning meaningful while engaging in self-learning. T9 expanded on self-learning through the use of specialists related to student inquiry: “Well, I think again, just using each other, and you know, like, we've had guest speakers in that that's been organized again, we can do lots of forms online now.” Additionally, T8 expanded on the flexibility of the IBPYP and making learning meaningful:

> There's more flexibility in the unit, which I'm now I kind of realizing that I'm talking about it, like, gives you more time to do research and projects that are really open-ended. Like in my unit anyway, it seems to be like we're constantly thinking of like, using the world and how we can lean in towards helping those and get the kids to think about learning really purposely.

T3, T6, and T8 view the flexibility of room arrangement through self-learning and making sure the room is the students’, along with rewarding behavior with special spots and making learning meaningful as a method to implement inquiry-based learning. T3 shared: “Ah, oh, I guess that comes back to they get to choose where they where they read.” T3 added that you also have to trust students when facilitating self-learning; they stated: “You have to trust them. Right, you have to know that they're gonna make the right choices.”

T1, T7, and T11 view the flexibility of the IBPYP as a method to implement inquiry-based learning by differentiating instruction through making learning meaningful and self-learning through the flexibility to use student-centered instruction and special programs. T1 uses the flexibility of the IBPYP to use a special program that allows learners to learn in differentiated ways that are based on the individual choices of the student using visuals, sounds, and pictures. T7 explained that the framework enabled them to implement inquiry-based learning because it did not limit the teacher. While T11 expanded on the idea of self-learning through differentiation of resources and spaces: “Or if we use (*a specific learning space), there's access to different equipment.”

Lastly, T3 views improvements to flexibility, such as a flexible schedule that would enable them to work as a team and as a method to improve the implementation of inquiry-based learning. T3 Stated: “So yeah, some of the things I think would help me is if I could be more flexible with the schedule, work more as a team with people, definitely.” No discrepant cases were identified in the data present within the theme of flexibility.

Theme 4: Student-Centered Instructional Strategies

The fourth theme I found is student-centered instructional strategies: Primary international teachers implement inquiry-based learning by using student-centered instructional strategies that make learning meaningful, visible, and where the teacher facilitates learning so that students engage in colearning and self-learning. In response to interview questions dealing with learning made visible, making learning meaningful, self-learning, and colearning, every participant described their use of student-centered

instructional strategies as a method they use to implement inquiry-based learning within the IBPYP.

T3 viewed student-centered instruction as a method to implement inquiry-based learning by using UbD principles of planning "as a way to get started with the end in mind." T7, T8, and T9 view exploration as active student participation in learning and the use of independent learning through the use of student-centered instruction and the IBPYP's concept-based learning to make learning meaningful. T7 stated: "And, you know, each student is interested in their own learning and our own concepts." T8 agreed: "And some of them they can like link to experiences they've had or that they know exist in the world or places where they've been before."

All participants viewed student-centered instruction as a method to implement inquiry-based learning through exploring, where students make decisions about what they are going to do, which makes learning meaningful. T11 explained:

> To a certain extent, over games and just between different classes they have preferences on different types of activities as the main purpose is that they have fun and enjoy so they have input: that makes a big difference into how much they participate in the activities.

T3, T7, T8, T9, and T11 also view student-centered instruction as a method to implement inquiry-based learning through exploring based on deciding what they're going to do independently. T7 stated:

> I think that's a big purpose of like student-centered learning is them at like they're doing the guidance they're doing, what they're what they want to do, and also be

like taking that ownership of their learning. I think that's the whole purpose of those strategies.

T3 further agreed that student-centered instruction as a method to implement inquiry-based learning took place through students who “participate” in the “learning” to “make some change happen,” where students actively participate in learning.

All participants view student-centered instruction through exploration as a way to facilitate colearning and make learning meaningful when implementing inquiry-based learning. For example, T10 stated that they used colearning and classroom groups so that “students are able to collaborate in those ways almost like adults do within a workplace” so that “it's setting them up for real-life situations that they might face.” T6, T7, T8, T9, and T10 stated they used classroom groups through colearning and make learning meaningful described by T3: “So they were put into pairs or groups of three or sometimes they worked on their own, and they just worked in the room.” Which T6 agreed that “having students in small groups” and cooperating with each other “just works so well” when they are “bouncing ideas off each other” rather than the teacher using direct instruction, which enabled students to participate in colearning. T6 agreed that student-centered instruction made learning meaningful when students were permitted to “choose their groups” and were provided the “freedom to be able to go outside.” Additionally, T2 and T8 view their use of student-centered instruction to implement inquiry-based learning as students participating in teamwork to solve problems as they arise in the classroom through colearning. T2 found that they used “a lot of teamwork” to scaffold learning for students to solve problems through colearning. T8 shared:

> So always like someone on the table would be a strong writer or reader, so that they can help everybody to you know, read and understand things, you know, and always someone who's, you know, creative and yeah. So, they're like leading.

T3, T5, T7, and T8 use student-centered instruction to implement inquiry-based learning by incorporating student-based opinions and making learning meaningful. T8 explained: “And as much as they can, and like have a voice to be able to share opinions about different topics, and like have the space in their mind to think about them.” T5 shared: “What did they think the (*author) wanted the viewer to see?” as an example of how using students’ opinions from student-centered instructional strategies can aid in making learning meaningful to implement inquiry-based learning.

T6 and T11 use student-centered instruction to implement inquiry-based learning by using colearning, learning made visible, and making learning meaningful to develop skills necessary for inquiry-based learning. T6 practices knowledge-based skills related to the unit of inquiry where for example, “some questions might be based on inquiry,” and they might need “math” skills to “start the thinking process” to make learning meaningful by drawing on prior knowledge. T11 helps students to develop skills by having them “watching and observing,” utilizing learning made visible through observing their classmates.

T1, T5, T6, T7, and T9 reported that they implemented inquiry-based learning using student-centered instructional strategies through what T1 shared as “after they explore” then “they can add their own ideas” to new situations by making learning meaningful and participating in colearning by completing a group task, and through self-

learning, enabling them to transfer their knowledge. T1 expanded on this, stating that the use of student-centered instruction to implement inquiry-based learning is “so they can transfer the knowledge.” Which T5 agrees, “I think like asking students to, like make connections with the units of inquiry” aids students in developing a “deeper” understanding. Where T9 found students participate in self-learning, for example, they might “design an experiment” or “make a project.”

T7 and T11 view the outcome of using student-centered instruction to implement inquiry-based learning as that it develops students who are capable of learning independently, which they found rewarding. T7 explained: “But then you find other ways other students like taking charge, of like actually if you need help, I can help you out here I'm doing okay with my pace.” Additionally, T11 viewed the development of independent learning as an additional rewarding outcome of implementing inquiry-based learning using exploration in student-centered instruction when seeing students “playing some of the games we learn in class at break time.”

All participants view the use of student-centered instruction as a method to facilitate inquiry-based learning by making learning meaningful and engaging in colearning. T3 pointed out that to implement inquiry-based learning using student-centered instruction, students need to “know they’re important” and offered the following suggestion: “So whatever their reading, doing, and I try to make sure that they know that I think that they’re important, right.” T11 also offered the idea that student-centered instruction can be used to facilitate inquiry-based learning through colearning when students are provided the opportunity to “vote on learning activities.” Lastly, T5, T6, T7,

and T8 emphasized that they use student-centered instruction to facilitate inquiry-based learning by making learning meaningful by focusing on integration. T7 stated: “So, they've opened up to, you know, topics like that, and everything's just integrated and going into the adventure genre of like reading and writing, you know, doing it as a form of entertainment.”

T2, T3, T4, T5, T6, T7, T8, and T9 reported they use student-centered instruction to facilitate inquiry-based learning with students to cocreate the curriculum through teacher to student collaboration to make learning meaningful, whereas T9 stated teachers are “there to facilitate and just to help and support and encourage them to go into deep thinking” and the student’s role is to “question” and “go deeper.” Additionally, T6, T9, and T11 use student-centered instruction in the form of provocation as a method to make learning meaningful while implementing inquiry-based learning. For example, T6 stated: “So the main component with IB with students is trying, engagement, of course, so starting with provocations from yourself as a teacher and your surroundings in the classroom, and environment, and trying to provoke questions.” T10 agreed: “Independence, I think back to guiding students through questioning and allowing them the time and space to think and process on their own.” T2 implements inquiry-based learning using student-centered instruction through facilitation of learning using teacher to student collaboration by providing students with responsibility within the classroom of distributing and collecting “materials” and having students practice “ask three other people” before the teacher to help students to participate in inquiry-based learning.

T9, T10, and T11 implement inquiry-based learning using student-centered instruction through the facilitation of learning using teacher to student collaboration by providing students with the inquiry. T10 stated: I think that's a big difference between inquiry and non-inquiry-based learning is that you are giving them experiences rather than teaching them lessons." T9 agreed that student-centered learning facilitated independent learning and stated:

> There's lots of different ways that we can, you know, research things visually and you know, so I think the success is just to give them the independence you just give them the guidance and let them kind of find their own path that way.

T8 uses student-centered instruction by incorporating prior knowledge from family members to make learning meaningful and stated: "I think it's so useful for them to talk about it at home." At the same time, T4 was the only participant to offer an extended point of view by stating that they use student-centered instruction to reflect on their practice to determine "what is best" for their "students," in turn making learning meaningful while implementing inquiry-based learning.

T2, T5, T7, and T8 expressed some difficulties related to student-centered instruction, where T2 found it "difficult to provide enough inquiry" experiences for students and to facilitate colearning. T5 found it difficult to integrate the unit of inquiry into every subject and found the language of the PYP as inaccessible to students, and T8 found it difficult to narrow down the broad concepts of inquiry-based learning within the IBPYP. Another difficulty they found was that not every lesson is interesting to students,

causing some struggle in making learning meaningful throughout implementing inquiry-based learning.

T1, T3, T6, and T8 views the teacher as responsible for including students with needs through colearning and making learning meaningful, but one participant found motor skills as a learning need they personally struggled with. T3 supports children learning English: “And if a child is learning English, we translate everything.” T6 also supports students with needs by using learning made visible and placing the “keywords” on their “I’m thinking” or “I’m wondering” walls. T8 also tries to “simplify the resources” and “give them the research tools” in advance so that students learning English are still able to participate in the inquiry-based learning component of the IBPYP. While T3 additionally connected to students’ culture through translanguaging “with their own language” to make learning meaningful. T1 was an outlier, discussed in the discrepant cases below.

Lastly, T2, T3, T6, and T9 view the use of student-centered instruction as a tool to implement inquiry-based learning through classroom management of social-emotional learning, where T3 directs students through “scope of choice,” and T2 encourages students, scaffolding learning by colearning, and “focusing on classroom roles,” procedures, and “routines” using choice action, and T9 uses “showing them” as a method of learning made visible. T6 views the use of student-centered instruction as a method of implementing inquiry-based learning through classroom management that involves self-learning. T6 explained, “Like the learner profiles and the learner attitudes and sort of can try and use that use the environment to good so there's misbehavior in a specialist class.”

Discrepant data arose in questions related to colearning that were not found within the literature related to the REA. These data arose when participants were asked what I would see happening in relation to accessing the learner's prior knowledge and using that information during times of instruction and learning activities. T3 views students with needs as being able to participate in inquiry-based learning using student-centered instruction through translation. T3 explained:

> And if a child is learning English, we translate everything. There's a way try to make sure that that child understands as much as we can, and that comes back to your question before about collaboration that I love to see the children they know that they need to help the kids who are learning English. You know, they don't even have to ask after a while or yeah, and they use Google Translate.

While T1 views students with needs related to motor skills as something they cannot overcome when facilitating inquiry-based learning through colearning and shared: "So, he should have a struggling with the motor skills, or something, so it's beyond me actually."

Additional unexpected findings in the data arose when participants were asked about how they guide students and enable them to engage in student-centered instructional activities and how they use formative assessments, which relate to making learning meaningful. T3 uses translanguaging as a strategy to facilitate colearning and access prior knowledge to make learning meaningful and stated: "Because of translanguaging. So, I really like it a lot as a strategy. I think the translanguaging helps a lot."

Another unexpected finding emerged related to the impact of COVID-19 on implementing inquiry-based learning when participants regarding questions related to colearning with T6 stating:

> Hard at the moment being with COVID has been a little bit tricky with group work as you've probably heard some responses. But, generally in the past and where I've where I can try and having students in working in small groups to that cooperation. It just works so well when they're delivering a message to each other, or they're bouncing ideas off each other than just having me teach from the front, and that just doesn't work to the best effect.

T7 agreed that students "before COVID" were "in groups," and T9 agreed: "With the whole COVID and them not being able to kind of do a lot of group works at group work and the whole social distancing thing, which is kind of hard to maintain."

Lastly, one outlier existed regarding questions about colearning and self-learning that did not align with the REA. T2 brought up the concept of behavior and its role in implementing inquiry-based learning within the IBPYP. T2 stated:

> I've had a lot of emphasis on like, routines, which has to be sort of practiced over and over and over again: Which I suppose is a good thing if that if that's you know, directed towards inquiry, but most of its directed to games and chats and things like this.

Theme 5: Maintaining Learner-Centered Focus

The fifth theme I found is maintaining learner-centered focus: Primary international teachers view their implementation of inquiry-based learning as learner-

centered, with students taking an active role in their learning and teachers taking an active role in student learning. In response to interview questions dealing with learning made visible, making learning meaningful, self-learning, and colearning, teachers 1- 11 described their use of their implementation of inquiry-based learning within the IBPYP as learner-centered.

T3, T5, T7, and T8 view the following implementation strategies as helpful to implement inquiry-based learning that they view as learner-centered: T3 helps kids understand and said, “I show them how;” and T7 incorporates “feedback as much as possible” to inform students of their learning so that they can demonstrate growth over time. T3 added, “You know, it's like a seed that's been planted, and hopefully through, you know, through IB, they'll come back to it again.” T5 further agreed they “try and find ways to maybe help that student” to “achieve a point where they're sort of happy with their work” to make learning meaningful. T5 and T7 hang up student work for learning made visible. For example, T7 shared: “I mean, those are my anchor charts would be incorporating our student learning put up all over the classroom, student questions teacher questions, it's that's where the learning is displayed.” T8 agreed: “And then we tend to do like a kind of gradual display, like a working wall.” T9 and T10 added that they integrate with other subjects as a strategy to make learning meaningful, with T9 integrating with “maths,” which they tie to “their real-life.” T10 additionally agreed and included a summary of how the implementation strategies they use to implement inquiry-based learning are learner-centered, with students learning through learning made visible

across content areas within the inquiry-based learning component of the IBPYP. T10 summarized:

> Students often need to hear the same thing from multiple people in order for it to really sink in and internalize as they're learning. Which is one of the wonderful things about PYP because it gives teachers a structure and sort of a guide and this overarching theme of the attributes such as learner profile, key concepts, and transdisciplinary theme in order to help students make those connections.

T3, T4, T5, T6, T7, T8, T9, T10, and T11 view their implementation of inquiry-based learning as learner-centered through their use of formative assessment. T3, T7, T8, T9, and T10 view their implementation of inquiry-based learning as learner-centered through their use of viewing learning as formative and as a process that can be adjusted through provocation, as described by T6: “Yeah, it would be the provocation to make sure it's we’re doing some studies on studies, just like research into like, how the how the brain can operate from short term to long term memory.” T7 and T11 added that their implementation of inquiry-based learning is learner-centered and formative through learning made visible with the teacher observing. T7 shared: “And then you can see whether they just stand there and look confused of if they try and like watch other students.” T10 and T11 added that it is also formative through colearning. T10 expressed that students learn through “experiences” scaffolded by the teacher, enabling students to “remember and they gain their learning better.” T11 agreed that they scaffold interactions between students to inform students of their learning by asking questions like "Hey, how can you get more involved in the game or what kind of strategy is going to help?” T4, T5,

T7, T8, T9, and T11 agreed that their implementation of inquiry-based learning is learner-centered and formative through making learning meaningful. T8 starts with building on prior knowledge and tries to "figure out what they know" though "some sort of like mini project in the beginning where they're kind of thinking about the rest of the project to come." T6 added that their implementation of inquiry-based learning is learner-centered and formative through self-learning opportunities within the classroom environment. For example, T6 posts the "inquiry, and then it spreads out into the language and math, which all link in" to the wall "on the environment."

T4, T5, T7, T8, T9, and T10 view their implementation of inquiry-based learning as learner-centered and formative, with students continuously solving problems. T7 shared: "I think that's a big thing with the PYP and inquiry-based learning, and also finding ways in different ways of figuring out problems like real-life problems." T8 and T9 scaffolded instruction by making learning meaningful; T8 provided the following example: "It was really nice, and we talked about like history, and the reasons why people migrated in the past and now and how they're similar and different." T4, T5, T7, T8, T9, and T10 provide students opportunities to participate in colearning, with T4 having "a different section set up in the classroom" for students to keep students "continuously solving problems," and T5 has students working in "small groups" and "working in pairs" to problem solve. T7 stated: "I think that's a big thing with the PYP and inquiry-based learning, and also finding ways in different ways of figuring out problems like real-life problems." T8 agreed that students are often "solving problems"

together in their class, along with T10, who found that students are “developing the ability to solve problems themselves, which is really cool, and really helpful.”

T4, T6, T7, and T8 views their implementation of inquiry-based learning as learner-centered and formative through the use of visual thinking maps that make learning visible and make learning meaningful. T4 stated:

> So, something like a "See, Think, Wonder" or a 3-2-1 chart. Or just different things to them to think about what they already know, or what they already know what we're talking about KWLS, what they already know what we're, what they want to know or what they've learned or something that they want to continue to learn more about.

Additionally, T4, T6, T8, and T9 view their implementation of inquiry-based learning as learner-centered and formative through the development of skills that enable students to participate in colearning and they scaffolded through making learning meaningful, where learning skills are continuously growing. T6 stated: “Good conversations, and then note-taking in their book with some of those visible thinking routines.” Where T4, T8, and T9 further assessed students through summative assessments as T4 shared “at the end of the week, we'll have some summative assessment on that as well” or as T9 reported at the “end of a project” to demonstrate growth over time. T8 agreed: “Then I usually get the kids to do some sort of assessment at the end of the project.”

T3, T6, and T10 views their implementation of inquiry-based learning as learner-centered and formative to show students’ progression of learning and to add to existing prior knowledge of students through the use of a wonder wall; for example, T6 stated:

> So, what I try and do in the classroom is lots of active learning, which is nice. And trying to have the kids work on display, keeping out their, what they're doing, thinking of like, obviously having a wonder wall having some small questions, having some big questions and seeing if that gets answered along the way, and sort of facilitate that with them.

T6 used a "wonder wall" in their previous school as a "space for students" to "write something down that they thought was really important for their learning." T3 agreed, stating they use a "Wonder Wall" for "the provocation" and for reflections. T3 shared: "I like to reflect and come back to that Wonder wall at the end of the unit, and I also like the kids to write the kids write the lines of inquiry and the central idea;" which is a reflective process. T3 also uses the Wonder Wall to scaffold colearning activities by having students "pair up" to make learning meaningful "because then they have more ownership." Additionally, T4 and T6 view the use of learner-centered reflection as a method to implement inquiry-based learning by reflecting on the unit of inquiry board where learning is made visible. T4 shared: "Or so we'll have our transdisciplinary theme or our, our key concepts, they're all there, and as we're going through the things that we've learned, those things are going on that board as well."

T1, T5, T6, T7, T8, T9, T10, and T11 view their implementation of inquiry-based learning as learner-centered through their use of reflection throughout the inquiry, which T1 takes "notes about their prior knowledge" and is "observing, documenting the learning process over time" while having students complete a "reflection" form about that T1 "created." T5 has students reflect on the process through "brainstorms mind maps"

and has students identify how they "came to their conclusions, how they, you know, the different experiments they did" and what worked and "didn't work" and "how did they fix it." Which T6, T7, T8, T9, T10, and T11 agreed with; for example, T8 added "so they did like some rubrics and things and then they we all wrote down like next steps like what do we want to do in our next project," demonstrating that students are reflecting throughout the inquiry-based learning component of the IBPYP in a learner-centered format.

T4, T5, T6, T10, and T11 view the use of learner-centered reflection as a method to implement inquiry-based learning by helping students to think about what they already know. T5 starts with having students ask, "what do I know already know?" and T6 asks students to recall from their "own past" to make learning meaningful. While T10 uses "a preassessment" to record what "students already know." T11 has students reflect on what they know from what students "tried last week" using learning made visible and has students reflect on challenge by creating a "new plan" or "a new strategy" collaboratively: engaging in colearning.

T5 and T7 view the use of learner-centered reflection as a method to implement inquiry-based learning through student reflection, where they use a growth mindset and view mistakes as something to learn from. T5 stated:

> And yeah, I hope that the lessons are kind of that the students feel like they have like the support to sort of make mistakes and realize that like making mistakes is part of you know, being in school like it's not actually should be seen as that thing I think it should be seen as something to learn from.

Additionally, T4 views the use of learner-centered reflection and formative learning as methods to implement inquiry-based learning through student reflection, where students are provided opportunities to extend their learning or make corrections to mistakes by the teacher marking in two different colors for learning made visible. T4 shared:

> So, they know that the green means that there's something that needs to be fixed or something that we need to change or reflect back on, and I might highlight that and then put a note underneath and highlight the note that I want them to change in green as well.

T9 views the use of learner-centered reflection as a method to implement inquiry-based learning through student reflection on their own work that the teacher hangs up around the room for students to see their learning journey over time. T9 stated:

> You know, it's very graphic as far as eye-catching, you know, and it helps their learning, and it's there and it links into, so what they're knowing and what they should know, and it helps them support them, rather than just pointless pretty displays on the wall.

Additionally, T5, T6, and T10 view the use of learner-centered reflection as a method to implement inquiry-based learning through using tools like “Seesaw” and “Toddle” to engage in reflection on their instruction, to meet students where they are, and for students to see their work and receive feedback on their learning. T10 stated:

> They also have some, this is the wonder of online learning platforms such as seesaw or Toddle, where I can set a student template, and they can complete the

> template with whatever activity that we're doing and showcase their learning through some sort of written or drawing activity.

T2, T3, T9, T10, and T11 view their implementation of inquiry-based learning as learner-centered. T2 and T9 encourage students to learn independently through T2 giving "them some questions to sort of think about" that are related to their prior knowledge and T9 added, "I'd say the thing with the PYP to encourage more independence." T3 encourages students and stated, "I can show them that I trust them" while carefully scaffolding learning to give "the kids" independence, but "not too much independence" and advises "you know, primary teachers, we have to be very careful." While T2 encourages students to search for solutions to problems, while not always showing them to build on their prior learning and stated:

> I don't think I always need to show them and I also encourage them after I do a certain demo like that, I say, "look, here's what you can type into your YouTube search and you can look at other videos that show the same process.

Lastly, T11 encourages through colearning by challenging them to "think" and strategize.

T6 views their implementation of inquiry-based learning as learner-centered, where students have agency that the teacher ensures meets students where they are at to move them forward; and the teacher provides provocation to drive the inquiry-based learning forward. T6 stated:

> That how the learning journey situation sometimes you might not have a whole charity drive or you've haven't gone and done a big action, where it's putting posters up you've just done something in your past your family members

> something and it's really it's been.

T7 further agreed that their implementation of inquiry-based learning is learner-centered, where students have agency over their actions and how they participate in their learning. T7 shared:

> Agency. I think that's probably the like, cornerstone of the PYP is are those two things is agency and just being an inquirer and knowing and then going through that every day, and it's a good way to build open-mindedness, and it's a good way to adapt to new newer environments.

T4, T7, and T9 view their implementation of inquiry-based learning as learner-centered. T4 shared "they will teach each other how to do the problem" through "random pairing" and specific paring for "reading task where I know that I need to pair the students up with a higher achieving student." T4, T7, and T9 views their implementation of inquiry-based learning as learner-centered, where students are capable of teaching other through self-learning, learning made visible, and colearning. T9 explained:

> I mean, now, you know, learning from different classes, different grade levels, the lower ones can teach, you know, they can teach even Grade 5 a lot, you know, it can kind of sets the bar for some learning, you know, and any school to go up into the higher levels that might come up and see you one day.

Additionally, T7 and T9 found the ability of students to teach each other as a rewarding outcome of inquiry-based learning that is learner-centered. T7 shared: "But then you find other ways other students like taking charge, find other ways other students like taking

charge of like actually if you need help, I can help you out here I'm doing okay with my pace."

T5, T8, T9, and T10 views their use of learner-centered implementation of inquiry-based learning as needing access to resources. T9 pointed out, "we have to just make up our own resources," and while students are participating in "inquiry-based learning," "you need to kind of provide some sorts of resources to go alongside that." T5 agreed and added:

> I would love it if we could have like, you know, display boards where we could have projects as they're kind of progressing, not just like, oh, this is an amazing, finished piece, but also like this is you know, how the unit's kind of progressing.

T8 further explained: "So like access to, you know, maybe websites and subscriptions that you have to pay for that are really useful for the kids." There were no discrepant cases in the data related to the theme of maintaining a learner-centered focus.

Theme 6: Limitations to Implementation

The sixth theme I found is limitations to implementation: Primary international teachers view challenges and difficulties that restrict and limit their ability to implement inquiry-based learning within the IBPYP. In response to interview questions dealing with learning made visible, making learning meaningful, self-learning, and colearning, teachers 1- 7 and 9-11 described their implementation of inquiry-based learning within the IBPYP as having limitations.

T1, T3, T5, T6, T9, and T11 view their implementation of inquiry-based learning as limited by challenges related to the system's schedule, specifically time to

collaboratively plan with other teachers and to implement the inquiry-based learning component. T3 described their collaborative planning as “I feel like I work in isolation” and that “you’re really on your own” and T5 agreed that “it's up to us to make, you know, to find the time and our schedules.” T1 further explained how time impacted their ability to fully implement inquiry-based learning as limited by time. T1 shared: “Six weeks in the end of 6 weeks, I think that children start to learn about the central idea, but then they will develop a new idea, or they will create something, you just finished.” T1 also found that a lack of following through on meetings and what did or did not work with implementing the inquiry-based learning component of the IBPYP limited their implementation of inquiry-based learning. T1 shared: “Okay, so we see each other maybe from year to year, not a lot, but we are not discussing, so where are the ongoing meetings?”

T11 stated that their “biggest challenge is” that they “teach so many different grades,” which makes it so they “don't remember” the “central idea from grade to grade.” T9 found that the school system not being flexible as a challenge and that the school is not “always set up the best to be able to” implement inquiry-based learning. Additionally, teachers described challenges related to the system itself and learning made visible and availability of resources, such as not having a room. T1 shared, “It's very, very, very, very bad that most of them even don't have a classroom.” T2 also agreed and said, “because I share it with another teacher” and the room is “so small” they can’t implement inquiry-based learning the way they would like to through “stations.” T11 added, “there's not many resources out there.” T2 found learning made visible challenging because, in

some cases, “the learning cannot be shown in their work.” And T11 shared that “trying to do formative assessments is quite challenging” because students are not permitted to bring devices to their lesson, so they have to “print out a load of things and then try to carry them back.”

T2 views their implementation of inquiry-based learning as limited by challenges related to student behavior and that it takes away from their implementation of the inquiry-based learning component of the IBPYP. T2 shared:

> I've had a lot of emphasis on like, routines, which has to be sort of practiced over and over and over again: Which I suppose is a good thing if that if that's you know, directed towards inquiry, but most of it's directed to games and chats and things like this.

T2 and T3 view their implementation of inquiry-based learning as limited by challenges presented by the management of the school’s supplies, with T2 pointing out that “the school is quite stingy” and they do not receive “supplies in a timely manner” when they are ordered. Additionally, class sizes caused challenges with T2 sharing that they “have 18 in a room that’s probably meant for 16,” and what is considered acceptable within the school culture. While T3 shared that some teachers struggled with the way “they're managed the admin who manages the school” and shared that people “cannot work at a school where it's so blatantly obvious that the money is being taken” rather, than going back into the school towards resources.

T3 views their implementation of inquiry-based learning as limited by challenges with taking field trips and the impact COVID-19 made so, “we just can't go anywhere

right now" to engage in self-learning. T3 has had challenges presented by partners who "who hated" field trips. T4 views their implementation of inquiry-based learning as limited by challenges related to the time required to determine what is best for students within the broad framework of the IBPYP. T4 stated:

> Because it's a great framework, but at the same time, it's so broad that you have to figure out how to whittle it down. And so, it takes, I think, just more time to really sit and think about, okay, what is going to be the best for my students here?

T10 views their implementation of inquiry-based learning as limited by difficulties related to making sense of the language of the PYP in order to understand how the inquiry-based learning component fits when implementing inquiry-based learning. T10 stated:

> The most difficult time I've had with PYP was when I was first starting out, and there were all these words the jargon that the IB has set up for the PYP structure really is a learning curve. To understand what a transdisciplinary theme is and how it works within the structures of the IB.

T2, T5 view their implementation of inquiry-based learning as limited by difficulties specific to specialists who are teaching the PYP and middle school at the same time and who teach multiple age groups. T5 shared:

> Anything I think, I think you know, like I was saying, you know, we're teaching a very, like wide age range. I think like our timetables in the school are really heavy. And there's kind of no consideration for like the fact that one minute you're

almost running like a playgroup, and the next minute you're teaching al- like almost secondary school children.

T5 shared that they have “no time or support” and “no teaching assistants,” which they view as a difficulty that limits their implementation of inquiry-based learning. T6 also views their implementation of inquiry-based learning as limited by difficulties in supporting students with needs when “students don't have the language base, to then go into further conceptual, some of these conceptual vocabulary” and they “try and get that message across differently without that language, maybe using a different form.”

Discrepant cases arose in the theme of limitations, related to self-learning and making learning meaningful. T3 views their implementation as limited by the elitism of the IB in the private international school setting that perpetuates “classism” and an attitude of purchasing “cultural currency” from parents. T3 also views teachers and administrators from all over the world applying what they know and “comparing their different styles” of teaching rather than uniting under one shared vision as a limitation to inquiry-based learning.

Another unexpected finding was that T1 viewed the following as future ways to combat some of the barriers that limit implementation: the school to “think of the student as tomorrow’s adult” and “provide teacher agency” in their implementation of inquiry-based learning.

Summary

In Chapter 4, I described the setting, participants personal or organizational conditions that may have influenced the interpretation of the study results; identified the

participant characteristics; explained and described the number of participants, data collection identified by: procedures, instrument used, how data were recorded, variation in what was presented in Chapter 3, and any unusual circumstances encountered. I also included my data analysis from deductive a priori coding to inductive in vivo coding, a detailed explanation of how I moved from less inclusive to more inclusive categories and themes, and represented discrepant cases and how they factored into the analysis. Then I reported on how I ensured trustworthiness throughout this study's data collection and data analysis process. I concluded with the results and findings of the study.

My findings suggest that the way primary international teachers plan units and utilize flexibility are methods they use to implement inquiry-based learning within the IBPYP. My findings further suggest that the way primary international teachers plan units requires training from IBPYP workshops, colleagues, and training to help children who are learning English. My findings also suggest that primary international teachers utilize student-centered instructional strategies where the teacher is the guide and facilitator of learning, is reflective about their practices, encourages inquiry and collaboration, and cocreates the unit of inquiry with students. Additionally, the findings suggest primary international teachers utilize learner-centered instructional strategies to implement inquiry-based learning within the IBPYP by students taking an active role as a participant in their own learning scaffolded by the teacher through the use of formative assessment to inform students of the learning process by teaching students how to assess their strengths and weaknesses through reflection; through teacher questioning, the teacher providing opportunities to ask questions and to teach peers; and by the teacher

providing the student time to demonstrate growth over time. Lastly, the findings suggest that limitations related to challenges and difficulties exist that limit the implementation of inquiry-based learning related to learning made visible, making learning meaningful, colearning, the broadness of the IBPYP framework, teaching a wide range of ages, students with needs, and school structural and procedural systems. In the remaining chapter, I will discuss my interpretation of the findings, the limitations of my study, recommendations for future studies based on the strengths and limitations of my study, and the implications of the results of my study for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this basic qualitative study was to explore the perspectives that primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP. This study was conducted using a basic qualitative methodology to discover international primary teachers' perspectives about their implementation of inquiry-based learning within the IBPYP. This study was conducted because there is a lack of understanding of primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP (Mutammimah et al., 2019) and a need to better understand the complexity of the IBPYP around the world and according to La Porte (2016) future IBPYP qualitative studies should be conducted on instructional strategies. This study was also conducted to fill the gap that Ledger (2017) identified, with the IBPYP being the least researched of the IB programs. I used Malaguzzi's (1993) REA as the conceptual framework for this study. This study will be used to inform and guide practical action, which is the purpose of a basic qualitative study (Ravitch & Carl, 2016).

I conducted this study using the basic qualitative method aligned to the REA framework to identify the perspectives that primary international teachers have about their implementation of inquiry-based learning within the IPBYP. This study included 11 purposefully sampled PreK through Grade 5 IBPYP teachers in one private accredited IBPYP international school system within the IBAEM region. According to Ravitch and Carl (2016), saturation is reached when one no longer finds emergent themes in the data

collection. According to Baker et al. (2012), saturation can be achieved within eight to 11 semistructured interviews. The key findings reported in this study were based on participants' perspectives aligned to the REA and in their own words, organized by codes, categories, subthemes, and emerging themes.

The data analysis revealed six themes with common codes aligned to the REA and common codes in the language of the participants aligned to categories and emergent themes that answered the research question: What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IBPYP? The key themes that I identified from conducting this study were the following: (a) plan units, (b) training needed, (c) flexibility, (d) student-centered instruction strategies, (e) maintaining a learner-centered focus, and (f) limitations of implementation.

The first finding is that primary international teachers view the way that they plan units as a key method to implement inquiry-based learning. An additional finding that I identified related to plan units was that primary international teachers view teacher training as necessary and as a first step to being successful at implementing the inquiry-based learning component of the IBPYP. A third main finding was that primary international teachers view the flexibility of the IBPYP framework as a core component of the implementation of inquiry-based learning through the intentional use of various tools, intentional decisions by the teacher related to learning made visible, self-learning, the use of the outside environment, and making learning meaningful. The fourth main finding was that primary international teachers view student-centered instruction as a method to implement inquiry-based learning by making learning meaningful, colearning,

self-learning, and learning made visible. The fifth main finding was that primary international teachers view their implementation of inquiry-based learning as learner centered, where students take an active role in their learning and teacher-to-student collaboration as a method to implement inquiry-based learning. Lastly, the sixth finding that I identified was that primary international teachers view their implementation of inquiry-based learning as limited by various difficulties and challenges related to learning made visible, making learning meaningful, colearning, the broadness of the IBPYP framework, teaching a wide range of ages, students with needs, and school structural and procedural systems. This last finding also included the unexpected finding that primary international teachers view their implementation of inquiry-based learning as limited by problems centered around the elitism of the IB.

Interpretation of the Findings

The results of this study have added to knowledge and literature about the inquiry-based learning component of the IBPYP by providing data on teachers' perspectives and experiences. Teachers use a variety of educational strategies, pedagogy techniques, and tools to plan for and to implement inquiry-based learning within the IBPYP. Teachers also identified challenges and difficulties that pose limitations to their implementation of inquiry-based learning. The current literature identified inquiry-based instruction as a constructivist paradigm that requires various levels of scaffolding and feedback through assessment and documentation to aid learners in developing higher order thinking skills (Brown, 2018; Meškauskienė & Guoba, 2016; Netcoh, 2017; Qarareh, 2016). Previous studies have highlighted that the inquiry-based learning

component of the IBPYP takes a holistic approach (Gurkan, 2021) and requires teacher training to develop inquiry-based learning that challenges students to think from a global perspective (Lau et al., 2018). Additionally, Tugluk (2020) highlighted the outcomes of implementation of inquiry-based learning within the IBPYP as able to increase students' science skills, with Lau et al. (2018) noting that it developed students' confidence levels in Grades 3, 4, and 5, regardless of gender.

However, Ledger (2017) noted that the IBPYP remains the least researched of the IB programs, with Twigg's (2010) request that researchers need to conduct additional in-depth studies on teachers' practices, values, and beliefs for successful inquiry-based teaching in the IBPYP within other schools to focus on "generalizable data pertaining to influences promoting inquiry-based teaching-learning pedagogies" (p. 57) going largely unanswered. Ayyıldız and Uzumcu (2016), La Porte (2016), Lochmiller et al. (2016), and Mutammimah et al. (2019) found that few studies have been conducted that have examined the implementation of the IBPYP's inquiry-based learning. This study adds to the current literature by demonstrating that teachers have a set of best practices and pedagogical needs when they are just beginning implementation and have struggled due to challenges and difficulties that limit their implementation of inquiry-based learning. In the following section, I interpret the findings compared with the REA conceptual framework and peer-reviewed literature described in Chapter 2. The section is organized by theme.

Theme 1: Plan Units

The findings in this study confirmed that primary international teachers view the way that they plan units as a key method to implement inquiry-based learning. These findings are similar to previous literature that Gurkan (2021) reported, where teachers are constantly planning inquiry-based teaching by transforming from a transdisciplinary curriculum before, during, and after the process. The findings in this study support the IBO (2017) learner profiles where participants view the way that they plan by using the IB learner profile as a way to implement inquiry-based learning. This finding further supports Dickson et al. (2018), who stated that the IBO's philosophy develops students' values, academic skills, and disciplinary knowledge, and the IBO (2017) reported that the learner profiles represent the characteristics of students in their ability to enact the mission of the IBO to make the world a better place through more than academic accomplishments. The finding that primary international teachers view planning as taking place through collaboration between elementary and secondary students to integrate with other subjects supports the literature surrounding popular reasons to implement IB programs. Dickson et al. reported that the most popular reasons that schools implement the IB are its pedagogy, holistic approach, philosophy, and interdisciplinary teaching. The findings confirm the literature indicating that teachers view the way that they plan units as learning from other teachers as essential to their implementation of inquiry-based learning and as taking place through collaboration with colleagues, and they also view a need for more time to collaboratively plan. This finding confirms the work of Sperandio and Kong (2018), who found that teachers perceived that the adoption of the IBPYP

improved their pedagogical knowledge and practices through ongoing teacher learning as reflection and teacher collaboration and Dickson et al. (2018), who found that collaboration in IB programs is essential, but that collaboration is not always realized as essential, and future research should be conducted to confirm this hypothesis.

The findings in this study add to the literature by presenting new data demonstrating that primary international teachers view the way that they plan units as having additional essential components: utilizing understanding UbD and planning with the end in mind, chunking lessons to scaffold learning, using tools such as Toddle, and planning lessons to be combined with language arts and math.

Theme 2: Training Needed

The findings confirm that primary international teachers view teacher training as necessary and as a first step toward being successful at implementing the inquiry-based learning component of the IBPYP. They support Lochmiller et al. (2016), who found that teachers noted the challenges of moving from a traditional school model to an IBPYP philosophy and a need for professional support throughout their individual transition. The results of this study support current literature by emphasizing that teacher training and ongoing professional development are needed to help teachers implement the inquiry-based learning component of the IBPYP. The results also support the work of Buabeng and Akuamoah-Boateng (2019), who found that teachers require ongoing professional training related to inquiry-based instructional methods, whereas Lau et al. (2018) stated that teacher training was required to develop inquiry-based learning within the IBPYP, and Savage and Drake (2017) found that criticism of the IBPYP centered around poor

implementation of the IBPYP and a need for teacher training. The findings are similar to those of Buabeng and Akuamoah-Boateng, Lau et al. (2018), and Savage and Drake (2017) in agreement that primary international teachers view teacher training as necessary and focused on the essential elements of the IBPYP.

However, the findings add to the literature where primary international teachers note that training must be done in an environment that provides space to make mistakes while learning and implements accountability for the knowledge once teachers are proficient at implementing the inquiry-based learning component of the IBPYP. Additionally, this study adds to the literature by presenting new data that demonstrate that teachers require an environment that provides space and accountability as necessary for implementing inquiry-based learning within the IBPYP.

Theme 3: Flexibility

The findings in this study confirmed that primary international teachers view the flexibility of the IBPYP framework as a core component of the implementation of inquiry-based learning through the intentional use of various tools and intentional decisions by the teacher related to learning made visible. This finding supports the findings of multiple studies conducted by Blagojevich and Garthwait (2001); Brown (2018); Edwards (2003); Elliott (2005); Malaguzzi (1993); and Morrissey et al. (2014), with documentation as a key method to assess student learning and understanding within the REA and done through teacher observation in a variety of ways: note-taking, photographs, and recordings of group discussion and play. The findings in this study confirm that primary international teachers view the flexibility of the IBPYP framework

as a method for implementation of inquiry-based learning through intentional self-learning, the use of the outside environment, making learning meaningful, special spots for students, giving children room to facilitate colearning, using differentiation to make learning meaningful, and differentiating for student-centered learning. This finding supported the IBO (2020) and Malaguzzi (1993) by indicating that inquiry could take place in many locations with open-ended time frames and a flexible process of inquiry, as well as through teachers' use of inquiry to record and help students learn through their own interests, not a prescribed set of standards.

This study adds to the literature by presenting new data that demonstrate that teachers view the flexibility of the IBPYP framework as enabling them to differentiate for student-centered learning. Additionally, this study adds to the literature by presenting new data that demonstrate that primary international teachers view that flexibility could be improved by applying it to the school system's schedule and providing time for working as a team.

Theme 4: Student-Centered Instructional Strategies

The findings in this study confirmed that primary international teachers implement inquiry-based learning by using student-centered instructional strategies that make learning meaningful and visible, where the teacher facilitates learning so that students engage in colearning and self-learning. Netcoh (2017) and Van Uum et al. (2017) identified choice, boundaries, and rigor as challenges related to the implementation of inquiry-based learning. The findings in this study add to the literature: Student-centered instruction is a method that primary international teachers use to

facilitate inquiry-based learning. It is based on what is best for students and involves exploration through teamwork and decision making, encouraging the student, collaborating with students, guidance through classroom management of social-emotional learning, and choice action as a method for implementing inquiry-based learning. Previous researchers have stated that the IBPYP-taught curriculum supports inquiry and requires a balance of perceptions related to choice and academic rigor to enable students to actively participate in their learning and construct meaning from the world around them and be assessed using assessment methods that serve as powerful motivators for choosing learning strategies and approaches (Lee & Choi, 2017; Netcoh, 2017). This finding further supports the current literature where multiple researchers have found that during inquiry-based learning age and grade level have no bearing on the guidance provided; however, the guidance provided should be based on learners' topical knowledge or familiarity with inquiry skills and the teacher-to-student ratio (Harris, 2017; Lazonder & Harmsen, 2016).

The findings in this study confirm that primary international teachers view their use of student-centered instruction through learning made visible and using assessment to inform students as a method for implementing inquiry-based learning. This finding additionally supports the work of previous researchers who have reported on the connection between the IBPYP and the REA and who have stated that documentation is a key method to assess student learning and understanding within the REA and done through teacher observation in a variety of ways: note-taking, photographs, and recordings of group discussion and play (Blagojevich & Garthwait, 2001, Brown, 2018;

Edwards, 2003; Elliott, 2005; Malaguzzi, 1993). The findings support the literature indicating that primary international teachers view their implementation of inquiry-based learning as student-centered, where students explore through making decisions about what they are going to do and participate in learning by teaching each other, through classroom groups, and student-based opinions enable students to transfer their knowledge through the development of skills necessary for inquiry-based learning to explore independently and participate in concept-based learning. This finding supports the reported connection that the inquiry-based learning component utilizes the REA, where Malaguzzi (1993) stated that children construct their knowledge through self-learning and colearning, and Brown (2018) compared the REA to the ideas of constructivist learning, where children create and construct their own learning based upon their lived experiences and what others have experienced around them.

Additionally, this study adds to the literature by presenting new data that extend the findings of Steffen and Bueno-Villaverde (2018) and Savage and Drake (2017), specifically the finding that teachers use student-centered instruction to guide students with a focus on integration and connecting to each other's culture through translanguaging to scaffold and guide students in their active learning as a key component of the implementation of inquiry-based learning. This study builds on the literature of Steffen and Bueno-Villaverde, who found that the IBPYP is known for developing inquiry-based thinking and learning due to its transdisciplinary themes, and the findings of Savage and Drake (2017), who reported that inquiry-based learning was supported with a flexible framework that is transportable to different contexts and

cultures. This study adds to the literature by presenting new data that indicate that primary international teachers view students with needs as being able to participate in inquiry-based learning through teacher facilitation through teacher-to-student collaboration and using translation. The findings in this study further expand on the literature by presenting data that explain that teachers use student-centered instruction to guide students using UbD to implement inquiry-based learning. Lastly, the findings in this study add to the literature related to outcomes by presenting data where teachers view their implementation of inquiry-based learning as student-centered instruction rewarding when students explore and teach each other.

Theme 5: Maintaining Learner-Centered Focus

The findings in this study confirmed that primary international teachers view their implementation of inquiry-based learning as learner-centered, where students take an active role in their learning, as well as teacher to student collaboration as a method to implement inquiry-based learning. This finding also supports the reported connection that the inquiry-based learning component utilizes Malaguzzi's (1993) REA framework, where he proposed that children construct knowledge through self-learning, and colearning through the support of interactive experiences that are scaffolded through adults to produce both cognitive dissonance and cognitive growth along with social development of intelligence and skills for collaboration and problem-solving. The findings add to the current literature where Brown (2018); Elliott (2205); and Malaguzzi found that the REA to teaching is one where teachers take the role of colearners and enable children to take control of their learning through projects where Edwards (2203);

and Malaguzzi stated it is accomplished through the support of teachers which Lau et al. (2018) found required students engaging actively in their own learning (Lau et al., 2018). The findings in this study confirm that teachers view the use of learner-centered implementation strategies such as showing students so they understand and can have time to engage in the learning process along with the use of formative assessment and use of a formative Wonder Wall for reflections, through teacher provided feedback with visual cues of color-coding, viewing mistakes as something to learn from, and ability to demonstrate growth over time provided through continuously solving problems to implement inquiry-based learning. This finding supports the literature of multiple researchers Harris (2017); Hitt and Smith (2017); Lazonder and Harmsen (2016); and Van Uum et al. (2017), who reported that scaffolding, modeling, and guidance were essential to students developing the skills necessary to accomplish tasks and to facilitate inquiry-based learning.

The findings confirm that primary international teachers view their implementation of inquiry-based learning as learner-centered through the use of reflection throughout the inquiry to scaffold and guide students in their active learning used in inquiry-based learning. These findings support the literature that inquiry-based instruction falls under the constructivist paradigm and requires various levels of scaffolding and feedback through assessment and documentation to aid learners in developing higher-order thinking skills (Brown, 2018; Meškauskienė & Guoba, 2016; Netcoh, 2017; Qarareh, 2016). The findings confirm that primary international teachers view their implementation of inquiry-based learning as learner-centered and assessing

final skills through summative assessment. This finding supports the description the IBO (2020h) provided related to implementing the full IBPYP that summative assessment strategies range from the mastering of skills, the development of positive attitudes, and the ability to take responsibility. This finding also supports Meškauskienė and Guoba who found that maintaining a variety of assessment and self-assessment strategies that are meaningful can increase adolescent self-esteem when the assessment incorporates self-expression and enhanced self-dependence to reveal abilities and showcase responsibility.

The findings confirm that primary international teachers view their implementation of inquiry-based learning as learner-centered through the use of reflection, reflecting on the unit of inquiry board. These findings support the literature provided by the IBO (2020f), which states student lead inquiry is accomplished through "drawing on their prior knowledge,"; "providing provocation through new experiences,"; and "providing opportunities for reflection and consolidation" (para. 2). These findings additionally support the reported connection that the inquiry-based learning component utilizes Malaguzzi's (1993) REA framework, where Brown (2018) reported that the REA's, real-life learning, documentation and observation, reflection, and qualitative assessment help to write the narrative of each individual's learning experience.

The findings in this study confirm that primary international teachers view their implementation of inquiry-based learning as learner-centered, where students teach each other by aiding students in thinking about their learning independently and in pairs. This finding supports the reported connection that the inquiry-based learning component of the IBPYP utilizes the REA, where Malaguzzi (1993) stated that children construct their

knowledge through self-learning and colearning, and Brown (2018) compared the REA to the ideas of constructivist learning where children create and construct their own learning based upon their lived experiences and what others experienced around them. The findings in this study add to the literature by presenting new data with teachers defining their use of tools such as Toddle and Seesaw to reflect on their teaching and student learning.

The findings in this study confirm the findings that teachers view their implementation of inquiry-based as learner-centered as needing resources. This finding supports Harris (2017), who stated that scaffolding and modeling throughout the inquiry process include: helping students learn how to find reliable information and provide proof to support their answers, which can be done through skill support through library databases, website analysis, archives, presentation skills, and collaboration. The finding also confirms Hitt and Smith (2017), who defined inquiry-based learning as one that probes students' prior knowledge, provides students with an unknown situational based question or a problem so they can construct their own mental models and explanations, engages students in thinking and discussing content, and according to the IBO (2020) involves students using authentic materials or equipment. Additionally, the findings add to the literature by teachers expressing that they found their implementation of inquiry-based learning as learner-centered, where students teach each other, which they also found as a rewarding outcome of inquiry-based learning.

Theme 6: Limitations to Implementation

The findings in this study confirmed the results of multiple studies by presenting data that describes primary international teachers' views about their implementation of inquiry-based learning as limited by various difficulties and challenges related to learning made visible, making learning meaningful, colearning, the broadness of the IBPYP framework, and students with needs (ELL and Learning Disabilities). These findings support the findings of Walker and Lee (2018), who stated challenges exist related to inquiry-based instructional strategies and techniques, which Netcoh (2017); Van Uum et al. (2017) identified as related to choice, boundaries, and rigor, and Gurkan (2021) found teachers struggled to find inquiry subjects related to IBPYP main ideas and to write age-appropriate lines of inquiry and thinking for students when implementing inquiry-based learning within the IBPYP. These findings also add to the literature where Meškauskienė and Guoba (2016) found the challenges were with assessment as a tool to drive inquiry and resilience. These findings extend the literature of Lochmiller et al. (2016), who reported that teachers viewed it as a serious implementation challenge to teach with an IBPYP philosophy and skillfully use inquiry-based learning while developing students into fluent English speakers. Lastly, the results of this study expand on the literature of Steffen and Bueno-Villaverde (2018), who found teachers perceived the written and or planned assessment curriculum were considered difficult, with early years teachers perceiving them as significantly more difficult. The findings add to the literature with primary international teachers stating their implementation of inquiry-based learning is limited by problems and the elitism of the IB, teaching a wide range of ages, and school

structural and procedural systems. The findings further added to the literature with primary international teachers offering the following as future ways to combat some of the barriers that limit implementation: the school to think of the student as tomorrow's adult and to provide teacher agency in their implementation of inquiry-based learning.

Limitations of the Study

I conducted this study to understand the perspectives of primary international teachers on their implementation of inquiry-based learning. I cannot guarantee that the phenomenon under investigation will be stable and reliable because it is based on the participant's individual perspectives and experiences. To combat this, the results of the study were interpreted using consistent measures in line with my data collection methods and were triangulated through thick descriptions, achieved using researcher developed probing questions in the researcher developed interview and through my researcher journal. I had difficulty getting participants from my primary site location and gained all participants from my backup site location. I tried to combat this by communicating the problem, purpose, and potential social implications of this study in relation to primary international teachers and offered a 100TRY Starbucks gift card to all participants who agreed to take part in my study. I have personal biases that could have influenced the study outcomes due to my experiences with the IB program as a whole. First, I taught IBPYP physical education for one year to grades PreK through Grade 4 at a private international school in Japan. I also enjoyed the inquiry-based teaching component and collaborating with IBPYP teachers to develop integrated units of inquiry. Second, I am an IBDP instructor and science teacher who believes inquiry-based teaching practices lead

to higher student achievement and require continuous professional development. To combat these biases, I recorded participants' responses via audio and shared all transcripts of interviews with participants for transcript review to ensure I interpreted the participants' perspectives in their own words, without the influence of my interpretation.

Recommendations

The purpose of this basic qualitative study was to explore the perspectives primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP. Eleven qualifying participants participated in this study. There are some recommendations to consider within the scope of this. The first recommendation would be to conduct a larger study that comparatively investigates the IBAEM, IBAP, and IBA regions. This study would help to determine if there are additional common practices that teachers view as core components to their implementation of inquiry-based learning within the IBPYP. The second recommendation is that one-on-one interviews with administrators be conducted to gain an understanding of their experiences and knowledge regarding the implementation of inquiry-based learning within the IBPYP. During interviews in this study, it was reported that teachers viewed training must be done in an environment that provides space to make mistakes while learning and implements accountability for the knowledge once teachers are proficient at implementing the inquiry-based learning component of the IBPYP. An additional study should investigate how administrators may or may not have provided an environment that provides space to make mistakes while teachers are learning to implement inquiry-based learning and how administrators may or may not evaluate

teachers for proficiency to determine the level of accountability for that knowledge. During the interviews of this study, teachers also reported that flexibility could be improved by applying it to the school system's schedule and providing time for working as a team. Another recommendation related to administrators is that a study should be conducted to investigate how administrators may or may not provide collaborative planning time within the structure of the school.

In this study, teachers reported that the flexibility of the IBPYP framework as enabled them to differentiate for student-centered learning as a method to implement inquiry-based learning. A study conducted on what student-centered learning strategies teachers use within the IBPYP could identify additional pedagogical instructional methods teachers use to implement inquiry-based learning. In this study, teachers expressed that they found their implementation of inquiry-based learning as learner-centered, where students teach each other, which they found as a rewarding outcome. An additional study on the outcomes of utilizing student-centered learning instructional methods and learner-centered instruction could highlight the benefits of its use when implementing the inquiry-based learning component of the IBPYP.

During interviews in this study, teachers reported that their implementation of inquiry-based learning is limited by problems related to the elitism of the IB, teaching a wide range of ages, and school structural and procedural systems. An additional study conducted on primary teachers who teach multiple age groups compared to single age group primary teachers could reveal additional barriers to implementation and ways to overcome them. The last recommendation is for future studies to be conducted on the

system-wide impact of the inquiry-based learning in the primary international school setting.

Implications

The results of this study may positively affect social change in the private international education setting. Throughout this study, I have provided research on the perspectives primary international teachers have about their implementation of inquiry-based learning and what they view as the core components of implementation. The findings in this study can help educators improve their implementation of the inquiry-based learning component of the IBPYP and aid administrators in evaluating the flexibility of the school schedule, and teacher professional development to include the needs teachers outlined for implementation, along with supplies, resources, and recommended collaborative platforms teachers suggested they use.

Methodological Implications

While the basic qualitative methodology enabled the discovery of the perspective primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IBPYP, it did not provide a focused investigation of how primary international teachers implement the inquiry-based learning component. A case study methodology may add to the literature specifically about how primary international teachers implement inquiry-based learning within the IBPYP. This study would help to provide more evidence surrounding the complexity of how teachers implement inquiry-based learning, adding to a specific perspective primary international teachers' have about their implementation of inquiry-based learning. This study would

also add to the data gap Ayyildiz and Uzumcu (2016), La Porte (2016), Lau et al. (2018), Lochmiller et al. (2016), and Mutammimah et al. (2019) described as a lack of studies conducted that have examined the IBPYP and very few conducted on the implementation of inquiry-based learning and would add to the data gap Ledger (2017) identified as the IBPYP being the least researched of the IB programs.

Recommendations for Practice

It is recommended that administrators provide teacher training and ongoing professional development that is focused on the essential elements of the IBPYP. Teachers reported that they found it difficult to provide enough inquiry experiences for students, to narrow down the broad concepts of inquiry-based learning within the IBPYP, and to integrate the unit of inquiry into every subject, with the language of the IBPYP as inaccessible to students. A second recommendation is to provide teachers with agency over the decisions they make, and feedback they provide to the leadership team could aid in teachers feeling supported in their implementation of inquiry-based learning. Lastly, it is recommended that all teachers are provided allocated collaborative planning time, and time is provided for new teachers to collaboratively plan with a buddy teacher as they learn how to implement inquiry-based learning.

Conclusion

Researchers have examined the reasons to implement the IBDP, IBMYP, and IBPYP (Dickson et al., 2018; Kadıoğlu & Erişen, 2016; Wright et al., 2016), with the IBPYP being the least researched of the programs (Ledger, 2017). However, little is known about the perspectives teachers have about their implementation of the inquiry-

based learning component of the IBPYP (Ayyildiz & Uzumcu, 2016; La Porte, 2016; Lau et al., 2018; Lochmiller et al., 2016; Mutammimah et al., 2019). The purpose of this basic qualitative study was to explore the perspectives primary international teachers in the urban environment of the IBAEM have about their implementation of inquiry-based learning within the IBPYP, an IB program, which the IBO (2017, 2021) and Steffen and Bueno-Villaverde (2018) have indicated is growing internationally. Responses to semistructured interview questions aligned to the REA framework allowed PreK-Grade 5 primary international teachers to describe their perspectives about their implementation of inquiry-based learning within the IBPYP. Participant responses provided an understanding of the perspectives primary international teachers have about their implementation of inquiry-based learning within the IBPYP.

Responses revealed that teachers view their implementation of inquiry-based learning as accomplished through the way that they plan units with training as a necessary first step to being successful at implementing the inquiry-based learning component of the IBPYP. Some specific examples of how they plan units to implement inquiry-based learning were through aligning their units to the REA; planning through collaboration, which is also documented through Toddle to show teachers' learning over time, and collaborating with other teachers to integrate all content related to the inquiry-based learning component of the IBPYP; the plan by keeping families at the center; they plan by chunking lessons to approach their planning with concept-based learning as a method to facilitate colearning and make learning meaningful; and they plan using UbD by planning with the end in mind to make learning meaningful and plan for self-learning.

Some specific examples of areas teachers viewed training as necessary were: the action side and colearning development of children learning English components of inquiry-based learning, and having guidance from other experienced IBPYP teachers to help teachers who are new to inquiry-based learning.

Through the interview process, it was also shared that teachers view the flexibility of the IBPYP framework as a core component of their implementation of inquiry-based learning. Some of the specific aspects of flexibility they identified as instrumental in their implementation of inquiry-based learning were; that it enabled them to make intentional decisions about which concepts to focus on, use of the outside environment for self-learning and making learning meaningful, and intentionally using learning made visible through hanging student work, writing students' thoughts down and displaying them; it enabled them to intentionally focus on integration when considering the broad framework of the IBPYP; and it enabled them to intentionally use tools such as making learning meaningful and learning made visible to inform instruction and inform students of their learning. The majority of teachers responded that they implement inquiry-based learning by using student-centered instructional strategies that make learning meaningful, visible, and where the teacher facilitates learning so that students engage in colearning and self-learning. Some specific examples of their use of student-centered instructional strategies were: exploring, where students make decisions about what they are going to do to facilitate colearning and to make learning meaningful; by incorporating student-based opinions; and by cocreating the curriculum together through teacher to student collaboration. All teachers responded that they view their implementation of inquiry-

based learning as learner-centered, with students taking an active role in their learning and teachers taking an active role in student learning. Some examples of implementation strategies teachers found helpful to implement inquiry-based learning that they viewed as learner-centered are: showing students how, incorporating feedback as much as possible to inform students of their learning so they can demonstrate growth over time, hang up student work for learning made visible and for the use of formative assessment and reflection, and having students continuously solving problems that are scaffolded based on what students already know and by providing agency for students to take action on their learning.

Through the interview process, teachers also shared that they view challenges and difficulties exist that restrict and limit their ability to implement inquiry-based learning within the IBPYP. Some examples of challenges and difficulties they described are the system's schedule, specifically time to collaboratively plan with other teachers and time to implement the inquiry-based learning component, and supporting students with needs related to language. Continued research, beyond the perspectives primary international teachers have about their implementation of inquiry-based learning, into factors related to how teachers implement the inquiry-based learning component of the IBPYP, the role administrators play in the schedule and collaborative planning time offered to teachers, along with how teachers are evaluated and supported with their implementation of inquiry-based learning are needed to contribute to positive social change. Understanding how teachers and administrators work together to implement inquiry-based learning is

key in helping future primary international educators meet the learning outcomes reported in past studies about the IBPYP.

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Appendix A: Interview Protocol

Date:
Time:
Interviewee Code Name:

Interview Guide

Parts of the Interview	Interview Questions
Introduction	• Hi, this is Constance. Thank you very much for participating in my study. The purpose of this interview is to explore the perspectives primary international teachers in an urban environment have about their implementation of inquiry-based learning within the IB primary years program. This should last about 1hour. After the interview, I will be examining your answers and conducting data analysis on the emergent themes and experiences, which will be described in the analysis and results section of my dissertation study. However, I will not identify you in my documents, and no one will be able to identify you with your answers. I will send you a copy of the transcribed interview and data collected from your interview one week after conducting the interview for transcript review. You will be able to notify me of anything I may have misunderstood about our interview. You can choose to stop this interview at any time. Also, I need to let you know that this interview will be recorded for transcription purposes. • Do you have any questions? • Are you ready to begin?
Warm-Up Question and Question related to personal life/experience	1. Can you tell me about your teaching career history? Probing question(s): a) And how many years have you taught the IBPYP? b) What types of schools have you taught the IBPYP in? (International, public, private, non-profit, for-profit, elementary only, k-12 schools, inner city, rural, suburban, etc.)

Transition to Beginning Topic	Thank you for clarifying your teaching experience within the IBPYP and career history with me, now we will move onto your perspectives and experiences with implementation of inquiry-based learning within the IBPYP.
Parts of the Interview	Beginning Section of Interview Questions: **Defining implementation of inquiry-based learning within the IBPYP**
Beginning of the Interview	1. From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? **Probing question (s):** For example: a) What does it look like, sound like, feel like? b) What are the most valuable elements of inquiry-based learning within the IBPYP? c) What are the most valuable practices of inquiry-based learning within the IBPYP? d) What do you value about inquiry-based learning within the IBPYP? e) What are the most valuable influences of inquiry-based learning within the IBPYP? Follow Up- Can you give me specific examples of inquiry-based learning? 2. Suppose I spent the day in your classroom with you. What would I see happening between student interactions with adults, and with children in relation to collaboration and problem solving? Take me to your classroom and let me see what happens during the day. **Probing question:** For example: a) What would I see adults and students doing in relation to collaboration and problem solving? b) What would I see students doing in relation to collaboration and problem solving?
Transition to Next Topic	Now that you have described implementation of inquiry-based learning and what it is like to experience it we are going to move onto questions concerning your experiences with inquiry-based learning implementation strategies.
Middle Topics 1-3	Middle Section of Interview Questions: **Use of/Choice of/Planning for/Understanding of implementation strategies**
	3. How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? **Probing question:**

Middle of Interview Topic 1	For example: a) What do you view your role is related to influencing the learner's ability to be guided to learn? b): What would I see happening in relation to accessing the learner's prior knowledge and using that information during times of instruction and learning activities? c) Tell me about your use of formative assessments. d) How do you guide students and enable them to engage in learner centered activities? d) What are their purpose in your classroom? 4. Tell me about using the environment as an instructional technique? **Probing question:** For example: What do you think about using an environment other than your classroom as a teaching technique? *5.* How do you make learning visible? **Probing question (s):** For example: a) Tell me about your qualitative assessments. b) How do you observe and document student learning? c) What are some techniques you use to help students reflect on their learning? 6. What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?) **Probing question (s):** For example: a) What types of activities do you do now that you did not do before being an IBPYP teacher? b) How do you plan units now that you did not do before being an IBPYP teacher? c) How do you plan lessons now that you did not do before being an IBPYP teacher? d) How do you plan learning activities now that you did not do before being an IBPYP teacher?
Transition to Next Topic	Now that we have established your views related to implementation strategies, we will move onto discussing your experiences with

	difficulties and successes associated with implementing inquiry-based learning within the IBPYP.
Topic 2 of 3	Interview Questions: **Difficulties with implementing inquiry-based learning within the IBPYP** **Strengths implementing inquiry-based learning within the IBPYP**
Middle of Interview Topic 2	7. What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? **Probing question(s):** For example: a) What is something you found difficult related to the implementation of inquiry-based learning? b) What is something found successful related to implementing inquiry-based learning?
Transition to last section of interview questions	We have established your teaching experience within the IBPYP, your perspectives and experiences with implementation of inquiry-based learning within the IBPYP, along with difficulties and successes associated with implementing inquiry-based learning within the IBPYP. We will finish our interview with what you view as necessary for successful implementation of inquiry-based learning within the IBPYP.
Last section of the Interview Questions	Last Section Interview Questions: **Needs of teachers for implementation of inquiry-based learning within the IBPYP**
End of Interview	8. Suppose I was present with you during an IBPYP accreditation meeting where IBPYP staff express their needs regarding implementation of inquiry-based learning to the reviewer. What would see going on? Take me there. **Probing question(s):** For example: a) What is something you would request to help you implement inquiry-based learning? b) What would help you to better implement inquiry-based learning? c) Based off of your experiences, what would your colleagues express as their needs?
Close	Thank you for volunteering your time and for your answers. Is there anything else you'd like to share with me? Do you have any questions for me?

Parts of the Interview	Closing Remarks, Debriefing, and Comments
Closing Remarks, Debriefing, and Comments	1. Thank you for participating in this interview process and for participating in my study. 2. I will send you a transcript of the interview in one week via email for your review to ensure I have captured your responses the way you intended to respond. Is it okay if I send this to the same email account we used to arrange our interview? 3. If you have any further questions or concerns, I can be contacted through my WhatsApp phone number +905346774697 and my email Constance.bahn@waldenu.edu. 4. If further clarification of responses or questions occur from the interview responses, I will follow up with additional questions. If you would like to withdraw from participating in this study, please notify me at this time.
Post Interview Comments, Observations etc.	Post Interview Comments, Observations etc. :

Appendix B: Alignment of Reggio Emilia Approach to Interview Questions

REA Conceptual Framework Component	**Interview Question Number from Appendix B**
1. Interview question related to making learning meaningful (learner's prior knowledge)	Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018).
1. Interview question related to making learning meaningful (ability to remember and process information)	Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?)

2. Interview questions related to making learning meaningful (learner's motivation to learn)	Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993)
3. Interview questions related to self-learning (using the environment)	Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993)
4. Interview questions related to self-learning (real-life learning)	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993)
5. Interview questions related to colearning (relationships between children with children through interactive experiences scaffolded by adults to create	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q2: Suppose I spent the day in your classroom with you. What would I see happening between student interactions with adults, and with children in relation to collaboration and problem solving? Take me to your classroom and let me see what happens during the day (Malaguzzi, 1993). Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction?

cognitive dissonance and cognitive growth along with social development of intelligence and skills for collaborating and problem solving)	(Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993) Q5: How do you make learning visible? (Ayyıldız & Üzümcü's, 2016; Lau et al., 2018; Ledger, 2017; Malaguzzi, 1993; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018; Twigg, 2010; Walker & Lee, 2018) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?) Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018) Q8: Suppose I was present with you during an IBPYP accreditation meeting where IBPYP staff express their needs regarding implementation of inquiry-based learning to the reviewer. What would see going on? Take me there. (Buabeng & Akuamoah-Boateng, 2019; Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al.,

	2018; Lazonder & Harmsen, 2016; Lochmiller et al., 2016; Malaguzzi, 1993)
6. Interview questions related to colearning (relationship between children and adults through interactive experiences scaffolded by adults to create cognitive dissonance and cognitive growth along with social development of intelligence and skills for collaborating and problem solving)	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q2: Suppose I spent the day in your classroom with you. What would I see happening between student interactions with adults, and with children in relation to collaboration and problem solving? Take me to your classroom and let me see what happens during the day (Malaguzzi, 1993). Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993) Q5: How do you make learning visible? (Ayyıldız & Üzümcü's, 2016; Lau et al., 2018; Ledger, 2017; Malaguzzi, 1993; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018; Twigg, 2010; Walker & Lee, 2018) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?)

	Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018) Q8: Suppose I was present with you during an IBPYP accreditation meeting where IBPYP staff express their needs regarding implementation of inquiry-based learning to the reviewer. What would see going on? Take me there. (Buabeng & Akuamoah-Boateng, 2019; Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Lazonder & Harmsen, 2016; Lochmiller et al., 2016; Malaguzzi, 1993
7. Interview questions related to learning made visible (documentation and observation)	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q2: Suppose I spent the day in your classroom with you. What would I see happening between student interactions with adults, and with children in relation to collaboration and problem solving? Take me to your classroom and let me see what happens during the day (Malaguzzi, 1993). Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q4: Tell me about using the environment as an instructional technique? (Brown, 2018; Malaguzzi, 1993) Q5: How do you make learning visible? (Ayyıldız & Üzümcü's, 2016; Lau et al., 2018; Ledger, 2017;

	Malaguzzi, 1993; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018; Twigg, 2010; Walker & Lee, 2018) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?) Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018) Q8: Suppose I was present with you during an IBPYP accreditation meeting where IBPYP staff express their needs regarding implementation of inquiry-based learning to the reviewer. What would see going on? Take me there. (Buabeng & Akuamoah-Boateng, 2019; Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Lazonder & Harmsen, 2016; Lochmiller et al., 2016; Malaguzzi, 1993
8. Interview questions related to learning made visible (reflection)	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q2: Suppose I spent the day in your classroom with you. What would I see happening between student interactions with adults, and with children in relation to collaboration and problem solving? Take me to

	your classroom and let me see what happens during the day (Malaguzzi, 1993). Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q5: How do you make learning visible? (Ayyıldız & Üzümcü's, 2016; Lau et al., 2018; Ledger, 2017; Malaguzzi, 1993; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018; Twigg, 2010; Walker & Lee, 2018) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?) Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018)
9. Interview questions related to learning made visible	Q1: From your perspective, what do you view as the main components of inquiry-based learning within the IBPYP? (Brown, 2018; Ledger, 2017; Malaguzzi, 1993; Twigg, 2010; Van Uum et al., 2016). Q2: Suppose I spent the day in your classroom with you. What would I see happening between student

(qualitative assessment)	interactions with adults, and with children in relation to collaboration and problem solving? Take me to your classroom and let me see what happens during the day (Malaguzzi, 1993). Q3: How do you view the use of and use learner centered instructional strategies to access students prior learning as well as guiding instruction? (Boyadzhieva, 2016; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Malaguzzi, 1993; Morrissey et al., 2014; Savage & Drake, 2017) Q5: How do you make learning visible? (Ayyıldız & Üzümcü's, 2016; Lau et al., 2018; Ledger, 2017; Malaguzzi, 1993; Savage & Drake, 2017; Steffen & Bueno-Villaverde, 2018; Twigg, 2010; Walker & Lee, 2018) Q6: What, if anything, do you do now as an IBPYP teacher that you did not do before being an IBPYP, to aid students in developing the ability to remember and process information? (Harris, 2017; Hitt & Smith, 2017; IBO, 2020;Gurkan, 2021; Luddecke, 2016; Moss, 2018; Mutammimah et al., 2019) (if they are an experienced IBPYP teacher, rephrase this: What, if anything, do you do now as an experienced IBPYP teacher that you did not do when you first become an IBPYP teacher, to aid students in developing the ability to remember and process information?) Q7: What experiences do you view as difficult and/or successful experiences with implementing inquiry-based learning within the IBPYP? (Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Ledger, 2017; Lochmiller et al., 2016; Malaguzzi, 1993; Mutammimah et al., 2019; Netcoh, 2017; Walker & Lee, 2018; Steffen & Bueno-Villaverde, 2018; Sperandio & Kong, 2018) Q8: Suppose I was present with you during an IBPYP accreditation meeting where IBPYP staff express their needs regarding implementation of inquiry-based learning to the reviewer. What would

	see going on? Take me there. (Buabeng & Akuamoah-Boateng, 2019; Brown, 2018; Harris, 2017; Hitt & Smith, 2017; IBO, 2020; Lau et al., 2018; Lazonder & Harmsen, 2016; Lochmiller et al., 2016; Malaguzzi, 1993)

Appendix C: Codebook and Category Explanations

Table C1

T1–T11 Codebook Short Descriptions and Name of Code From Highest to Lowest Frequency

Short description – the name of the code itself	Detailed description – a 1–3 sentence description of the coded datum's qualities or properties	Exclusion criteria – exceptions or particular instances of the datum or phenomenon that do not merit the code	Typical exemplars – a few examples of data that best represent the code	Atypical exemplars – extreme or special examples of data that still represent the code	"Close, but no" – data examples that could mistakenly be assigned this particular code
Making learning Meaningful (225)	Learner's prior knowledge, ability to remember and process information, and learner's motivation to learn. Meeting learners where they are at in order to move them forward. Accessing learners' prior knowledge for use in class.	Not activities tied to a grade for motivation-not compliance.	T1 "To be honest, because we are learning with the younger children, centered learning means differentiating because not everyone needs to learn (*) with hand signs" T2 "And you know, I think that they know a lot and they don't know they know a lot like." T3 "Yeah. If you're not, if you're not having kinship with, with, with the kids, you're not trying to understand where they're coming from. If you don't care about their culture or their you know what they're interested in, they're not going to want to participate." T4 "See, Think, Wonder" or a 3-2-1 chart or just different things to them to think about what they already know or what they already know what we're talking about KW LS, what they already know what we're, what they want to know or what they've learned or something that they want to continue to learn more about." T5 "It links with, like, migration, or like celebrations or their family and their friends and the environment like there's other links, not just drawing or making something." T6 "Because if they, if they're not interested in a topic, they're not going to engage and if you're not having the engagement if you're not provoking and trying to put things from short term to long term memory, the students are just going to go through the motions." T7 "So when you first like access prior knowledge, like that's usually the first way to start even be even beginning to start a unit." T8 " For example, they can	T4 "So instead of having the same exact thing every year and having a set answer for whatever my question is, it allows the students to change it up." T3 "And it just so happens that we're writing persuasive speeches now."	

			choose which United Nations Global goal they want to do, or which way they want to present their work." T9 "So let them make their decisions and put their mark on it because I think the end result then is a lot better quality." T10 "I try to address their ideas, their thoughts and thinking either in that lesson as time provides." T11"So again, the students get a lot of input and I'll have probing questions to help them like scaffold the game and but yeah."
Learning made visible (177)	Documentation and observation of learning, student and teacher reflection, and qualitative assessment, visibility of student learning and growth posted for the class to see their learning growth over time related to their inquiry. Recording both written and auditory or the learning process for feedback to guide students in reflection and teacher in reflection of the learning process.	Tests or quizzes that are graded, it should be reflective process meant for growth.	T1 "And I'm observing during this interaction; I said, I stick it on my wall" T2 "But I think if they can see like, "Oh, I really messed up in that second one, but I fixed it and I you know, I figured out how to how to change it and make it look better." T3 "The more I can hang it up and the more I can do with it." T4 "And even after we finish, we'll leave maybe five or six things about what we've learned, just staying up on the board or staying up somewhere else in the classroom so that they can refer back to." T5 "They will have to like think about the (*projects) that they're making and you know, that it's about like feelings and emotions." T6 "Okay. So, about the learning journey, okay, so obviously, reflection, not unlike a typical teacher gets done on time, but it gets done when it gets done sometimes for me reflection and reflection straight off, written or audible or drawn (inaudible on recording)." T7 "So one thing that's my bread and butter is using anchor charts and always referring back to us writing strategies, math strategies, reading strategies, inquiry strategies, life strategies, like life skills, social skills, strategies, and just say hey, remember even classroom rules with like, our essential agreements and you know, what we have is, what's your job and what's my job, and going back and forth with that, keeping a schedule, keeping a timetable, using all those things that we can and you know, to organize ourselves and organizing us as a class and individual." T8 "So we'll go through like we'll always have lists up of like, what we're doing success criteria wise, or rubric wise, and we'll talk about how well we make those, what we can do to improve in our next tasks and what we things like what we

			would have done if we had more time, or what we would have done if we were working in it on a different project or if we had a different tool or something like that." T9 "And then they have to present a poster or a Google slide or something on canvas or any other kind of way of presenting it just on one slide" T10 "Yep. So, one thing that I like to use in my (*classroom), is lots of visual thinking routines. So, using writing as well as drawing to consolidate and explore different concepts I think is really important." T11 " So that's kind of how I gather information, I guess just from observing and watching how they (*work through the challenges), how they interact with each other."	
Colearning (146)	Relationships between children with children or children with adults: through interactive experiences scaffolded by adults to create cognitive dissonance and cognitive growth along with social development of intelligence and skills for collaborating and problem solving.	Teachers collaborating and learning from each other.	T1 "By the time they struggle I enjoy a lot so you will see, if you are into my classroom, students are really using their thinking skills, social skills, agreements, sometimes disagreements but okay fine." T2 "So, I think you know, it's a lot of it's a lot of teamwork." T3 "There's a we try to make sure that that child understands as much as we can, and that's that comes back to your question before about collaboration that I love to see the children they know that they need to help the kids who are learning English." T4 "Sometimes when they're working together, they will teach each other how to do the problem." T5 "Well, I think it again it like depends on what stage we are in the unit. But definitely at the beginning of the unit, we will try to sort of come up with solutions, not just the beginning, I guess like as we're going we'll sort of come up with try and come up with solutions." T6 "Or we use we use a lot of with getting ideas down mind mapping is a big we've been focusing on basically the Grade 3s are just learning skills like mind mapping and district visible thinking routines, a lot of see, think wonders, and so forth. Trying to figure out like an ATL skill or something like that." T7 "I think that's a big thing with the PYP and inquiry-based learning, and also finding ways in different ways of figuring out problems like real life problems." T8 "So those are some of the main jargons we come up with and there's a real focus on purposeful learning and all the different ways that we learn and	T3 "We have our stuff on each other's water bottles on each other's desks and you know, the kids have no qualms about coming up to my desk and taking the pencil sharpener or the tape or the or the Kleenex or the markers."

			learn with each other and learn on our own and connect in those three ways too." T9 "It's been kind of tricky, so not only have I found on learning kind of a new curriculum, but I've not really been able to do it to its full extent, because of those restrictions and the distancing in the classrooms and but we are kind of trying to be a little bit more flexible with it because I do believe that children just learn best through, you know, that inquiry based learning through each other through research, and we can just stand back then as the teacher and let them do." T10 "But what I really like to do is be one with the class and be a participant. I will plan activities; I will set up structures and let the students I will give them the information they need to know in order to participate in the activity." T11 "I do like create (*challenges) which I guess is a lot of student input."; "So they're developing the ability to solve problems themselves, which is really cool, and really helpful."		
Self-learning (103)	Using the environment, and real-life learning. Getting advice from specialists as mentors would fit this as well.	Direct instruction from teacher on what to do and how to do it.	T1 "And last year, there was a unit about weather, and we made a creative story outside." T2 "And so, you know, using some of this stuff around the classroom, we were able to find, you know, 10 different types of lines: You know, of course Google; I use Google Arts and Culture a lot and that has been like, you know, a fantastic tool for me to sort of just let them explore (*), you know, and there's music in there and culture." T3 "Cuz we could do the field trips, you know and he was awesome because he would actually go to the spot before, I would try, we would try to share but we would figure out ways that like we would take photos or we would have like a game so that	The virtual environment as well- online is an environment created by technology	T4 "You don't have to just be in one place to learn."

		when we got to the field trip that the kids would have to like figure those things out. You know what I mean?" T4 "So one really cool thing that we did last year, and we'll do it again this year is for, especially with Covid, because we couldn't, like have an actual field trip, so this is our field trip. So we were able to go down to the compost, composter after talking about it just once ourselves, and then get another lesson about how that works." T5 "And yeah, I hope that the lessons are kind of that the students feel like they have like the support to sort of make mistakes and realize that like making mistakes is part of you know, being in school like it's not actually should be seen as that thing I think it should be seen as something to learn from." T6 "We were taking photos of different plants and different animals and different little bugs and things that students might not notice as much, if not given that time." T7 "That's another thing is to look it up, find some current news, you know, see what's happening in the news today that those kinds of environments are things for the environment or tools, and they have." T8 "Yeah, I wish I knew more IB jargon so far, I guess. Like through PYP, it's that it's like connectivity, and like fluidity and learning in like real life contexts." T9 "So for example, with math or if we're learning about time, we might do races to time each other and make it link it to real life learning." T11 "Or if we use the gym there's access to different equipment or if we move spaces. We use that for like (*learning about body) movement."

"Resources" (57)	Not having access to resources like paper, books, technology (devices), and learning environments or needing access to resources or tools to implement inquiry-based learning. The list of resources can be discussed from the datum, and the code resources can be used to describe a need or a lack of these items in relation to implementing inquiry-based learning as successes, failures, limitations, or requests.	Meeting spaces	T1." So mostly I can say that the environment, and, and also the other tools are needed for the teachers are not supplied." T2 " But I think I think it comes down to more of like school resources and you know, nobody can change the fact that I need my own room." T5 "It's kind of like to do in order to do that and to show and for them to be able to like talk about things I think it's good if we can have like more space, like our school has a space but there's not like there's no display boards, or you know (*)." T6 "Something I would request? At this school, resources. Yeah, resources at my former school." T8 "Access to like hands on resources, like books, and models and things like that is always a critical one in the primary school, I feel." T9 "I think, you know, I know you know, children now learn through the devices through online reading books, you know, Epic and Raz kids and things like that a great, but I think sometimes it's good to have a good old-style book in your hand, you know." T10 "But to have a wall full of those terms to refer to at any moment in Lesson where they could just glance over "Oh, yeah, that's what that means." T11 "There's not many resources out there. So, I've had to like design the whole year, essentially for eight grades.	T1 "It's very, very, very, very bad that most of them even don't have a music classroom."	T1 "For example, in the, in the beginning of the year I was thinking that if students can (*perform a scientific inquiry) there is a device needed for example I couldn't find it, people told me that you can't do this.
"Time" (48)	Learning is halted due to the calendar of the school, collaboration halted due to the calendar and schedule of the school, curricular goals outside of the PYP due to the flexible framework can lead to time taken away for implementing inquiry-based learning component of PYP. School calendar and schedule and collaboration between teachers. Also, no time to fully	Follow-through on meetings and reflective practices as meeting members	T1. "Six weeks in the end of six weeks, I think that children start to learn about the central idea, but then they will develop a new idea, or they will create something, you just finished; Maybe the time or the, there should be a balance between the content that's asked and also we have to wrap up. Six weeks is not enough for (*integration) with the homeroom teachers." T3 "You know, also, I don't feel like I have enough time to talk to specialists." T5 "It's up to us to make, you know, to find the time and our schedules (*) are pretty crazy." T6 "The time to plan out a direction with the unit of inquiry could go and yeah, I just think (inaudible) give me time." T7 "I would want to have to do like real planning, like collaborative planning that would take up like a whole morning or like a whole afternoon where all my classes are either covered or students are off	T7 "Like, like more planning times, that's not just like 30 minutes." T8 "Because if you're given more time, you'll just do a better job and you want to do more stuff with it."	

	integrate with homeroom teachers or other teachers. And time in relation to the length of time provided for implementation of all components of the PYP that are related to the inquiry-based learning component. And time to balance out real-life learning experiences and content.		campus." T8 " Like we just have that time so we can sit together we can plan together. Right?" T9 "You just need more planning, but you know, it's something to plan it as far as far as we're going to do this for 10 minutes. I don't have time to sit down and do it the best way." T11 "I guess I told you about one before and said you know, like the lessons like a short by the time I get the transition time so like, I want my kids to be active as much as possible."	
"Integrate" (37)	Datum that indicates the teacher is working with other teachers, both subject and homeroom teachers, to collaboratively design the units of inquiry and lines of inquiry in a way that transcends across all classrooms and interactions students have with faculty and staff.	Student working collaboratively, not having collaboration or integration.	T1 I would, my answer is, as a sum: I would integrate with all other subjects that I didn't integrate before" T2 "And then of course, for PYP, we do have the units of inquiry and I don't have to sort of teach all of them with you know, you know, as their sequenced with the homeroom teachers, but actually, this and I didn't do that last year, but this year, I decided to, to follow every single one of them because I just find it easier to sort of, you know, connect with them and I think with what they're doing so they're already studying it in in their, you know, math, science or whether you know, reading, so why, why bring in something new?" T5 "So for *(my class) I usually work alongside homeroom teachers, and we like collaborate together and then I will try and sort of help their the work that they're doing, like support the work they're doing in homeroom with like * projects that are using the same like, subject and topic areas, areas that they're covering in in homeroom." T8 "And I think loads of being in touch with each other and find out what's going well with the other teachers to because they might say oh, such and such is doing in this unit in art or music or whatever." T9 "But I kind of probably the more the more collaboration across grades, I just think it's nice that that's been welcomed. I'd say more from the other teachers that I work with." T10 "So for example, currently in the Grade five unit that I'm teaching is where we are in place in time and we're looking at locations on the map and	T10 "I feel like a lot of what I do is reinforcement of what they already do in class. Students often need to hear the same thing from multiple people in order for it to really sink in and internalize as they're learning which is one of the wonderful things about PYP because it gives teachers a structure and sort of a guide and this overarching theme of the attributes such as learner profile, key concepts and transdisciplinary theme in order to help students make those connections."

			identifying characteristics within those cultures or within those countries and we're looking more geographically or historically rather than a how the world works, which might be a more scientific led unit." T11 "In terms of the fact that I'm like, some of them are like cross curricular or whatever they are with this same unit that the primary teachers are doing so I guess that's different."	
"Process" (30)	Datum reflected that student understanding is an ongoing never-ending cycle and different for each and every student.	inquiry cycle	T3" You know, it's like a seed that's been planted, and hopefully through, you know, through IB they'll come back to it again and "oh, yeah." T5 "I always want like work to be finish to a high quality, and if it's not, then I would like try and find ways to maybe help that student, like, achieve a point where they're sort of happy with their work. " T7 "There's no such thing as being done. It's how can I improve?" T8 "And also, like learning isn't linear." T9 "And it's a process so as you go through each day, and each week, you know." T10 "In this way, it's more active it's more hands on it's more process based and puts more of the responsibility of learning on the student through active participation	T7 "And it's always about what can you do better next time? "

			in lessons." T11 "Questioning and then we often do like, an activity more than once."	
"Independent" (26)	Datum indicating that a student can do something on their own and have enough skills to work on investigate or problem solve by themselves, rather than collaboratively.		T2 "I tried to of course, I want them to be independent, and I want them to sort of figure things out on their own." T7 "I think that's a big purpose of like student-centered learning is them at like they're doing the guidance they're doing, what they're what they want to do, and also be like taking that ownership of their learning. I think that's the whole purpose of those strategies." T8 "And so I (inaudible) when they're doing research, if you like, the kids will just show each other a website to be like, this is a website or a YouTube video or whatever I find." T9 "Well, my experience so far is kind of letting the child it be very child focused and let them be almost you're the teacher." T10 "Yeah, so reinforcing a lot of the attributes that we already do, and also providing additional opportunities for students to practice their independence through thinking." T11 "And then I often see them playing some of the games we learn in class at breaktime."	
"Toddle" (21)	The unit and lesson planning collaboration platform used by the school that the participants are working at. It contains materials, lessons, and units.	Differentiation, apps	T2 "But on Toddle now you can also see everybody else's connections, if there are any; So, I see sometimes like, oh, in Spanish or Spanish and French, they're doing this." T3" And we just kind of started looking at different activist because of we have some toddle posters." T4 "So, it's ah, I think, especially using toddle, it makes me think long term."; "I think it makes me think further into the future." T5 "And I yeah, I think that things like sharing work on toddle, like we have the classroom journals where we post students like working every week on their different units. T6 "Using	T6 "Okay. So we set out some scope and sequence of what we want the students to achieve some conceptual ideas. If they are meeting some of those some of the lessons will have those built in and be able to tick that off. If they if they are. "

			obviously Toddle to obviously plan and implement an inquiry during which we try to see if they're Achieving the lines of inquiry throughout it." T10 "They also have some, this is the wonder of online learning platform such as seesaw or Toddle, where I can set a student template and they can complete the template with whatever activity that we're doing and showcase their learning through some sort of written or drawing activity."		
"Behavior" (20)	Focusing on student behavior and behavior management of classroom routines, rules, and expectations as well as expectations for use of electronic devices.	Not collaboratively created behavior expectations, but rather teacher directed behavior expectations.	T2 I've had a lot of emphasis on like, routines, which has to be sort of practiced over and over and over again: Which I suppose is a good thing if that if that's you know, directed towards inquiry, but most of it's directed to games and chats and things like this. T3 And usually those are the kids that I'll say, okay, you know, I noticed that this could be very well or you know, it's kind of a way I can use our behavioral management, but we also we rotate it that; But also I say, if you're not behaving, you don't get to have a spot that day, you know, kind of thing.		T3 So, like those it goes, you know, so that everybody has a fair turn.
"Provocation" (20)	Instigating and guiding inquiry through getting students to ask questions from the instigation and through student questions.	emotional responses or stimulation	T3 "Usually the provocation is the Wonder wall, though." T6 "So the main component with IB with students is trying, engagement, of course, so starting with provocations from yourself as a teacher and your surroundings in the in the in the classroom, and environment, and trying to provoke questions. Wonderings for them to further investigate, to formulate or impart their own key words." T9 "So you can then tie that into their knowledge that they know already find out what they want to know we do lots of kind of questioning what they know already." T10 "So I try really hard to find student - centered activities, such as what are you wondering about right now?" T11 "Making sure I think the students have an input and a say."; "Yeah, lots of questions, I guess, to get them thinking."	T3 "And then I usually try to do some kind of formative that we might be doing or the provocation." T10 "But otherwise, I really do enjoy when the students can just sort of take whatever activity take the onus and run with it with me."	
"Broad" (17)	The framework of the IBPYP is a guide, not a script and not set. Datum referring to the openness and structure of the IBPYP framework.		T4 "Because it's a it is a great framework, but at the same time, it's so broad, that you have to figure out how to whittle it down."T6 "The difficulties, difficulties to try and achieve sometimes all the, if you're looking at the PYP even scope, the scope and so the sequence to try and achieve it all at times." T8 "Like it gives it a real structure that flows	T10 "So while they're gaining into while they're developing trains of thought in order to build a conclusion, the hard part is getting them to	

			along through the questions, the lines of inquiry that we're discussing in class."	get to the conclusion that you want them to get to."
"Concept-based learning" (17)	Conceptual understanding rather than knowledge centered approach to learning.	knowledge and skills	T3 "You know, but as the years went on, as a as I worked with more skilled and I gained more skills, you know, especially concept-based learning, I think, is really important; I had some really good PYP coordinators that always attach a line of inquiry to a concept." T7 "I think that's something that's very important for students and also for educators to you know, having broad concepts and broad topics that can be explored in any way."; " I much I mean, there's the learner profiles, the attitudes, I mean, just those into like a classroom and just having students interact in that way is also very beneficial and just caught like key concepts and I mean, everything." T8 "Like they need to know key concepts so that they can understand and communicate and talk about things that are really important in the world." T9 "It's more of like, it's all kind of into a big pot of learning rather than this is maths."T9 "It's more of like, it's all kind of into a big pot of learning rather than this is maths." T10 "So when you're looking at form, for example, you're looking at form in different ways, but it all connects back to the same concept when you're looking at a function or connection or responsibility."	
"Questions" (14)	The types of questions students are expected to be asking to drive the inquiry component of the learning. The guidance teachers are providing to teach students how to think in depth about a problem in order to solve it.	Right there questions, yes/no questions	T2 "So, when it comes to them asking questions, I usually before they are allowed to ask it, I say, "Is this is this a question that's going to help with you know, is this an inquiry-based question, or is this a “yes” or “no” question.” T7 "But yeah, mostly when you come in the classroom, you'll still see an interactive classroom with anchor charts all over the walls and the central idea and students inquiring into the key concepts, there's teacher questions and student questions that are on a whiteboard."	

"Supplies" (14)	Money allocation to purchasing resources, classroom materials, and delivery of supplies in time for use.		T2 "Well then maybe I would say to them like certain supplies I think that you know, the school is quite stingy: And I also think, like getting supplies in a timely manner." T3 "Probably because we have principles who which I, you know, I'm sitting here talking about action right? But their principles they just cannot work at a school where it's so blatantly obvious that the money is being taken. Not for the kids that are paying the money, but used other ways, which maybe is a way to make it more equitable, I don't know if we really want to get into it."		T3" But it's all about money when it comes down to it."
"Other teachers" (13)	Learning from other teachers as guides, or observing other teachers instruct their lesson using inquiry-based learning.		T2 "So, she's really sort of, you know, been my guide throughout this journey." T3 “You know, they need to have like a strong buddy who has had some or they need to have some kind of training at the school in order to help those new teachers to navigate all of that information and also not to be expected." T4 "I think I would like think what I would like is a chance to see other the way that other people implement the PYP. Just like the different ways that the teachers implementing it and also the different ways that students are understanding it." T6 "That's always good, but a lot of professional developments done within your own teams." T8 "For me I always think that that is way more useful, CPD is having the time to talk to another one of my colleagues and ask them what sort of stuff they did or being able to go and check around their classroom at the end of the day or look through books or something like that is, is really, really helpful." T10 "So that's one of the most successful things that I think I've learned as an inquiry-based teacher is beg borrow and steal."		
"Participate in learning" (12)	Datum related to guiding students to participate in learning by making sure they are taking action based on their inquiries and use their agency to extend their learning.	colearning	T3" And now I feel like no, no. Okay, what are you doing to participate in this learning?" T6 " Agency is the main one. That how the learning journey situation sometimes you might not have a whole charity drive, or you've haven't gone and done a big action, where it's putting posters up you've just done something in your past your family members something and it's really it's been." T7 "Agency. I think that's probably the like, cornerstone of the PYP is are those two things is agency and just being an inquirer and knowing and	T3 What are you doing to advocate for other people? T9 "How do they want to present?"	

			then going through that every day, and it's a good way to build open mindedness and it's a good way to adapt to new newer environments."T9 "So you can then tie that into their knowledge that they know already find out what they want to know we do lots of kind of questioning what they know already." T11 "I guess the purpose of that is that like I think, and they enjoy different games, and so the purposes, you know, (*) is for kids to participate in to be active and to enjoy it, because otherwise they won't want to be active."	
"Buying cultural currency" (11)	Datum indicating that the school attacks wealthy people, is not accessible to the general public, and employs foreigners that are often Western and teach only using English (except for specialist classes that are foreign language courses). Datum indicating that an IB education is something to be purchased and seen as an advantage and currency.		T3 “And they, I think that integrating language more into the learning helps to break down some of that. Yeah, what is that called? Cultural currency, right? Yeah. That's what they're buying, you know, coming to our schools, and I'm getting kind of sick of that rhetoric in IB. I would say, that's my biggest criticism, I, you know,” I'm rich, I can send my kid to an IB school.”	T3 But it's all about money when it comes down to it.
"Meetings then what?" (10)	School structure for collaboration and follow-through on meetings. Datum about not following through on collaborative meetings to inform instruction and collaboration.	Collaboration meetings that are considered a positive, professional development meeting, parent and/student meetings	T1. And I said, see, we are always, I mean homeroom teachers are seeking for collaborations we are doing meetings but after then what? No one is keeping up, because no one has time; Shall we repeat it next year?	T1 “No one likes extra meetings but how we will know that our implementation or our collaboration I mean succeed right?”

"Space" (10)	A growth mindset towards teachers and their professional development and practice. Ability to have time to internalize the components of self-learning, colearning, making learning meaningful, and learning made visible and the full IBPYP.	Room size	T3 "And I think teachers have to be given the space, to make mistakes, and forgiven, you know, for not knowing. But I think you have the you know, the most successful way to implement it, I think would be to make sure that those essential elements of the IB are understood, and then have teachers find kind of their own system their own way that helps them to get to that end point." T8 "Yeah, I guess having those again like freedom and flexibility just being able to get on with it and not having someone is like breathing down your throat and worried about what you're doing and trying to guide you and do all these things".	T3" So I think that they need time."
"Providing them with inquiry" (9)	Providing students with a variety of problem and question-based learning experiences that the student engages in also drives the lesson forward through.	resource	T2 But yeah, I think providing them with as much inquiry as I would like, has been difficult. T9 "You just kind of give them the overview of what they should learn and let them do a lot of research." T10 "I think that's a big difference between inquiry and non-inquiry inquiry-based learning is that you are giving them experiences rather than teaching them lessons."	
"Teacher agency" (9)	Suggested improvements for implementation related to teachers and their control of decisions and direction of inquiry and have a safe space to voice their opinions, ideas, and contribute to the structure and function of the school, their classrooms, and their implementation of inquiry-based learning.		T1 "In the future, they will work for teacher agency as, well." T8 "Ah, and I feel like teachers strive more when they have more flexibility over their time and their planning and their curriculum."	T8 "Once they start to be withheld and stuff and you just become a pit."
"Families in center" (8)	Involving families in inquiry and student learning.	Parent Teachers Association	T3 “I am more like, and I think this is how IB, wants us would like us to think of our families as they're in the center, and then we move out from there, and we're trying to build we're trying to make good humans, right. And those parents, you know, so you start from there and it's kind of like a concentric circle, right?" T6 "So yeah, you need coming from the top you need you need your community on board to support what you	

			doing." T8 "I think it's so useful for them to talk about it at home."	
"Wide age range" (7)	Teaching more than one age group in the primary school.		T5 "Anything I think, I think you know, like I was saying, you know, we're teaching a very, like wide age range." T11 "Um I feel like my challenge is not like my biggest challenge is I teach so many different grades and so I don't remember my like central idea from grade to grade."	
"Language of the PYP" (6)	The language used in the IBPYP subject guide and units of inquiry wording that is supposed to be used by the teacher and shared with students to help cocreate the unit of inquiry.		T5 "I think sometimes the language used in like the PYP curriculum can be it's not like very user friendly for the students." T10 "The most difficult time I've had with PYP was when I was first starting out and there were all these words the jargon that the IB has set up for the PYP structure really is a learning curve."	T5 "So you have to kind of simplify things like when you read like the central idea, it's almost like it's directed at like university level students."
"Responsible " (5)	Datum indicating that a student is taking an active role in the responsibility of being a member of the classroom community in relationship to materials and taking care of the classroom.		T2 "So, you know, some of them will distribute materials. Some of them will collect the materials, some of them will spray down the tables."	
"School not flexible" (5)	School structure does not enable the teacher to fully implement inquiry due to pre-determined goals of the school along with the school calendar and set dates that students must complete and end their inquiry, even if they are in the middle of it. School structure does not allow for collaboration and unit of inquiry building among all relevant staff. School structure requires outside events not connected to the inquiry-based	Not in relation to how lines of inquiry are implemented within individual classroom	T1. "There are a lot of content that we have to meet from homeroom teachers, from the school admin, from our own goals." T9 "I'm not sure if our school is kind of always set up the best to be able to do that all the time and again with COVID You know, sorry to keep on banging on about that, but sometimes, I'm not sure if the school setting is always the current school setting is the best setup school that will allow students to do that if I'm honest, and to give them that freedom."	school events other than exhibition like art exhibitions, concerts, performances that are imposed by the school itself as a mandatory teaching responsibility.

	learning component of the IBPYP.			
"Choice Action" (4)	Datum referring to children making choices to take actions for themselves on a personal level, not academic level.	Not academic action-behavioral and social action	T3 So we think a lot about the choice action because I'm really focused on action.	T3 They can do five finger breathing.
"Different styles" (4)	Approaches to teaching and learning based on country of origin for teaching staff and administration.		T3 “I think that's a problem for primary that I've noticed with because you have teachers coming from the UK, or New Zealand or Australia, and then you have the US, and they all have different styles.”	
"Expensive" (4)	Datum referring to outside professional development and why teachers might not be receiving it.		T1 “Because they are very expensive, and we are, we are getting very less, for example, because it's important for us to update ourselves as I say. Maybe they should invest the teachers I mean knowledge by, maybe they can do discount, whatever.”	
"No support" (4)	Teaching assistants and support staff for students with needs.		T5 “There's also quite a lot of SEM kids are at school and EAL kids and there's no TAs..” "More support and more like preparation time to plan."	
"Routine" (4)	An agreed upon set of steps or procedures that students know without much instruction, usually provided by a cue to help them transition or perform a certain expectation quickly.	Behavior issues	T3 "So we I have this Mind Yeti that I put on it, it's only like three or four minutes, but it kind of gives me turn off the lights and they already know this routine, and they all settle down."	T3 And they just try to remember those right, we started the beginning of the year.
"Show them" (4)	Datum referring to demonstrating how to do something, a demo, showing rather than telling how to do something so students can continue independently.	Telling how to do something	T3 “And then, but show them how, so that they know; So, for example, if we are lining up, I show them how to line up and then they I always go from the back.”	
"Summative assessment" (4)	Datum referring to assessing students at the end of a unit or series of formative		T4 "And then at the end of the week, we'll have some summative assessment on that as well." T8 “Then I usually get the kids to do some sort of assessment at the end of the project.” T9 "Kind of on this	

	assessment activities. Datum referring to the mastery of skills, the development of positive growth mindset attitudes, and the taking responsibility.		final assessment, which is what we're going to be doing this week when they finished then they have to present it." T11 “I'll use there's a couple of grasp tasks which are new, interesting. So, I've designed one of those already for the obstacle course one, and then I'll do it for the designing game (*), well, I will get them to create like (*a learning activity) for the whole class."		
"Trust" (4)	Giving up control as the teacher and giving trust to students to do the right thing, to engage in learning, to develop actionable plans, to take control of their learning.	Trust based observations of teachers	T3 "And I think it's this like kind of giving up this control. You have to trust them. Right, you have to know that they're goanna make the right choices. You know, I can show them that I trust them."	T3 "Right again, I think you have to be comfortable."	
"Trying to hear what they are saying" (4)	Conversations with students to validate their feelings, emotions, opinions, and ideas, as well as get to know them. Using conversation and listening to children to build a relationship with students and partnership in the classroom.	Conversation with adults	T2 "Because I don't want them to feel like you know, I'm just sort of pushing them aside.”		
"Translate" (4)	Using translation devices and platforms like Google Translate, and other students to facilitate friendships, play-based learning, and learning.	Using students’ native language for all resources with no English version. Translanguaging, which is a strategy and a different code.	T3 "And if a child is learning English, we translate everything."		T3 “Especially words that are important to the unit, like for example, they're going to for this unit, they're going to choose an activist from their own country or a role model if they can't think of an activist,

				things like that they have to have for some other units prior like we've translated the learner profile into all of their languages and then we stick it on the wall, you know, their languages are present a lot in the room.”
"Course about PYP" (3)	Learning the full IBPYP program and how each part in connected to the inquiry-based learning component to have better understanding of how to implement inquiry-based learning within the IBPYP framework. Understanding the expectations of the IBPYP as a whole.		T2 “I think some kind of a course about PYP. So, I think that that just having the training, of having a good solid foundation of like understanding the entire program, and sort of, you know, what's expected of me, I think, would be a good first step to being successful.”	
"Easier online" (3)	Datum related to using devices when teaching.	Not behavior related in the sense of misuse of technology.	T2 “So, I think that having that sort of at your, fingertips has been nice and it's been a struggle this year without having that as well.”	
"Learner Profile" (3)	Learner Profiles to represent the characteristics of students in their ability to enact the mission of the IBO to make the world a better place through more than academic accomplishments (IBO, 2017). The		T5 "So I think that's kind of helpful because you're like, oh, yeah, now you're being like a thinker, or, you know, you're being open minded, so you can kind of put them with the learner profiles that works that well." T11 "I mean, I used to try and use like the Learner attribute profiles and then like my units, I like with all of that stuff as well."	

	profile is defined as inquires, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk takers, balanced, and reflective.		
"School culture" (3)	What items are acceptable and unacceptable in each individual school as directed by management, leadership, and the way the system operates. The expectations of teachers and students as outlined by the school systems and established norms.	Cultural differences between students or staff.	T3 "And they have a hard time that the way that they're managed the admin who manages the school, as far as so I think they have a hard time with that. And you know, I don't know where that sometimes I think the culture of the school determines what is okay what isn't okay."
"Goals" (2)	Datum reflecting that teachers have professional goals that they set for themselves and their students or that are set for them. Datum that refers to how these goals are attained via professional development that is either from the IB, internal, or teachers helping teachers through collaboration and teacher reflection.		T1 “What we didn't actually teach last year, so that's why I added the new goals for myself and also for the students; I understand. Actually, I completed my old goals because we are also learners.”
"Held accountable" (2)	Accountable for implementing inquiry and demonstrating competence in self-learning, colearning, making learning meaningful, and learning made visible.	Evaluation	T3 “So once they do know those things, you need to be walk into a room and see it, you know, where's the language integration? Where's the Math integration? Where's the assessments?”
"Isolation" (2)	Working alone on planning, integration, and not having access to a teaching team.	Location	T3 “I feel like I work in isolation too much to really be truly, also I would like to schedule to totally be different. Also, I think the lack of the team, like I said, that lack of team you're really on your own.”

"Researcher" (2)	Datum referring to teachers as researchers related to their implementation of inquiry-based learning.		T1 “I mean IB teachers not PYP I am not going to say separate or separately we are also researchers.”
"Room" (2)	The size of the classroom and sharing of the classroom with other teachers, grade levels, and other classes.	Meeting spaces, space in the curriculum for inquiry	T2 " But it (pause) because that room is so tiny and I can't have these stations I, It's hard (tone of voice here sounded like this was a real struggle /disappointment for the participant) because that's what I really want."
"Secondary" (2)	Secondary students and primary students working together. Secondary teachers working with primary students.	Learning secondary material	T3 “And I think that would that's I think that needs to happen more. I think it benefits secondary kids and primary kids.”
"Straddling PYP and middle school" (2)	Having to teach more than one type of curriculum, the IBPYP and the Checkpoints curriculum in the same school year. Being a part of the secondary school and their expectations and schedule (a separate school in the same building) and part of the primary school with their expectations and schedule. Being a part of two completely different schools and two different educational philosophies at the same time.		T2 "So, I'm basically bombarded with like and also PD from one end, PD from another, you know, different procedures for every single kind, you know, like primary doesn't do things the same way that middle school and the high school do things so I think it would be really nice if the school was all IB I think this would be better."

"UbD" (2)	Understanding by Design, a method of unit planning and an educational strategy where the teacher plans for what they want students to be able to do by the end of their learning so that each activity is scaffolded along the way to reach the end goal. Often referred to as planning with the "end in mind."	Collaborative planning, planning	T3 "Ah, you know, I guess I use it as a way to get started with the end in mind." T4 "So I think before I was going like lesson by lesson by lesson by lesson, and now, I will plan out an assessment or kind of figure out how these things are going to connect and what's the best way that I can connect them?"	
"Work as a team" (2)	Work with other educators throughout the day and weeks as a team, coplanning and collaborating.	Students working together in groups or teams	T3 "So yeah, some of the things I think would help me is if I could be more flexible with the schedule, work more as a team with people, definitely."	T3 "When we first started it was chaos. Because of our timetable and everything. Ye ah. But so, I'm glad that he enjoyed it. Great."
"Administration support" (1)	Support in facilitating learning and supporting ideas for student-learning that the teacher has. Support for student learning through helping make the ideas of the teacher and students come to fruition.		T9 "And maybe a little bit more support from you know, other members of staff, as far as you know, not particularly the teaching stuff, but you know, maybe the, you know, like admin or some more, you know they're perhaps doing all they can, but you know, maybe just to kind of facilitate, to make things happen rather than just talk about it."	
"Consistency" (1)	Consistent expectations related to implementation of inquiry-based learning from the school, from trainings provided, and in teacher training workshops completed by all PYP staff.	In teacher lessons	T2 “But I think, you know, consistency in sort of in training.”	
"Flexibility" (1)	Datum referring to framework approach to the inquiry-based learning component of the IBPYP and the ability of teachers to		T1 “It's giving flexibility to teachers and the students sometimes you are changing the direction of your inquiry, because of the students actually the most I like about PYP is the flexibility of the curriculum; it's a framework.”	

	cocreate the curriculum with students within the parameters that they see fit and that school systems would like to add to the program of inquiry.		
"I reflect" (1)	Thinking about teaching practice and implementation and development of units with the learners' interests and voice and choice in mind.		T4 "I think I think that I reflect more on or try to give students more voice and choice."
"Know they're important" (1)	A focus on students' progress that is centered on students and making sure they know they are the focus of the learning and classroom activities.	Relationship building	T3 "So whatever their reading, doing, and I try to make sure that they know that I think that they're important, right?"
"Motor skills beyond me" (1)	I believe this is an outlier code and only relates to one specific learning disability the teacher struggled with related to implementing inquiry-based learning. It might need to be recoded and could fit in a new category.		T1 "So, he should have a struggling with the motor skills, or something so it's beyond me actually."
"Partners" (1)	Grade level teaching partner or supporting teacher coplanning and activities.		T3 "But I've been fortunate my partners have been really into taking field trips, but I have had partners before at other schools who hated it."
"Special program" (1)	Datum referring to differentiation through outside developed programs that are content specific.		T1 "Differentiation means I'm using a special program (*)."
"Tomorrow's adult" (1)	Suggested improvements for implementation related to students and the purpose of inquiry-based learning.		T1 "Maybe we should think more about how this child will be tomorrow's adult."

"Seesaw"(1)	Online platform for elementary students where teachers share assignments with students and where students share their work with teachers.	T10 "They also have some, this is the wonder of online learning platform such as seesaw or Toddle, where I can set a student template and they can complete the template with whatever activity that we're doing and showcase their learning through some sort of written or drawing activity."

Note. The symbol * indicates portions of the participants quote that have been changed to protect the participant's identity and are either removed or replaced with a generic representation of what their response was.

Table C1

Subcategories Defined With Example Quotes

RQ. What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?		
Subcategory	Definition	Example quote
"Hang up their stuff"	Hang up student work for visibility of student learning and for class to see their learning growth over time related to their inquiry.	T5 "So yeah, for me, it's really important really, really important that art room is like a celebration of student work, and that they can see you know, their peers and that they can see that like if they do a piece of work it's put on the wall."
"Skills"	Development of knowledge and motor skills for learning independently and learning collaboratively for use in engaging in inquiry-based learning.	T3 "I go concepts and then within the concepts, focus on skills that they may need. Depends on planning." T4 "So I'm kind of looking at that each morning, as we go along and seeing if they're actually using it throughout the same day that we were taught this new rule or this new grammar technique or something like that." T6 "So, a bit of a practice skills are not going to go through like okay, this is the knowledge we want to try and achieve by end of lesson."
"Children learning English"	English language learners and approaches to teaching to help students participate in inquiry-based learning.	T5 "So, you know, it has to be more about sort of being able to do fine motor skills, and being able to, you know, hold a pair of scissors and cut safely and all that sort of stuff."
"Classroom groups"	Student generated and teacher facilitated collaborative learning groups to teach each other.	T6 "Hard at the moment being with COVID has been a little bit tricky with group work as you've probably heard some responses but generally in the past and where I've where I can try and having students in working in small groups to that cooperation is just works so well when they're delivering our message to each other or they're bouncing ideas off each other than just having a tea- me teach from the front and that just doesn't work to the best effect."
"Mark in two different colors"	Using one color to indicate areas that can be expanded on for growth, and another color to indicate areas of mastery.	T4 "So they know that the green means that there's something that needs to be fixed or something that we need to change or reflect back on and I might highlight that and then put a note underneath and highlight the note that I want them to change in green as well. Or if it's something that they did really well, I may highlight it in pink and I may give them a next step or something that I want them to do to further that or continue talking about that."
"Rewarding"	Components of inquiry-based learning teachers found rewarding when implementing inquiry-based learning within the IBPYP.	T7 "But then you find other ways other students like taking charge, of like actually if you need help, I can help you out here I'm doing okay with my pace."

"Teacher to student collaboration"	Teacher scaffolded learning and interactions of engaging in the learning process with students and students' families to generate meaningful learning.	T4 "So in the beginning of a unit, I think I'll yeah, I'll have more focus a lot more on the student questions and what they really want to know and how I can help them figure those questions out, or how I can help tailor a lesson so that they can understand those things more."
"Tools"	Platforms and instructional methods teachers use to implement inquiry-based learning and plan units.	T2 "And the day that I did that lesson, one of my students, one of my fifth-grade students was wearing a sweater with the (*topic of the lesson), on it, which was, I mean, I couldn't have planned it better, right." T3 "And we just kind of started looking at different activist because of we have some toddle posters. I don't know if you know about toddle, but we just started it. I mean, just a year but there was some posters with some activities listed under the learner profile."
"What is best for my students"	Deciding which direction to steer the inquiry and how to narrow concepts down for students to master the learning goals.	T4 "And so it takes I think, just more time to really sit and think about okay, what is going to be the best for my students here?"
"Wonder wall"	A place in the classroom to record on-going student questions related to the inquiry-based learning component of the IBPYP.	T3 "I like and I like to reflect and come back to that Wonder wall at the end of the unit and I also like the kids to write the kids write the lines of inquiry and the central idea." T10 "To set information on the walls that you refer to often such as a word wall, or a poster with vocabulary terms that are vital to your subject."
"Be careful"	When encouraging students be careful in accessing their prior learning.	T3 "You know, that it's you're sort of giving the kids too much independence, you know, primary teachers, we have to be very careful."
"Classism"	In the private international teaching setting the access to education is based on income, not the right to education.	T3 "So we have a lot of kids who are very rich and their local. There's a lot of classism that isn't spoken about. And, you know, we all kind of turn a blind eye to it because they're all paying gobs of money to have their kids come to an IB school."
"Connected to culture"	Cocreating the curriculum together by connecting students' mother tongue to inquiry-based learning activities that are scaffolded from students prior learning and personal experiences.	T3 "A lot of times we have things connected to their culture (*). Especially words that are important to the unit, like for example, they're going to for this unit, they're going to choose an activist from their own country or a role model if they can't think of an activist, things like that they have to have for some other units prior like we've translated the learner profile into all of their languages and then we stick it on the wall, you know, their languages are present a lot in the room."
"Continuously solving problems"	Students having the ability to demonstrate growth over time by solving the questions that students' ask and that teachers develop so that students actively participate in their learning.	T7 "I think that's a big thing with the PYP and inquiry-based learning, and also finding ways in different ways of figuring out problems like real life problems. So then understanding the skills of solving their own problems amongst themselves and individually."

"Decide what they're going to do"	Students cocreating the curriculum together with the teacher by the teacher encouraging students to inquire and collaborate with each other.	T8 "So, I try to give them as many choices as possible. For example, they can choose which United Nations Global goal they want to do, or which way they want to present their work. It might even be sometimes who they want to work with, or things like that." T9 "It should all be about creativity, and then putting their own angle on things and actually leaving the choices to them."
"Field trips"	Real life learning through experiences the teacher purposefully selects that are outside of the classroom and usually occur off-campus.	T3 "Cuz we could do the field trips, you know and he was awesome because he would actually go to the spot before, I would try, we would try to share but we would figure out ways that like we would take photos or we would have like a game so that when we got to the field trip that the kids would have to like figure those things out. You know what I mean?"
"Focus on integration"	Intentionally designing inquiry-based learning activities through collaboratively designing the units of inquiry and lines of inquiry in a way that transcends across all classrooms and interactions students have with faculty and staff.	T8 "And that, like, we're constantly making connections between different subjects, different units of inquiry, different people, different places, and integrating that through all of our different curriculum areas, but with like, with a focus on real life, purposeful problems and solutions."
"Ask"	Facilitate learning through teacher questioning.	T5 "And then when you start like questioning, you, they all realize that they do know something, and that they're you know, they're words that they are familiar with that sort of thing."
"Kids have to understand"	Helping students to understand through by showing them examples and using formative assessment to inform students of their learning so they can continue to grow.	T3 "The kids have to understand what you're doing. You know, I just had to show them the picture of inequity, I don't know if you've ever seen that there's equality and then there's inequity a Yeah, so you know, inequity that's going to probably be main focus for the whole unit."
"Managed"	Being managed by a series of managers, General and Assistant General Managers who direct the operations of the school and direct the school leadership team of administrators.	T3 "And they have a hard time that the way that they're managed the admin who manages the school, as far as so I think they have a hard time with that. Probably because we have principles who which I, you know, I'm sitting here talking about action right? But their principles they just cannot work at a school where it's so blatantly obvious that the money is being taken."
"Mistakes something to learn from"	A growth mindset implemented within the classroom where mistakes are viewed as part of the ongoing learning process and to learn, not a failing.	T7 "Like when even when I'm teaching, or I use a hardware like seeing this is when I made a mistake, and this is how I can be better and modeling those kinds of things that "Hey, it's okay that we can admit that we're wrong and for a minute that we've made a mistake and then go forward from there."
"Need"	Guidance primary international teachers view as necessary for implementing inquiry-based learning within the IBPYP.	T3 "You know, they need to have like a strong buddy who has had some or they need to have some kind of training at the school in order to help those new teachers to

		navigate all of that information and also not to be expected."
"Own opinions"	Students formulating their own thoughts and ideas about the concepts they are learning and expressing their own thoughts and ideas.	T3 "And they didn't have to agree like they can have their own opinion."
"Pairing"	Students being provided the opportunity to teach each other in pairs.	T4 "Normally, I will just do a random pairing of two to three students to have them work together."
"Schedule"	The yearly and daily school calendar schedule and scheduled duties and responsibilities of primary international teachers.	T5 "It's up to us to make, you know, to find the time and our schedules as specialists are pretty crazy." T10 "And because of how our subject specific schedules work or how the timetable works, or those sorts of things, there are differences in the difficulties or the successes that we face." T3 "I wish that the schedule I think the schedule causes us not to have the time."
"Search for solution"	Students are encouraged to ask questions and search for the solutions to problems as an active participant in their learning.	T2 "So, they were also trying to search for solutions to some of our online conundrums with supply issues." T5 "Solutions to problems, all that sort of thing."
"Social emotional"	Using social emotional learning to collaboratively learn and develop relationships between children with children and between children with adults.	T3 "I think I focus a lot on social emotional, and that idea of reflection. It just helps them to, to reflect if they're like really mad (taking me to the corner which has posters and verbal and visual representations of how to use it)."
"Strategy"	A method that primary international teachers use to implement inquiry-based learning.	T7 "So, I guess that's a strategy I like to use is you know, get to know what they know first and then guide them in the right direction."
"Students learning English"	English language learning instructional methods to provide access to inquiry-based learning for all students.	T6 "The ELL like English language learning is something that I've been having to skill myself up on how I deliver a lesson."
"Students with needs"	How primary international teachers help students with learning disabilities, behavioral management disabilities, or medical disabilities participate and access inquiry-based learning.	T8 "So I'll usually give them the research tools and just hand them over to them."
"System comparison"	International teachers coming from various educational training programs and school systems from all over the world, comparing how they implemented inquiry-based learning within the IBPYP.	T3 "You get the whole comparison between the British and American system or the UK system, sorry, New Zealand also Australian systems. So, there's also that aspect of it."
"Take action on learning"	Student agency to take their learning and act on it to actively expand their understanding and to generate positive social change within their academic community or within the larger world.	T3 "I would say taking action on their learning. How are you going to try to you know, make some change happen? Right." T7 "And using the inquiry wheel of you know, tuning in finding out sorting out making conclusions, you know, going through that and then taking action going through that whole the whole circle, and that's what works for them."
"Teamwork"	Students taking the lead and working together as a team to solve problems through exploration and through collaboration to solve problems related to sharing resources or creating resources.	T2 "So, I think you know, it's a lot of it's a lot of teamwork. So, I think you know, those are just sort of we're problem solving and trying to establish routines to problem solve before there's a problem so there's not a need to problem solve, like, you know, one on one." T8 "So they're like leading."

"Think about what they already know"	Students participating in metacognition to access their prior knowledge through reflection.	T10 "And that could be either a pre assessment, where we are thinking about okay, what do you already know about this? How much do you already know about this?"
"Transfer of knowledge"	Students applying their prior knowledge to new situations and contexts based on student interest.	T9 "So they might I don't know design an experiment or something to show like in my last school they had to do to prove or show highlight what gravity is. So I they were allowed to go away and to research it and they could make a project or video an experiment that they've done to show different scientific, you know, things that we've been learning about so make it all very hands on."
"Unit of inquiry board" (UOI)	A place in the room where the IBPYP unit of inquiry's transdisciplinary theme's focus is posted along with the key learning goals and concepts along with a visual display of ongoing student learning posted. The UOI board is used for students to see their learning process throughout their inquiry-learning related to the IBPYP theme for their unit.	T4 "Yeah, well, for we have our UOI board or our UOI wall. Or so we'll have our transdisciplinary theme or our, our key concepts, they're all there and as we're going through the things that we've learned, those things are going on the on that board as well."
"Using outside"	Environments other than the classroom for students to participate in hands on learning that is linked to real life learning and experiences, bringing specialists from outside of the classroom in to be experts in an area that students are participating in inquiry-based learning in for their current unit.	T1 "And last year, there was a unit about weather, and we made a creative story outside so they choose their own (*component), about rain, * like rain, snow, wind, and they choose, by themselves, hey I can create (*a representation of rain) with that." T8 "Because it's nice to them to have some real technical tools to get a hold of." T9 "So for example, with math or if we're learning about time, we might do races to time each other and make it link it to real life learning."
"Visual thinking maps"	Recording the learning process as it unfolds with the ability to adjust thoughts and understanding as they change by using visual routines to access prior knowledge as well as engage in reflection throughout the learning process.	T10 "Yep. So, one thing that I like to use in my (*) programs, is lots of visual thinking routines."; "So using writing as well as drawing to consolidate and explore different concepts I think is really important."
"Voted"	Engaging in democracy within the classroom by having students make choices through voting to facilitate interactive experiences and social development of intelligence for collaborative problem solving.	T3 "Then, we voted on what learner profile we thought was most important in our classroom." T11 "And then you know that you guys voted as a class like save a vote on the game."
"Writing goes on wall"	The ability to decide what student learning is hung up and the use of putting all student writing and learning on the wall as a visual display throughout the unit of inquiry so that students can assess their understanding during inquiry-based learning.	T3 "And any writing goes on the wall."

Note. The symbol * indicates portions of the participants quote that have been changed to protect the participant's identity and are either removed or replaced with a generic representation of what their response was.

Table C2

Categories Explained and Aligned With the Reggio Emilia Approach and Participants' Quotes

RQ. What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program.		
Category	Explanation	Example quote
"Need"	What primary international teachers view their needs are related to implementing inquiry-based learning that is learner-centered, and to plan their units.	T2 "Or, you know, that not only just the size of the room, but certain things in the room that would help me implement more inquiry-based learning, right; But I think I think it comes down to more of like school resources and you know, nobody can change the fact that I need my own room." T1 "Six weeks in the end of six weeks, I think that children start to learn about the central idea, but then they will develop a new idea or they will create something, you just finished. Maybe the time or the, there should be a balance between the content that's asked and also we have to wrap up"
"Collaboration"	Teacher planning together for integration across classes and with grade level partners.	T1"And I said, see, we are always, I mean homeroom teachers are seeking for collaborations we are doing meetings but after then what? No one is keeping up because no one has time. Shall we repeat it next year?"
"Workshop"	IBPYP Inquiry-based learning workshop for teacher professional development.	T2 "I did and as I mentioned before, we did have an opportunity to take that inquiry I guess it was an inquiry workshop, but I found it to be lacking." T1 "Teachers also needs to be updated, decrease the price of workshops."
"Students with Needs"	How primary international teachers help students with learning needs such as learning English or with learning disabilities, behavioral management disabilities, or medical disabilities participate and access inquiry-based learning.	T3 "And if a child is learning English, we translate everything."
"Why"	Reasons teachers should have access to teacher professional development.	T1 "What we didn't actually teach last year, so that's why I added the new goals for myself and also for the students."
"UbD"	Understanding by Design and planning with the intended outcome or the end in mind. Know what you want students to achieve by the end of a unit in order to scaffold and facilitate learning to guide them to that understanding.	T3 "And the backwards design, you know, the UbD kind of starting with what you want the kids to end up with, sort of working backwards. Is that what you mean by implementation? I mean, it's just such a big thing."
"Intentional"	Choosing activities, lessons, provocations, and learning experiences with the intention of achieving the learning outcomes within the unit of inquiry and focused on core concepts.	T2 "So, I'm more I like to have (not audible) unfortunately, though, I, again, I, since I share the room, I don't have full say on what goes up, or, you know, I can't control somebody else, you know, we can talk about it and sort of decide but I think, you know, she's more so on the put everything up,

		whereas I'm not It's not that I'm a minimalist, but I do think there should be, it should be intentional." T7 "That's another thing is to look it up, find some current news, you know, see what's happening in the news today that those kinds of environments are things for the environment or tools and they have."
"Implementation strategy"	Strategies primary international teachers use to implement inquiry-based learning that is learner-centered where students take an active role in their learning and teachers guide students through formative assessment.	T7 "So one thing that's my bread and butter is using anchor charts and always referring back to us writing strategies, math strategies, reading strategies, inquiry strategies, life strategies, like life skills, social skills, strategies, and just say hey, remember even classroom rules with like, our essential agreements and you know, what we have is, what's your job and what's my job, and going back and forth with that, keeping a schedule, keeping a timetable, using all those things that we can and you know, to organize ourselves and organizing us as a class and individual."
"Help"	Areas primary international teachers view they need help with to implementing inquiry-based learning, and what topics or areas training programs could focus on.	T6 "Definitely a learning experience for me to teach this student that doesn't have much English."
"Have input"	Students drive the unit plan through their own questions and input, cocreating the unit with teachers.	T5 "There's like room for it to change. If you know a student has a question, we're like, oh, that's a that's really interesting question and we decided on a research it a bit on the iPads and go in a different direction than that's completely fine. It's not as rigid."
"Guide"	Providing new staff with an experienced teaching partner who acts as a guide to train them on implementing inquiry-based learning within the IBPYP.	T6 "That's always good, but a lot of professional developments done within your own teams."
"Formative"	The use of formative assessment to inform students of their learning process by assessing strengths and weaknesses through reflection as self-assessment to implement inquiry-based learning that is learner-centered.	T7 "See, Think wonder doing things like that." T8 "I'll show them the video and then we'll think about it and one of our own tasks, like how do we be really, really specific and give useful feedback and kind of feedback."
"Focused on essential elements"	The view of primary international teachers that the components of the full IBPYP program as a focus to implement inquiry-based learning because each component of the full IBPYP program is interconnected to generate success in implementing the inquiry-based learning component.	T3 "So, if teachers have yeah I mean, if they have no idea, the learner profiles, the attitudes, skills, the concepts, you know, there's so many things juggling at one time, you know, the transdisciplinary themes, how are they? That's a lot of information to absorb, right." T10 "They include learner profiles, key concepts, we have transdisciplinary themes we have all of these sorts of overarching elements that are included in every single unit. I feel like they all play a role within the inquiry program that the PYP introduces into education."
"First step to being successful"	The trainings that primary international teachers view as the first topics to focus on for successful implementation of	T2 I think some kind of a course about PYP; So ,I think that that just having the training, of having a good solid foundation of like understanding the entire program, and sort of, you know, what's

	inquiry-based learning within the IBPYP.	expected of me, I think, would be a good first step to being successful.
“Facilitate”	Guide the students through teacher to student collaboration, choosing what is best for their students, democracy in education through student votes, and by focusing on integration. The purpose of facilitation is to make learning meaningful and to guide students to participate in colearning.	T9 “So you facilitate the learning. You just kind of give them the overview of what they should learn and let them do a lot of research.” T9 “If they asked me a question, "I don't know, but I'm sure there's somebody in the class that does", for example, and the same if somebody asks me a question, and I do know the answer, for example, I'd rather somebody else in the class gives them the answer because, you know, it's better coming from a peer surely than from a teacher and, you know, we can share different ideas we might ask a few other students for different angles and perspectives on that.” T4 “And I guess we're as the teacher, we're just there to kind of help give them ideas of things that they might not have noticed yet or things that they might not have been seen just yet and allow them to come to those conclusions on their own."
“Explore”	Students have a voice and choice in what they would like to explore related to the UOI and accomplish this through deciding what they’re going to do, classroom groups, expressing their own opinions, participating in teamwork, and developing skills that enable them to transfer knowledge.	T9 “Well, my experience so far is kind of letting the child it be very child focused and let them be almost you're the teacher.” T9 “And it's like, wow, these kids are very knowledgeable when we allow them the space and the freedom to be able to do their own, you know, as long as it's kind of related to what they should be learning about and it's, it's really interesting, their knowledge.” T9 “And so I'm learning along the way very much but I think there's also elements through the kinds of curriculums and schools that I've worked where they do a lot of research based learning they like I said, they can learn from each other, they can learn from their family.”
“Essentials”	Primary teachers view certain things as essential in aiding them in planning their unit to implement inquiry-based learning.	T10 “They include learner profiles, key concepts, we have transdisciplinary themes we have all of these sorts of overarching elements that are included in every single unit.” T10 “Key Concepts sort of make a thread between different units of inquiry by identifying different areas that students are exploring.”
“Encourage”	Primary international teachers view encouraging students through classroom groups, asking them questions, searching for solutions, and being careful in how much freedom they are given and how much they are restrained as how they implement inquiry-based learning that is leaner-centered.	T11 “So really encourage them to think (*). T9 “That's something that I've kind of always tried to encourage, but possibly I'd say the thing with the PYP to encourage more independence.”
“Elitism of IB”	The elitism of the IB in the private international school setting that perpetuates classism and an attitude of purchasing cultural currency from parents.	T3 “Yeah, what is that called? Cultural currency, right? Yeah. That's what they're buying, you know, coming to our schools, and I'm getting kind of sick of that rhetoric in IB. I would say, that's my biggest criticism, I, you know, “I'm rich, I can send my kid to an IB school.” I also think there's not enough there's sort of this assimilation, you know, like that them, I think students are expected to be like the

		native teachers that are speaking to them in English.”
“Difficult”	Difficulties that primary international teachers have to overcome to implement inquiry-based learning.	T5 "I think sometimes the language used in like the PYP curriculum can be it's not like very user friendly for the students."; "So you have to kind of simplify things like when you read like the central idea, it's it's almost like it's directed at like university level students." T6 “The difficulties, difficulties to try and achieve sometimes all the, if you're looking at the PYP even scope, the scope and so the sequence to try and achieve it all at times.”
“Differentiation”	Creating learning activities that are individualized by each student to implement inquiry-based learning.	T3 “Or, yeah, so you know, there's like different it goes kind of according to the kids, what they want, I guess.”
“Combined with language arts and math”	Planning units that incorporate continuous connections to language arts and math within the UOI as a method to implement inquiry-based learning.	T3 “We usually try to combine language arts and math.”
“Classroom management”	Using social emotional learning by directing students through scope of choice related to behavior and focusing on classroom roles, procedures, and routines while using choice action related to self-assessing behavior and expectations and showing students their behavior for self-assessment to make better choices in the future.	T3 “So you have to start to think about you know, like those little like the dialogue that the kids have. And that's just from, you know, we have three main rules in the in the class, take care of yourself, take care of others and take care of this place. And that's it.”
“Chunk lessons”	Chunking lesson is a planning method primary international teachers use to scaffold instruction, make learning meaningful, to plan for self-learning for inquiry-based learning.	T2 “But there is you know, I tried to sort of chunk my lesson into there's perhaps a demo of a skill that that we're practicing and if it's you know, then we do first we work on a skill and then there's usually a project that incorporates that skill.”
“Challenges”	Challenges related to the time required to determine what is best for students within the broad framework of the IBPYP, the availability of resources, presented by behavior and challenges related to student behavior, and ability to demonstrate their level of learning through learning made visible.	T6 “Yeah, that's six weeks earlier with ELL that's actually quite can be quite challenging when students don't have the language base, to then go into further conceptual, some of these conceptual vocabularies so together, try and get that message across differently without that language, maybe using a different forms.” T2 “We don't often have class outside because of the supply issue.” T2 “Okay, um, yes, I mean, obviously, of course, it is visible, but I think that I think sometimes it can be the learning cannot be shown in their work, right?” T3 “You know, also, I don't feel like I have enough time to talk to specialists. “
“Agency”	Taking an active role and participate in learning	T6 “Agency is the main one. So, I offer them a lot of choices are given to students.”
“Problem”	Having teachers come from various international teaching backgrounds where they compare their experiences from their home countries to	T3 “I think that's a problem for primary that I've noticed with because you have teachers coming from the UK, or New Zealand or Australia, and then you have the US and they all have different styles. “

	implementing inquiry-based learning within the IBPYP.	
“Reflection”	Use of student reflection/metacognition throughout the inquiry to scaffold and guide students in their active learning used in inquiry-based learning.	T5 “And yeah, I hope that the lessons are kind of that the students feel like they have like the support to sort of make mistakes and realize that like making mistakes is part of you know, being in school like it's not actually should be seen as that thing I think it should be seen as something to learn from.”
“Room its’ theirs”	Room arrangement through self-learning and making sure the room is theirs.	T3 “They don't have any qualms about I would say my part of the room is probably 20% and the rest of it they know that they can go into any part of the rest of the room and its there's. We have a share box of a shared box where there's all the scissors and the glue and the they know use share box.”
“Schedule”	The yearly and daily school calendar schedule and scheduled duties and responsibilities of primary international teachers. They view improvements to flexibility, such as a flexible schedule would enable them to work as a team, and as a method to improve implementation of inquiry-based learning.	T3 “So yeah, some of the things I think would help me is if I could be more flexible with the schedule, work more as a team with people, definitely.”
“Special spots”	Special spots used as a reward and for instructional time to make learning meaningful as a method to implement inquiry-based learning along	T3 “So, normally when it's not COVID time I have like little special spots, kind of like set up. So I have like the princess spot. And then I have like the little tent spot and the mat spot, you know, there's like four, I make those four really good spots, right. “
“Teach each other”	Students teach each other about what they have learned or discovered through working in pairs and colearning as a method to implement inquiry-based learning.	T4 “Sometimes when they're working together, they will teach each other how to do the problem.”
“The future”	Future ways to combat some of the barriers that limit implementation would be for the school to think of the student as tomorrow’s adult and to provide teacher agency in their implementation of inquiry-based learning.	T1 “In the future, they will work for teacher agency as, well.”
“Tools”	They view the use of planning their units using the IB learner profile as a tool to implement inquiry-based learning. They use Toddle as a tool to plan units and for collaboration with other teachers to integrate with all content and homeroom teachers in relation to the inquiry-based learning component of the IBPYP.	T5 “And I yeah, I think that things like sharing work on toddle, like we have the classroom journals where we post students like working every week on their different units.”
“Translanguaging”	Using students mother tongue during learning to encourage inquiry and collaboration among students that is connected to students’ culture.	T3 “So I do a lot of things with their own language.”

Note. The symbol * indicates portions of the participants quote that have been changed to protect the participant's identity and are either removed or replaced with a generic representation of what their response was.

Appendix D: Theme Analysis Example

Table D1

T1 Codes, Categories, and Themes That Answer the Research Question

Research Question What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?				
A Priori Codes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
	"Meetings then what?" (10)		"Collaboration"	"Limitations"
	"Tomorrow's Adult" (1)		"The Future"	
	"Teacher Agency" (1)			
	"Resources" (8)			
	"School not flexible" (4)			
	"Time" (8)			
Learning made visible (6) Self-learning (4) Making learning meaningful (1)			"Tools"	"Flexibility"
Making learning meaningful (4) Self-learning (1)	"Student-centered instruction" (4) "Special Program" (1) "Flexibility" (1)		"Differentiation"	
Self-learning (11) Making learning meaningful (9)			"Using Outside"	
Colearning (2) Learning made visible (2) Making learning meaningful (1)			"Skills"	"Explore"
Colearning (2) Making learning meaningful (4) Self-learning (8)			"Transfer knowledge"	
Colearning (5)		"Classroom Groups"	"Pushing Students"	"Guiding"
Colearning (6) Making learning meaningful (4) Learning made visible (1)	"Student-centered instruction" (2)			
Colearning (1) Making learning meaningful (1)	"Motor skills beyond me" (1)		"Students with Needs"	
Learning made visible (13) Self-learning (1)			"Reflection"	
	"Integrate" (6)		"Collaboration"	
	"Goals" (2)		"Why"	"Training"
	"Researcher" (2)			
	"Expensive" (4)		"Workshops"	

Table D2

T2 Codes, Categories, and Themes That Answer the Research Question

Research Question What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?					
A Priori Codes (frequency of occurrence)	Subcodes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
		"Room" (2) "Straddling PYP and middle school" (2) "Resources" (3)		"Difficult"	"Limitations"
Learning made visible (1)		"Classes are large" (1) "Supplies" (12) "Behavior" (8)		"Challenges"	
Self-learning (4)				"Tools"	"Intentional"
Making learning meaningful (5) Learning made visible (2)			"Assessment"		
Self-learning (3)			"Online"		
Self-learning (2) Making learning meaningful (1)				"Using Outside"	
Colearning (8)			"Teamwork"		
Making learning meaningful (5)		"Independent" (5)	"Decide what they're going to do" "Rewarding"	"Explore"	
Making learning meaningful (4)					
Colearning (4)				"Difficulties"	"Guiding"
Making learning meaningful (5)		"Providing them with inquiry" (2)			
Colearning (1) Making learning meaningful (3)		"Easier online" (3) "Behavior" (7)		"Classroom management"	
		"Responsible" (5) "Behavior" (3) "Questions" (9) "Trying to hear what they're saying" (4)		"Teacher to student collaboration"	
Learning made visible (7)				"Assessment"	
Colearning (1) Making learning meaningful (3)			"Chunk lesson"	"Plan units"	
Making learning meaningful (5) Colearning (1)		"Integrate" (2) "Toddle" (9)	"Collaboration" "Search for solution"		
Making Learning Meaningful (9)			""Ask""	"Encourage Them"	
		"Course about PYP" (3) "Consistency" (1) "Other teachers" (2)		"First step to being successful" "Guide"	"Training"

Table D3

T1 and T2 Data Analysis Combined to Answer the Research Question

Research Question What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?					
A Priori Codes (frequency of occurrence)	Subcodes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
		“Meetings then what?” (10)		"Collaboration"	
		“Tomorrow’s Adult” (1)		"The Future"	
		“Teacher Agency” (1)			
		“Resources” (11)			
		"Room" (2)		"Difficult"	"Limitations"
		"Straddling the PYP and middle school" (2)			
		"Behavior" (8)			
		"Supplies" (12)			
Learning Made Visible (1)		"Classes are large" (1)		"Challenges"	
		“School not flexible” (4)			
		“Time” (8)			
Self-learning (3)					
Learning made visible (6)					
Making learning meaningful (5)			“Tools”		
				"Intentional"	
Self-learning (13)					"Flexibility"
Making learning meaningful (10)			“Using Outside”		
Making learning meaningful (4)		“Student-centered instruction” (4)		“Differentiation”	
Self-learning (1)		“Special Program” (1)			
Colearning (2)					
Making learning meaningful (1)			“Skills”		
Learning made visible (2)					
Colearning (2)				"Explore"	"Guiding"
Making learning meaningful (4)			"Transfer of knowledge"		
Self-learning (8)					
Colearning (8)			"Teamwork"		

Making learning meaningful (5)	"Independent" (5)	"Decide what they're going to do"		
Making learning meaningful (4)		"Rewarding"		
Colearning (5)		“Classroom Groups”		
Colearning (6)	“Student-centered instruction” (2)			
Making learning meaningful (4) Learning made visible (1)			“Encourage ”	
Making Learning Meaningful (9)		“Ask”		
Colearning (1)		"Search for solution"		
Making learning meaningful (5)	“Providing them with inquiry” (2)		"Difficulties "	
Colearning (4)				
Colearning (1)	“Easier online” (3)		“Classroom managemen t”	
Making learning meaningful (3)	“Behavior” (7)			
	“Responsible” (5)		“Teacher to student collaboratio n”	
	“Behavior” (3)			
	“Questions” (9)			
	“Trying to hear what they’re saying” (4)			
Colearning (1)	“Motor skills beyond me” (1)		“Students with Needs”	
Making learning meaningful (1) Learning made visible (20) Self-learning (1)			“Reflection ”	
Colearning (1) Making learning meaningful (3)		"Chunk lesson"	"Plan units"	
Making learning meaningful (5)	“Integrate” (8)	“Collaboration”		
	"Toddle" (9)			
	“Goals” (2)		“Why”	
	“Researcher” (2)			
	“Expensive” (4)		“Workshops ”	
	"Course about PYP" (3)		"First step to being successful"	"Training"
	"Consistency" (1)			
	"Other teachers" (2)		"Guide"	

Appendix E: Finalized Theme Analysis Table

T1–T11 Codes, Categories, and Themes That Answer the Research Question

Research Question	What are primary international teachers' perspectives about their implementation of inquiry-based learning within the IB Primary Years Program?			
A Priori Codes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
Colearning (1)	“Broad” (4)	"What is best for my students"	“Challenges”	“Limitations”
		“Students learning English”		
Learning Made Visible (1)	"Behavior" (8)			
	"Time" (28)	"Schedule"		
	“School not flexible” (5)			
	"Supplies" (14)	“Managed”		
	“Classes are large” (1)			
	“School culture” (3)			
	"Can't go right now" (1)	"Field trips"		
	"Partners" (1)			
	"Isolation" (2)		"Collaboration"	
	“Meetings then what?” (10)			
	"Tomorrow's adult" (1)		"The future"	
	“Teacher agency” (1)			
	"Buying cultural currency" (11)	"Classism"	"Elitism of IB"	
Making learning meaningful (1)	"Resources" (24)		"Difficult"	
	"Language of the PYP" (2)			
	“Broad” (3)			
	“Room” (2)			
	“Straddling the PYP and middle school” (2)			
	“Wide age range” (7)			
	“No support” (4)	“Students with needs”		
	"Different styles" (4)	"System comparison"	"Problem"	
A Priori Codes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
Self-learning (6)	“Broad” (4)		"Intentional"	"Flexibility"

Colearning (2)	“Concept-based learning” (1)			
Learning made visible (1) Self-learning (1)	“Broad” (3)	“Focus on integration”		
Colearning (2) Making learning meaningful (11) Self-learning (47)	“Trust” (4)	“Using Outside”		
Learning made visible (13)		“Hang up their stuff”		
Learning made visible (2)		“Writing goes on wall”		
Self-learning (5) Colearning (1) Learning made visible (6) Making learning meaningful (5)		“Tools”		
Making learning meaningful (7)	“Behavior” (2)		“Special spots”	
Self-learning (6) Colearning (6)			“Room its’ theirs”	
	“Work as a team” (2)		“Schedule”	
Making learning meaningful (10) Learning made visible (1)	“Student-centered instruction” (4)		“Differentiation”	
Self-learning (1)	“Special Program” (1)			

A Priori Codes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
Making learning meaningful (5) Colearning (1)	"Independent" (5) "Concept-based learning" (7)		"Explore”	"Student-centered instruction"
Making learning meaningful (37) Learning made visible (2) Colearning (2)	"Independent" (10) "Participate in learning" (4)	"Decide what they're going to do"		
Making learning meaningful (2) Colearning (14)		"Classroom groups"		
Making learning meaningful (7)		"Own opinions"		
Making learning meaningful (4) Colearning (10) Colearning (4)	"Independent" (3)	"Rewarding" "Teamwork" “Skills”		

A Priori Codes (frequency of occurrence)	Codes (frequency of occurrence)	Subcategories	Categories	Emergent Themes
Making learning meaningful (1) Learning made visible (4)				
Colearning (2) Making learning meaningful (8) Self-learning (11)		"Transfer of knowledge"		
Making learning meaningful (5) Colearning (11)			“Facilitate”	
Making learning meaningful (12) Colearning (8)	“Responsible” (5) "Providing them with inquiry" (7) "Independent" (7) "Families in center" (1) “Behavior” (3) “Provocation” (13) “Questions” (14) “Trying to hear what they’re saying” (4)	“Teacher to student collaboration”		
Making learning meaningful (1)	“I reflect” (1)	“What is best for my students”		
Making learning meaningful (5) Colearning (4)	“Providing them with inquiry” (2) "Broad" (3) “Language of PYP” (4) “Integrate” (3)	"Difficulties"		
Making learning meaningful (1) Colearning (1)	“Know they’re important” (1)			
Colearning (3) Making learning meaningful (8)		“Voted” “Focus on integration”		
Colearning (1) Making learning meaningful (1)	“Motor skills beyond me” (1)		“Students with Needs”	
Colearning (3) Learning made visible (1)	“Translate” (4) “I reflect” (1)	“Children learning English”		
Making learning meaningful (5)	"Families in center" (2) “UbD” (1)	"Teacher to student collaboration" “Strategy”	“Translanguaging"	
Making learning meaningful (5) Colearning (10) Learning made visible (3)	“Easier online” (3) “Routine” (4)	“Connected to culture”	“Classroom management”	

Making learning meaningful (3) Self-learning (3)	“Behavior” (7)			
Learning made visible (3)	“Choice action” (4) “Show them” (1)	“Social emotional”		
Colearning (1) Colearning (3) Self-learning (1) Learning made visible (2) Colearning (4)		"Rewarding" “Pairing”	“Teach each other”	“Learner-Centered”
Making learning meaningful (2) Colearning (13)		“Continuously solving problems”	“Formative”	
Learning made visible (2) Making learning meaningful (5)		“Visual thinking maps”		
Learning made visible (2)		“Mark in two different colors”		
Learning made visible (4)	“Provocation” (1)	“Wonder wall”		
Learning made visible (34)	“Provocation” (3)			
Colearning (7) Self-learning (3) Making learning meaningful (8)	"Process" (3)			
Colearning (3) Making learning meaningful (4)		“Skills”		
Learning made visible (5)	“Summative assessment” (3)			
Learning made visible (58) Self-learning (1)	“Process” (16)		“Reflection”	
Making learning meaningful (3) Learning made visible (4) Colearning (2)		“Think about what they already know”		
Learning made visible (5)		“Unit of inquiry board”		
Learning made visible (2) Self-learning (1)	“Summative assessment” (1)	“Skills”		
Colearning (1) Making learning meaningful (2)		“Wonder wall”		
	"Seesaw" (1) “Toddle” (7)	“Tools”		
Self-learning (1)	"Process" (1)	“Mistakes something to learn from”		

Learning made visible (2)		"Hang up their stuff"		
Learning made visible (1)		“Mark in two different colors”		
Colearning (5)		“Classroom Groups”	“Encourage”	
	"Independent" (1)			
Learning made visible (1)	“Student-centered instruction” (2)			
Making learning meaningful (4)	“Show them” (2)			
Colearning (10)	“Trust” (2)			
Making learning meaningful (10)		“Ask”		
Learning made visible (1)		"Search for solution"		
Making Learning Meaningful (9)		“Be careful”	"Agency"	
	“Provocation” (2)			
	“Participate in learning” (3)	“Take action on learning”		
Learning made visible (4)	"Show them" (1) “Process” (10)	“Kids have to understand”	“Implementation strategy”	
Learning made visible (3)		“Hang up their stuff”		
Making learning meaningful (1)	"Integrate: (6)			
Learning made visible (11)				
	“Resources” (33)		“Need”	
Making learning meaningful (7)			“Have input”	"Plan units"
	"Other teachers" (1)		“Essentials”	
Self-learning (4)	“Families in center” (5)			
Colearning (5)	“Concept-based learning” (9)			
	“Provocation” (1)			
Making learning meaningful (9)			“UbD”	
Self-learning (2)				
	“Learner profile” (3)		“Tools”	
	“Toddle” (5)			
Making learning meaningful (3)			“Combined with Language Arts and Math”	
Making learning meaningful (5)	“Secondary” (2)		“Collaboration”	
Learning made visible (1)	“Integrate” (29)			
	"Toddle" (9)			
Making learning meaningful (2)	"Teacher agency" (8)		"Need"	
	"Administration support" (2)			
	"Time" (20)			

Colearning (1)			"Chunk lesson"	
Making learning meaningful (3)				
Making learning meaningful (2)			“Need”	"Training"
	“Goals” (2) “Researcher” (2)		“Why”	
	“Expensive” (4)		“Workshops”	
	"Course about PYP" (3) "Consistency" (1)		"First step to being successful"	
	"Other teachers" (12) “Space” (3)	"Need"	"Guide"	
	“Space” (7) “Held accountable” (2)		“Focused on Essential Elements”	
Colearning (4)		"Children learning English"	“Help”	
Self-learning (1)				