ABSTRACT

Kristin Halligan, COLLABORATIVE CURRICULUM DEVELOPMENT AND IMPLEMENTATION: INQUIRY-BASED LEARNING AS A CENTERPIECE FOR SCHOOL CHANGE (Under the direction of Dr. Matthew Militello). Department of Educational Leadership, March, 2019.

Transdisciplinary, inquiry-based curriculum and pedagogy can positively affect teacher practice and student learning when educators collaboratively create a community of learners, engage in developing a cohesive curriculum, and use inquiry as a primary pedagogical approach. The study documented the journey of a small international school in the process of adopting the International Baccalaureate Primary Years Programme (IB PYP). The goal of the study was to co-create and implement a program using inquiry-based pedagogy.

Participatory action research (PAR) methodology included three iterative cycles of inquiry in which we, as co-practitioner researchers, collected and analyzed these data: observations, meeting minutes, our program of inquiry, unit planners, teacher reflections, surveys, memos, artifacts from parents, and IB reports. Data were coded using the existing IB framework (deductive) and emerging themes (inductive) that became evident in the PAR cycles.

Three key claims emerged: (1) Experiential, authentic, transdisciplinary approach leads to growth in all sectors of the school community: teachers, parents, students and leaders. (2) Building a collaborative environment using a strong curricular framework (IB) leads to positive changes in teacher planning that supports student-driven learning. (3) Achieving a balance between authoritative and collaborative leadership is tricky.

Potentially, the PAR methodology provides a systematic way to improve education at international schools. Every international school is unique, and the PAR process enables schools to improve the education for the community based on its needs. The PAR consisted of iterative action research cycles involving teachers, students, parents and leaders to create positive change.

Including all stakeholders using a distributed leadership approach while transitioning to be an IB PYP school gave our community members a voice and empowered them to be involved in the process of collaborative curriculum building. The IB PYP provided a strong curricular framework that guided our work; however, it was successful because a team of committed teachers and leaders engaged in co-developing and implementing the transdisciplinary units of instruction. Collaborative curriculum development and implementation provided experiential learning opportunities for teachers and modeled the pedagogy intended to be used in our instructional practices.

COLLABORATIVE CURRICULUM DEVELOPMENT AND IMPLEMENTATION:

INQUIRY-BASED LEARNING AS A CENTERPIECE FOR SCHOOL CHANGE

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COLLABORATIVE CURRICULUM DEVELOPMENT AND IMPLEMENTATION:

INQUIRY-BASED LEARNING AS A CENTERPIECE FOR SCHOOL CHANGE

by

Kristin Halligan

APPROVED BY:

DIRECTOR OF DISSERTATION:_____

Matthew Militello, PhD

COMMITTEE MEMBER:_____

David Siegel, PhD

COMMITTEE MEMBER:_____

Marjorie Ringler, EdD

COMMITTEE MEMBER:_____

Lynda Tredway, MA

CHAIR OF THE DEPARTMENT OF EDUCATIONAL LEADERSHIP:

_____

Marjorie Ringler, EdD

DEAN OF THE GRADUATE SCHOOL:

_____

Paul Gemperline, PhD

DEDICATION

In loving memory of Edward "Gramps" Burau and Nancy Halligan.

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CHAPTER 1: NAMING FOCUS OF PRACTICE

Introduction

The Primary Years Programme (PYP) of the International Baccalaureate (IB) was a new program as of School Year 2016-17 at the Wells International School in Bangkok, Thailand. The mission of Wells is to deliver a quality, college preparatory education to a diverse, international group of students in a nurturing environment of creativity and discovery, which inspires a passion for learning, fosters a sense of wonder and curiosity, and teaches responsible global citizenship through a collaboration of work and home. Wells International School high school campus, one of three campuses, adopted the IB diploma programmed in 2012; the high school shares the On Nut campus with middle school and primary school programs. The Bang Na campus became a candidate school for the IB PYP in March of 2016. We expect to receive full authorization of IB PYP in Spring 2019. Our program adheres to the IB learner profile, attitudes, concepts, and skills. All Wells programs ascribe to the following IB vision: "The aim of all IB programmes is to develop internationally-minded people who, recognizing their common humanity and shared guardianship of the planet help to create a better and more peaceful world" (International Baccalaureate Organization, 2017, p. 2).

Wells Bang Na opened the Primary Years Programme (PYP) in School Year 2016-2017, yet full development and alignment of the curriculum is an ongoing project. According to the International Baccalaureate Organization, the PYP prepares students to become active, caring, lifelong learners who demonstrate respect for themselves and others and have the capacity to participate in the world around them. It focuses on the development of the whole child as an inquirer, both within and beyond the classroom (International Baccalaureate Organization, 2017). Our long-term goal at Wells Bang Na is full collaboration among teachers, leadership,

students, staff, and our community to develop an integrated course of study using inquiry pedagogies that align our work with the IB PYP. Our commitment to the IB vision and the Wells vision laid the ground work for the participatory action research (PAR) project. The focus and goal of the project was to collaboratively create and fully implement a transdisciplinary curriculum that is aligned and supported by the IB PYP learner profile attributes, attitudes, and concepts at Wells Bang Na campus. Initially, focusing the PAR project on grade three helped to inform the entire staff, and I, as the school principal, about how to proceed to achieve our long-term goal of a fully integrated IB PYP. As the PAR cycles continued, we included the entire school in the project, and all teachers were involved in the design and leadership.

The IB learner profile attributes, attitudes, concepts, and skills are the means to this end: well-rounded students who are internationally-minded individuals and lifelong learners. At a micro level, the study documented and assessed the implementation of the IB PYP at Wells Bang Na campus to improve the schools' curriculum and education. This is not, however, an implementation study. The focus of the PAR project was to examine how I worked with teachers at all grade levels to co-create local curricular and pedagogical approaches that both incorporate and align with the IB PYP and pay attention to our local context and teacher input. An overarching motive for our emphasis on co-construction and inquiry-based concepts was to foster classroom environments in which students engage as peer collaborators in their learning (Vygotsky, 1978); they are modeling the kinds of generative learning and democratic classroom structures that we expect of them as classroom and global citizens (Dewey, 1938; Freire, 1970). According to Babine and Roades (2015), "Success with inquiry-based learning often requires a change in school culture. Some schools, individually or as part of a district-wide initiative, have made inquiry-based learning their instructional priority" (p. 5).

As we used the processes of participatory action research (PAR), we were able to analyze how we engaged the teachers, students, and community while we changed our school curriculum. Implications of the PAR include contributing to the wider body of research about the importance of inquiry-based pedagogy and learning, collaboration, and iterative research cycles to inform practice not only at Wells International School, but at other schools transitioning to inquiry-based models or incorporating collaboration in their programs.

The IB profile offers broad normative statements about the attributes that students should achieve. The learner profile states that our students strive to develop attributes that include becoming knowledgeable, principled, open-minded, caring, balanced, and reflective individuals who are risk-takers, inquirers, thinkers, and communicators. We wanted to understand in this research how we actualized the learner profile attributes in a transdisciplinary curriculum. We integrated subject areas using a spiraling curriculum for these six units of inquiry: where we are in time and place, how we express ourselves, who we are, sharing the planet, how the world works, and how we organize ourselves. We focused on using a constructivist spiraling curriculum that focused on creativity, transfer of skills, and higher-level thinking.

We focused our pedagogical design on constructivism, an educational paradigm in which the learners are active participants in the acquisition of knowledge (Bruner, 1977; Vygotsky, 1978). In this educational model, teachers facilitate learning by building on prior knowledge and using a variety of techniques to encourage deep thinking in learners (Ausubel, 2004; Bruner, 1977; Concept to Classroom, 2004; Vygotsky, 1978). "In the constructivist model, the students are urged to be actively involved in their own process of learning. The teacher functions more as a facilitator who coaches, mediates, prompts, and helps students develop and assess their

understanding, and thereby their learning. One of the teacher's most important responsibilities in an inquiry-driven, constructivist classroom is asking questions (Concept to Classroom, 2004).

The PAR project centered professional development and, therefore, had a dual message: as teachers learned to collaborate as adults, we modeled what we want in our classrooms. Adult learning communities can improve school environments; however, working together is hard work to sustain (Schwartz, 2015). The experience and intuitive knowledge I have gained as a teacher and school leader influenced the ways that we collaboratively approached the inquiry in the PAR about our curriculum and instruction at Wells Bang Na. To understand how this occurred and in supporting a team so that we could model the process for the entire school, the study began with a focus on aligning the curriculum as a team at grade three. As the project progressed, the grade levels were functioning differently, and they were all important data sources; therefore, the project expanded to all grade levels after PAR Cycle One. In discussing the focus of practice for the PAR, I explore the assets and challenges we faced as we started the project and delineate the improvement goal and the purpose of the study.

<center>**Focus of Practice**</center>

The focus of practice for the participatory action research (PAR) project was to create and implement a transdisciplinary curriculum that aligned with and supported the IB PYP learner profile attributes, attitudes, and concepts at Wells International School Bang Na campus. At the start of the project, we were fully aware that strong school programs and academics are enhanced by professional learning communities, but those communities must be organized and nurtured in specific ways for them to be successful (Bryk, Gomez, Grunow, & LeMahieu, 2015; Lieberman, 1995; Little, 2006; Whitford & Wood, 2010). Teachers "continually inquire into their practice and, as a result, discover, create and negotiate new meanings that improve their practice"

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(Skerret, 2010, p. 26). Yet, in the past, at Wells International School Bang Na, teachers had little to no input in the school arrangements, programs, and approaches to teaching/learning. As a work in progress, the PAR project consisted of three cycles of inquiry from Fall 2017 to Fall 2018 to examine first how one third grade team worked within the whole school structure and within its grade level team to successfully implement a collaboratively-designed curriculum for their students and then how the whole school collaboratively designed and implemented an inquiry-based curriculum.

Context of the Project: Assets and Challenges

Before the PAR inquiry began, twenty-four teachers of Wells International School Bang Na met initially in the first semester of the 2016-2017 school year to create a program of inquiry using the guidelines stated by IB. The teachers and I developed the Program of Inquiry at each grade level looking at content, concepts, central idea, lines of inquiry, desired attributes (learner profile), cross curricular links, and literacy links. The units of study are working documents as the students drive their own learning through the inquiry process. We assessed the students on their learning using formative and summative assessments. After each unit is completed, teachers reflect and make necessary changes to the program of inquiry to maximize student learning.

The study began with PAR Cycle One in Fall 2017 with a focus on grade three, and the team members involved in the PAR were the homeroom teacher (who was the PYP coordinator), the art teacher, the drama and dance teacher, the information communication technology teacher, the physical education teacher, and myself (the school principal). We examined the assets and challenges (see Table 1) at our school on micro (school), meso (organizational) and macro (larger context) levels as we transitioned to the IB PYP. The top half of the Table 1 recognizes

Table 1

Assets and Challenges Assessed in the Initial PAR at Micro, Meso, and Macro Levels

	Micro	Meso	Macro
Assets	Classroom and School	Wells International School	International Baccalaureate Organization & Thailand Network
	Grade 3 team of teachers and school principal eager to work collaboratively to co-create and implement curriculum	School vision and mission support International Baccalaureate Primary Years Programme curriculum	International Baccalaureate supports Wells in the process
	Teachers develop program of inquiry utilizing curriculum mapping	Chairman and board of directors' support implementation of IB PYP	Global Mindedness gaining advocates
	Collaboration time in teachers' timetable in the school day	Cross campus leadership support	International Baccalaureate Organization offers professional development opportunities
Challenges	Teacher inexperience with transdisciplinary approach and level of collaboration	Resources and excursions are limited	Cultural differences among teachers and management regarding pedagogy
	Novice school principal	Pressure of increasing enrollment	Ministry of Education in Thailand is the accrediting body and sets curricular guidelines
	Teacher retention	Need for profitability	
		Parent education about inquiry pedagogy	

assets and the bottom half identifies challenges; however, some aspects of school change can be an asset and a challenge at the same time.

As the project is situated in a larger meso (school organization) and macro (outside of the school) contexts, the participants and I examined the elements to ensure that we could successfully co-create and implement a transdisciplinary curriculum at grade three that was aligned with and supported by the IB PYP learner profile, attributes, attitudes, skills, and concepts at Wells International School Bang Na campus. In addition to the assets and challenges of the PYP at the school level, we needed to be aware of economic, political, socio-cultural, philosophical, and political factors that could influence the outcomes of the project; these are more deeply discussed in Chapter 3, which highlights the context of the project.

An economic consideration was that Wells is a for-profit institution, privately-owned and governed by a board of directors. Of course, it is important for our school owners to maintain a profit margin and increase student enrollment. The main way that our school increases enrollment is by word of mouth; therefore, it is important that our parents are involved in the community. Parents and teachers must be pleased with changes that we make. Becoming a PYP school involves start-up expenditures that include professional learning opportunities, fees for authorization and maintaining IB status, and resources. We needed to increase our student enrollment numbers in order to pay for these costs.

Philosophically, some stakeholders did not fully understand a transdisciplinary approach to education. In Thailand, education is typically a more traditional model that includes teacher-directed pedagogy with knowledge being transmitted to the students via presentation, lecture, and other forms of instruction that are not known as student-centered. In our community, we

needed to make sure that our stakeholders fully understood and supported the idea of inquiry-based education.

From a socio-cultural and psychological framework, we knew it would take time and effort from our whole community for change to occur. The notion that teachers are empowered to act as change-makers was integral to the action research, but this principle was not fully embraced at our school. Starting with our teachers ensured that the process of moving forward would be spread throughout the community. Psychologically, stakeholders needed to be certain that their individual efforts would have a positive impact on our school. In other words, in order to thoroughly embed the PYP curriculum into our school, the whole community needed to have input and buy-in to the process.

Improvement Goal

Given the micro, meso, and macro contexts in which we operated and as indicated in the introduction, our long-term improvement goal was to co-create and nurture a school culture in which our program reflects the skills, attitudes, learner profile attributes, and concepts in our written and taught curriculum at our school. Specifically, the students need to be able to transfer the skills and concepts that are present in our curriculum to all areas and disciplines of study. Additionally, as our community of teachers engage the cycles of inquiry, we expected regular, ongoing, dialogue and collaboration regarding approaches to teaching and learning. The long-term goal of the PAR project was to co-construct a community of teachers and students who embody the IB PYP daily inside and outside of the classroom.

Creating a school culture in which teachers embark on meaningful research and feel empowered to make positive changes as a part of their professional learning community and helps us fully transition to PYP. Kaufman believed that self-directed learning occurs when the

facilitator designs tasks that are largely in the learners' control. The learner becomes empowered to accept personal responsibility for their own learning. This way, they achieve personal autonomy through individual choice. If lessons are designed correctly, it will lead to success in the latter (Kaufman, 2003). As teachers established a grade-level and school-level professional learning community, the intent was that they would embrace inquiry-based learning and model this style of learning to students. For our teachers to facilitate learning using an inquiry-based pedagogy, they had to experience and model the learning method themselves.

Purpose: Deepen Understanding and Implementation

To reiterate, the purpose of the study was to examine and assess our process as we aligned our curricular development and teaching practices with the IB learner profile attributes, attitudes, concepts, and skills. As our team of teachers iteratively analyzed how well our program was in alignment with skills, concepts, attitudes, and learner profile attributes, we calibrated our work to fit our integrated curriculum; as such, we deepened our understanding and alignment with the implementation actions we took. During the project, the teaching community could be described as a group of people committed to embracing the inquiry process and mapping our best practices regarding the IB PYP curriculum. Our main objective was to create, implement, and fully model a transdisciplinary curriculum that is aligned with and supported by the IB PYP learner profile attributes, attitudes, skills, and concepts at Wells International School Bang Na campus. The PAR method of research supported us in attaining our goal because we engaged our community of learners, created an inquiry-based curriculum collaboratively that is relevant for our students, while empowering teachers to have voice and take initiative. In the next section, I present the research questions and a brief overview of the research design

Research: Questions and Design

The project examined iterative evidence in three cycles of inquiry (Fall 2017, Spring 2018, and Fall 2018) in response to the overarching question and three research sub-questions. The PAR project was designed to gain evidence from iterative cycles of inquiry that could inform direction.

The overarching questions was: How does inquiry-based education inform teacher practice? In other words, if we could ensure that teachers had the knowledge base to fully design and implement the PYP curriculum, they could use the PYP elements to build the curriculum and implement the curriculum in all grade levels. As a result, we expected teachers to become teacher-leaders of the curricular process and expected students to fully engage in the learning.

The three sub-questions on which I collected and analyzed evidence were:

1. How are our teachers naming, practicing, and calibrating the PYP skills, concepts, attitudes, and learner profile attributes to build our curriculum?

2. To what extent are the skill, concepts, attitudes and attributes evident in teaching across all disciplines?

3. To what extent can I, as the school principal, successfully lead with a distributed leadership approach and generate professional learning that connects teachers and teaching to the IB-PYP approaches to learning?

Action Research Design Overview

The research design in the PAR study initially consisted of articulating the grade three curriculum in the program of inquiry. The third-grade teachers met once a week to align grade three curriculum across the disciplines, allowing for transference of skills and concepts by utilizing a transdisciplinary approach. The community of practice examined specific issues:

special subject integration in the program of inquiry, reflecting and improving the program of inquiry, and aligning and calibrating the IB PYP skills, attitudes, concepts, and learner profile in each unit at grade three. The team of teachers worked on calibrating and implementing the program of inquiry at grade three. This was initially intended to be a small-scale model for the other grade levels in the school. The decision to start with one grade came from the assumption that it is important to start small, so that teachers can become invested in the school and want to contribute to improvement. However, after the first cycle of the project, we decided to expand the project to include all grade levels in order to collect important data at each level. As the principal of Wells Bang Na, I needed to support the teachers in their roles as co-practitioner researchers in the study and provide resources that facilitated their collaboration. As a result, they took on teacher-leadership roles and we could say by the end of the project that we were fully engaged in a distributed leadership model that benefited ourselves as professionals and the students and families at Wells Bang Na.

In summary, I outline the chapters of the PAR study. Chapter 2 examines the literature supporting the PAR project. Chapter 3 expands on the full context of the project and offers a diagnostic appraisal as we began this project. The participatory action research design presented in Chapter 4 explains the inquiry process we used that operated as a complementary inquiry to the inquiry curriculum we designed at the school. Chapters 5, 6, and 7 report on the three PAR cycles of inquiry. Each of the chapters focuses on the leadership and teacher actions and includes findings from an analysis of evidence and a discussion of these findings after each cycle of inquiry. Chapter 8 provides a project summary and discussion of the findings and major implications of the action research project and how the findings contribute to the broader body of research.

CHAPTER 2: PROFESSIONAL KNOWLEDGE BASE

Introduction

Learning is at the core of the educational mission. In turn, the task of teaching provides the glue for the education of children and youth. As such, the art of teaching has taken on many forms—some more successful than others. Throughout history teaching has become professionalized with credentials (Tyack & Cuban, 2001). Yet, too often, the process has largely omitted the needs of students as learners and ignored what we know about effective learning. Since the early 20th century, educational learning theory has gradually moved from the developmental psychology field to the classroom. To marry best teaching practices with what we know about learning theory, many schools have implemented the International Baccalaureate Primary Years Programme (IB PYP) (IBO, n.d.). The purpose of this study was to understand the underpinnings of effective teaching and learning theory regarding transdisciplinary, inquiry-based education in the IB PYP framework.

In the literature review, I examine these key questions as a foundation for the PAR project on effective practices for primary education:

- What learning theories support an IB PYP approach to learning?

- Why is transdisciplinary education and thematic instruction an effective way to teach and learn?

- How does the IB PYP support student learning?

- How can communities of practice and curriculum mapping aid in creating strong curriculum?

The chapter begins with an examination of learning theory as the foundation for the content and constructivist teaching as a cornerstone practice of inquiry. I analyze key learning

theories including experiential learning, discovery learning, thematic spiraling curriculum, and the zone of proximal development. The examination of literature then turns to content and pedagogy, focusing on transdisciplinary education and thematic instruction. I examine how educators can effectively map the curriculum of the PYP collaboratively. Finally, the chapter examines how communities of practice can aid in changing school culture and facilitating implementation of IB PYP and the focus of practice for the action research projects. Figure 1 outlines the literature review topics. Then I analyze each topic separately.

Learning Theory

Learning theory is the science of how we come to integrate knowledge, transfer that knowledge from working memory to long-term memory, and make cognitive connections in the brain. All learners create patterns of knowledge as students develop neural networks in which schema develop, and they can gradually think and reason at increasingly more sophisticated levels. Multiple researchers have studied how we learn and how we remember and use what we have learned; because inquiry thinking and constructivist learning best match the philosophy of the IB school and the PYP curriculum (Bransford, Cocking, & Brown, 2000), I have chosen to look at the theories of Bruner (1971), Dewey (1938), and Vygotsky (1978), who are the early advocates for constructivism and inquiry learning; I focus on these areas of their work to support the PAR: experiential learning, discovery learning, thematic spiraling curriculum, and the zone of proximal development. In constructivist learning, the learner is active, making his or her meaning by accessing previous knowledge and synthesizing it with new knowledge and experiences. The teacher acts as a facilitator, using a variety of techniques to encourage higher cognitive thinking. Constructivist theory is based on the principal that learners make meaning of the world based on their own experiences.

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Figure 1. Literature review topics.

Experiential Learning

In 1938, Dewey wrote of the importance of experiential learning stating, "There is an intimate and necessary relation between the processes of actual experience and education" (p. 7). Dewey believed in transdisciplinary, integrated experiential learning that makes connections between real life and the classroom. He believed that students create and make meaning of the world around them using a constructivist approach and students must be able to focus on concepts instead of content in order to make meaning of the world in their own way. He recognized that children's learning is determined by their past experiences and that each child learns in their own way (Dewey, 1938).

According to Warde (1960), Dewey thought, "Interest, not outside pressure, mobilizes the maximum effort in acquiring knowledge as well as in performing work. The authoritarian teacher, the cut-and-dried curriculum, the uniform procession from one grade to the next and the traditional fixed seats and desks laid out in rows within the isolated and self-contained classroom were all impediments to enlightened education" (Retrieved from https://www.marxists.org/archive/novack/works/1960/x03.htm). Freedom of intelligence, according to Dewey, is the most important kind of freedom. "The only freedom that is of enduring importance is freedom of intelligence, that is to say, freedom of observation and of judgement exercised on behalf of purposes that are intrinsically worthwhile" (Dewey, 1938, p. 61). He believed that if students can drive their own learning, they will be self-motivated and will become lifelong learners. That was a clear goal of our PAR project: self-motivated learners.

Discovery Learning

Bruner (1971) developed the theory of "discovery learning", which states that children learn best when they can find out more about the subject matter and build on previous knowledge

in a way that makes them think for themselves. Essentially, the theory of discovery learning asserts that children learn more by doing than by being taught in the traditional way in which teachers give students knowledge. As such, the theory is based on a constructivist perspective and includes inquiry-based instruction. Bruner's theory asserted that teachers are not the experts; they are merely the guide and any classroom of students also possesses a body of knowledge that needs to embrace.

Bruner's (1971) theory on discovery learning encouraged cooperative learning and emphasized metacognition. He said, "Discovery teaching generally involves not so much the process of leading students to discover what is 'out there,' but rather, their discovering what is in their own heads" (Bruner, 1971, p. 72). The process of learning, according to Bruner, involves acquisition (learning new knowledge based on previous learnings), transformation (transferring the learning to apply the understanding to new situations), and evaluation (checking that we have learned the new information or reflecting on the learning). He held to the belief that children should use intuitive thinking or guessing and later find out if their thinking was correct or incorrect and thought that developing thinking skills was an important element of education.

Spiraling Thematic Curriculum and Zone of Proximal Development

Bruner (1977) emphasized the importance of skillful teachers and a curriculum that spirals. A spiraling curriculum is one that builds upon skills, concepts, and content that students have learned previously. "We begin with the hypotheses that any subject can be taught in some intellectually honest form to any child at any stage of development" (Bruner, 1977, p. 33). Bruner believed that student understanding of concepts is solidified by revisiting the theme several times in their education. The themes can become more and more complex as they are

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revisited, grounding the students' understanding of the concepts and allowing for transference. The student builds on their previous knowledge and can think more deeply about the concepts.

Thematic spiraling theory is related to Vygotsky's (1978) theory of the zone of proximal development (ZPD). His theory suggests that children learn from their peers while engaging in inquiry-based learning; however, teacher interaction and direction should be provided in the classroom environment to serve as a mediator of the learning. Vygotsky's ZPD is represented as a developmental phase where the learner cannot yet accomplish the given task on his/her own but requires assistance from an expert. He defined the ZPD as, "the distance between actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others" (Vygotsky, 1978, p. 86). This instructional approach is known as scaffolding. He thought that a child would be able to complete tasks and cognitive skills independently after they worked on them collaboratively.

Vygotsky also believed that cultural contextualization and making school learning compatible with certain cultures is also an important factor to consider for students to successfully learn in the zone of proximal development. He argued, "learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (Vygotsky, 1978, p. 90). He thought that social learning affects child development before learning occurs. He believed that children's environments have a major influence on how they develop and that the whole community affects student learning. He also believed that the adults that are present in a learning situation have a major effect on the learning of that group.

In conclusion, experiential learning, discovery learning, thematic spiraling and the zone of proximal development theories are important elements of student learning. Experiential learning (concrete experiences) allows students to make connections between the classroom and the real world. Discovery learning, in which students are encouraged to be curious and find out more, is essential to inquiry-based education. Thematic spiraling and the zone of proximal development state that children's previous knowledge should be built upon to ensure optimal understanding and transference of concepts. As Vygotsky argued, education works optimally when prior knowledge is built upon and scaffolded when needed to meet the needs of the learner. A spiraling curriculum ensures that learning is built upon prior knowledge. According to Bransford, Brown, and Cocking (2000),

> "…the goal of education is better conceived of helping students develop the intellectual and learning strategies needed to acquire the knowledge that allows people to think productively about history, science and technology, social phenomena, mathematics and the arts…Fundamental understanding about subjects, including how to frame and ask meaningful questions about various subject areas, contributes to individuals' more basic understanding of principles of learning that can assist them in becoming self-sustaining lifelong learners" (p. 5).

Content and Pedagogy: Transdisciplinary and Thematic

The second section of the literature review discusses the benefits of transdisciplinary education and how those benefits relate to developing global competencies (Retrieved from http://www.worldsavvy.org/global-competence/). The attributes necessary for global citizenship substantiate how students can and should develop and transfer concepts and skills that are necessary in order to successfully live in the 21st century world. I then argue that thematic

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instruction is a better education model than the traditional model in which the teachers give knowledge to students in a subject-based approach. I relate the transdisciplinary, thematic, 21st century learning model of education to the IB PYP.

Transdisciplinary Education for Global Citizenship

The term transdisciplinary, first coined in the late 1970's by Jean Piaget, is defined as a "comprehensive framework that tried to go beyond combining existing disciplinary approaches in an interdisciplinary fashion to create new frameworks, new overarching syntheses" (Cantar & Brunar, 2011, p. 637). Educators ascertain that this approach to constructing curriculum has come about as a result of the multifaceted world that we live in today (Mishra, Koelher, & Henrikson, 2011). A transdisciplinary approach that utilizes conceptualized learning is an effective way to teach children 21st century skills. According to Mishra et al. (2011), "transdisciplinary knowledge that emerges from disciplinary practices, and transcends them, is critical. Transdisciplinary knowledge helps students move beyond looking for one "correct" solution, towards an approach that integrates different solutions, viewpoints, or perspectives (Mishra et al., 2011, p. 24). Modern educational reforms stress the importance of concepts rather than content being taught, as well as skills that enable students to navigate within a complex global world (Hargreaves & Fullan, 2012; Hargreaves & Shirley, 2009).

In order for children to gain knowledge and skills in becoming global citizens, the Global Competence Matrix aims to create, "Globally competent individuals [who] are life-long learners, have an appreciation for cultural differences, an ability to understand and consider multiple perspectives, critical and comparative thinking skills, problem solving abilities, comfort with ambiguity and change, and understand globally significant issues" (Retrieved from http://www.worldsavvy.org/global-competence/). The global competence matrix outlines what

contemporary education needs to focus on in terms of development of skills and behaviors, as well as values and attitudes. Concept-based education is a strong tool for meeting the criteria for creating successful individuals living in the 21st century and preparing children for the modern world because of its focus on creativity, innovation, critical thinking, and problem-solving skills. The world is changing quickly and an education that is centered around concepts allows for critical thinking. The IB PYP learner profile attributes, attitudes, skills, and concepts align with the global competence matrix and both models recognize that conceptual thinking, transference, and understanding are more important than content-based education.

Thematic Instruction

The use of themes to organize instruction for students has been popular since Dewey first proposed that curriculum be related to real-life experiences (Dewey, 1938, Kostelnik, 1991). According to Dewey (1938), "collateral learning in the way of formation of enduring attitudes, of likes and dislikes, may be and is often more important than the spelling lesson or lesson in geography or history that is learned" (p. 48). Dewey, an early advocate for transdisciplinary education, knew that integrated, experiential learning that makes connections between real-life experience and theoretical knowledge was effective for student learning. Thematic teaching, interdisciplinary teaching, and integrated instruction all provide methodology for students to utilize otherwise fragmented knowledge and thought processes to help make connections and solve problems in the real world by involving multiple disciplines. When students use thematic units as the basis of learning, they begin to see the bigger picture and connect their classroom education to their experiential learning in life. They begin to understand the processes and events in the world are connected as well.

Traditional education, which focuses on single subjects being taught explicitly, does not acknowledge the ways students should and can transfer skills and concepts or understand how all disciplines are interconnected. Traditional subject-based education does not typically instill creativity, critical thinking or connections to each other and the real world. Thus, the traditional subject-based teaching is no longer enough to enable primary school students to gain the skills, attitudes and attributes that they require in navigating life in the 21st century. Integrated, authentic, inquiry based, transdisciplinary curriculum intends to foster intrinsic motivation among students and collaboration among peers and allows students to make connections to real life (Benjamin, 1989; Dewey, 1938). As such, the approach supports transference of concepts they have learned across disciplines, subsequently students become more effective problem solvers who are able to self-moderate in classroom and non-classroom situations. Benjamin (1989) posited, "In the future, learning will be centered around ideas and problems, not fragmented into discrete subject areas controlled by a seven-day period. The educational futurists call for a curriculum that is activity and idea-based, a *transdisciplinary one*" (Benjamin, 1989, p. 10). This approach to education encourages children to see complex problems in a holistic way and understand that solutions need to draw from a variety of disciplines. In the next section of the literature review, I discuss the IB PYP in relation to transdisciplinary and thematic education.

International Baccalaureate Programme:

Combining Transdisciplinary and Thematic Curriculum

The goal of the IB is to combine transdisciplinary learning with the development of multiple intelligences and thinking skills. The IB focuses on how people learn, transferable skills and concepts rather than focusing on content. The IB supports understanding that concepts transfer across disciplines (IBO, n.d). Transdisciplinary learning transcends memorizing facts or

content and, by its design, supports the learners in connecting their understanding of concepts and skills across disciplines and in real life. By adding the element of transdisciplinary to inquiry-based education, students are encouraged to think about how the world works and ask questions to gain more knowledge. Students can find out more about topics that they are interested in using and processes that suit their learning style. In conclusion, transdisciplinary inquiry-based education allows children to be in charge of their own learning, which makes them want to know more and enables the students to become lifelong learners. The next section discusses the IB PYP, the transdisciplinary themes in the program, data supporting the IB PYP, as well as guidance and limitations in the program.

Primary Years Programme

IB states, "The aim of all IB programmes is to develop internationally-minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world" (IBO, 2013, p. 1). The ten desired attributes identified by the IB are inquirers, thinkers, communicators, and risk-takers who are open-minded, caring, balanced, reflective, principled and knowledgeable (IBO, 2013). The main goal of the IB PYP curriculum is to prepare our children for the modern world we live in by allowing them to learn in a way that authorizes their own curiosity and supports them as lifelong learners. "The IB prepares students for the intellectual challenges of further education and their future careers, focusing on the development of the whole child as inquirer, both in the classroom and in the world outside" (IBO, 2017 para. 1). As seen in the IB PYP Curriculum model (see Figure 2), educators are meant to use the IB learner profile, skills, concepts, and attitudes in the IB in accordance with the six transdisciplinary PYP themes to create meaningful instructional units that connect children's prior knowledge and understanding of the world with new learnings. Through actions and
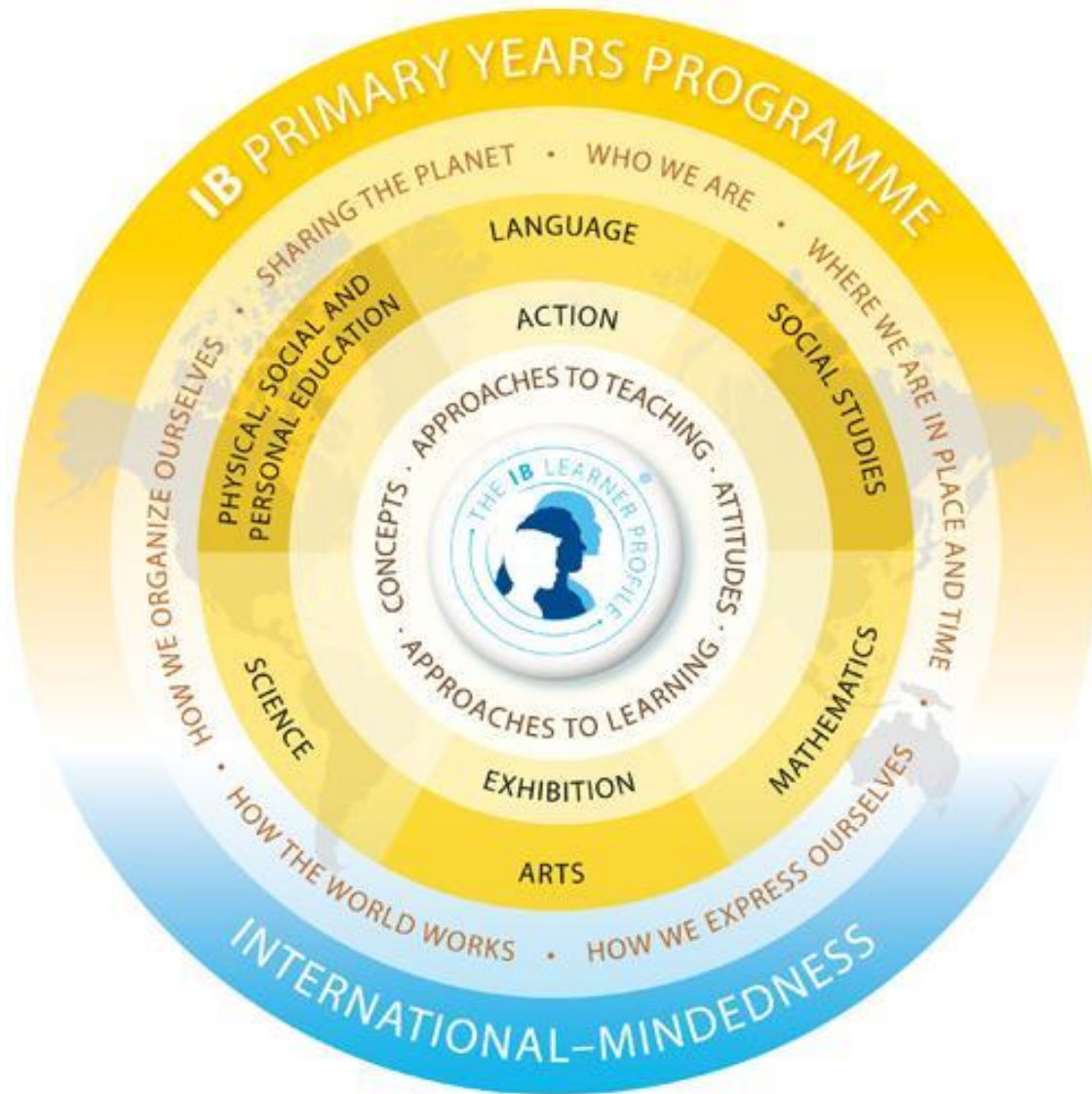
Note. This is the IB transdisciplinary themes transcend the individual disciplines with action, the exhibition approaches to learning and teaching, concepts, attitudes and the learner profile at the center of the learning.

Figure 2. IB PYP curriculum model for the International Baccalaureate Organization (IBO).

exhibition of learning in core content areas, the IB primary student learns about where she/he is in the world, how to share the planet, how to express oneself, how the world works, and how to organize the self—all attributes necessary for becoming internationally-minded citizens.

In 1990, the work of the International Schools Curriculum Project initiative was started in order to develop a curriculum that would span across cultures and exemplify what excellent international education was comprised of. This group was initially a group of like-minded educators who wanted to improve international education. "The experience of the ISCP members, their ability to know what worked and what did not, informed by research that was focused on how students learn, provided in a very practical way the best of both worlds. There was a shared understanding that the newly emerging paradigm required a differentiated curriculum to meet the needs of all students" (IBO, 2013, p. 3). The PYP was the innovation of an international group of educators and was generated to prepare international students for an ever-changing world. The IB aimed to develop well-rounded students using a holistic approach to education.

The main goal of this group was to develop both "curricular requirements for our students to learn about and address the great global issues of their time" and required skills training to enhance "their ability to work across cultures" (IBO, 2013, p. 6). The team of educators created the PYP with the objective of developing a framework to instill the value of internationalism; to enable children to examine the world from a global perspective; and to encourage students to understand and empathize with other's cultural experiences and be interested in global issues (IBO, 2013, p. 5). The current iteration of the PYP curriculum dates from 1997 when IBO developed and managed the implementation of these goals (IBO, 2007) (see Figure 2).

The goals of the ISCP (1994) when generating the curriculum framework that IB PYP would be based on were:

- To develop a curriculum for primary students (aged three to twelve) that would provide a continuum of learning with the MYP and IB Diploma Programme.

- Instill a global perspective in young learners.

- Put emphasis on a constructivist approach in which students make meaning, instead of being fed knowledge.

- Meet the needs of our global existence.

- Cultivate worldwide sharing of materials among educators from around the world.

- Develop caring students that are able to communicate and collaborate effectively.

  (ISCP 1994)

Transdisciplinary Themes in the Primary Years Programme

Across grade levels, students learn in a transdisciplinary fashion utilizing six universal themes: who we are, how we express ourselves, sharing the planet, where we are in time and place, how the world works, and how we organize ourselves. The transdisciplinary themes spiral throughout the framework and are present at every grade level, using the concept of Bruner's spiraling curriculum theory.

The key concepts that are focused on through these transdisciplinary themes are form, function, causation, connection, perspective, responsibility, and reflection. These concepts are present in the homeroom class and in specialty classes when applicable. PYP attitudes that support learner profile attributes are appreciation, commitment, confidence, cooperation, creativity, curiosity, empathy, enthusiasm, independence, integrity, respect, and tolerance. The six themes are seen in Figure 3.

PYP Transdisciplinary Themes

Who we are
Inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human.

How the world works
Inquiry into the natural world and its laws, the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.

Where we are in place and time
Inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationship between and the interconnectedness of individuals and civilizations, from local and global perspectives.

How we organize ourselves
Inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.

How we express ourselves
Inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.

Sharing the planet
Inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationship within and between them; access to equal opportunities; peace and conflict resolution.

Note. Retrieved from https://tinyurl.com/y9pfsmo6

Figure 3. Six transdisciplinary themes used at each grade level in the IB Primary Years Programme.

The PYP approaches to learning identify skills that are taught in the curriculum. The transdisciplinary skills in the PYP are categorized as thinking skills, communication skills, social skills, self-management skills and research skills. These skills are important across all subjects or disciplines and support academic achievement.

IB PYP Supports Student Academic and Social Emotional Learning

According to Kitsantas and Miller (2015), the IB PYP is extremely successful in instilling learner responsibility and self-efficacy among students. The PYP classroom demonstrated that students are goal oriented and self-regulatory by nature. Self-regulated learners set learning goals and plan how to achieve these goals. Kitsantas and Miller (2015) reported that, "the PYP focuses on student learning through the use of interdisciplinary themes which provide a framework for teachers to engage students. The manner in which IB teachers are trained to develop inquiries and challenge students are certainly influential to the development of student self-efficacy beliefs and students' use of self-regulatory practices" (Kitsantas & Miller, 2015, p. 8). The teachers in the PAR study looked carefully at students' academic levels at the start of a unit or topic for those students to identify strengths and growth areas. In this way, the teacher knew the goals of each student, and learning became more meaningful and fit the zone of proximal development of the learner. One teacher noted the importance of students listening to the goals of classmates in addition to identifying their own goals. The teachers helped guide students to set obtainable goals based around the learning process. This study confirms that motivation and achievement are connected, that achievement increases alongside motivation, and that an inquiry-based approach aids in developing self-initiated learning. Student confidence and content relevancy are also main factors in student achievement. One teacher stated, "I really encourage "aha" moments for them and how to use math in the real world. I really notice when they are making

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applications not just in the classroom but also outside the classroom world" (Kitsantas & Miller, 2015, p. 59).

Because the IB PYP focuses on collaborative learning, the teachers realized that group work allowed students to approach problems in various ways. The social learning added a personal element, and the students learned from each other. The IB PYP is a conceptual framework and the students learn concepts across disciplines. The students can use an 'investigative approach' when learning new things and they can make meaning for themselves using a constructivist model. Students use reflection as a standard part of the learning process. One teacher said, "learning should be discussed in terms of working through the process" (Kitsantas & Miller 2015, p. 40) by taking prior knowledge and synthesizing it with new ideas.

Thus, in creating an effective PYP classroom, these seven principles are guidelines (2015):

- Create learning environments that allow students to take ownership of their learning

- Provide opportunities for reflection

- Organize classrooms for collaboration and cooperation

- Use authentic tasks and problems

- Provide opportunities for practicing ways of thinking and learning

- Provide learning support or scaffolding

- Create a culture of respect and understanding

An evaluation of the IB in Texas schools indicates that positive outcomes of the IB PYP include "increased teacher collaboration, authentic assessment, increase student motivation for learning, development of critical thinking skills and increased student global and cultural awareness" (Sillisano, 2010, p. 1). The qualitative findings suggest that the instruction in IB PYP

classrooms were favorable to those found in traditional school environments. Student behavior in IB PYP classrooms was better than in those found in similar (non IB) schools (2010). Common themes present in an IB classroom are varied instructional practices and sound learning behaviors. Teachers at PYP schools were found to use engaging instructional practice more frequently than at other (non IB) primary schools. There were challenges found in this study, however:

"the majority of comments provided by teachers and administrators focused on the positive impact of the IB training on teachers' professional practice, the role of the programme encouraging higher level thinking among students, and the broader view of the world their students received through the programme's emphasis on global learning and cultural awareness. Most of the schools also identified increased collaboration among teachers, students' increased motivation as learners, the programme's focus on all students, and authentic assessments as significant attributable to the IB program" (Sillisano, 2010, p. 11).

In conclusion, the IB allows for thoughtful teaching practices and instruction that leads to higher-level thinking among teachers and students. Reflective practices varied instructional methods, and authentic assessments in IB PYP classrooms maximize student learning.

Guidance from IB PYP

The goal of PYP education is to create internationally-minded students who strive to make the world a better place. One of the ways that PYP does this is by ensuring their schools are committed to ongoing learning opportunities for teachers in IB schools. PYP schools must live the learner profile, which is held up by PYP attitudes, skills, concepts, and action. These skills and concepts are delivered through the taught curriculum encompassing the six

transdisciplinary themes. "The aim of all IB Programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world" (IBO, 2017, p. 3). According to Hemelt (2014), the overarching approach to education embodied by the PYP is one of inquiry. Through a variety of linked methods, students are given opportunities to construct meaning and make sense of the world. The PYP stresses the importance of student and teacher self-reflection.

Limitations of the PYP

PYP schools have a difficult time finding and retaining teachers who can teach in the style required by this framework. Teacher mobility in international schools is a reality, and once trained in PYP, they are more marketable and tend to move to more established schools as this is a highly competitive market. In addition, internal research in the IB organizations reports that teachers have varying levels of expertise in teaching using this approach. Findings indicated that all teachers learned about PYP and inquiry, how to better create curriculums and how to apply best practices, but to different extents. PYP trainings are expensive and most schools reported this as a challenge. The majority of IB schools claim that it is a challenge to train and retain teachers. Professional development is required for IB schools and there is a relatively low number of trained teachers compared to new IB schools. This limitation is true as all schools in the IB PYP network have the need for extensive professional development and some schools have limited resources. Despite the limitations, curriculum mapping offers a solid framework for engaging in developing transdisciplinary, thematic curriculum that aligns with the global competencies and the IB PYP.

Curriculum Mapping

Curriculum mapping is a valuable way to identify and assess classroom practices that are effective in delivering the written curriculum. "Curriculum mapping is a process for collecting and recording curriculum-related data that identifies core skills and content taught, processes employed, and assessments used for each subject area and grade level. The completed curriculum map then becomes a tool that helps teachers keep track of what has been taught and plan what will be taught" (Education World, 2016, p. 1). The process of curriculum mapping needs to be a group effort with the homeroom teacher, specialist teachers, and language support teachers involved. The team identifies the content, concepts, skills, and attributes that are present in each unit. The curriculum mapping process plots out and aligns assessments (formative and summative) first in each grade and eventually across the school.

Curriculum mapping is a successful way to track the taught curriculum and gauge if the written curriculum has been delivered effectively. It is essential in classrooms to successfully design a plan that meets all students' needs. Curriculum mapping needs to address the content, concepts, skills, and attributes that are being covered in each unit in the PYP. Koppang (2004) stated, "One of the most powerful outcomes of the curriculum mapping process is using the maps as a communication tool of the teachers within a school" (p. 155). Hayes-Jacobs (1997) asserted, "Curriculum mapping amplifies the possibilities for long-range planning, short-term preparation, and clear communication" (p. 5). Koppang pointed out that mapping is most effective when it is a whole school initiative; however, many institutions start the processes with one or two grade levels and then look at other grade levels afterwards.

According to Mills (2001), curriculum mapping is essential in promoting a positive work environment and sense of community in schools. He asserts that every teacher, student, and

administrator need to be involved in the collaborative educational process. Curriculum mapping should be ongoing and authentic. Mills discussed the importance of planning collaboratively, reviewing the proposed units, and reflecting on each unit after it has been covered. The IB PYP planning process uses the same principles in unit planning and developing the program of inquiry for the whole school. The first step in curriculum mapping is articulating the program. The second step is teacher reflections (after the unit has been executed) by the team of teachers and vertical/horizontal alignment must be addressed. Specific goals need to be stated in order to assess if the goals are being attained, according to the defined perimeters of student success. Mills stated that professional development needs to be built into the curriculum mapping initiative. Finally, data collection and analysis need to consider the fact that changing the school culture is essential in order to effectively map curriculum. In the next section, I discuss the importance of collaborative learning for professional development at our school.

Collaborative Learning for Teacher's Professional Development

One main IB PYP precept is viewing a school as a community of learners. According to the enhanced IB that is currently being implemented in schools, "Collaboration and collaborative planning remain one of the distinguishing features of transdisciplinary learning, involving all members of the learning community. Students are valued participants of the collaborative learning teams. They demonstrate agency and their capacity to take action for their own learning by collaborating with teachers and other students" (IBO, 2018, p. 7). Thus, teachers need to embrace the learning process and collaborate while effectively implementing PYP practices, adhering to the primary standards and creating a transdisciplinary program.

When creating programs and implementing new school design, professional learning communities provide support for the process. Professional learning communities have a strong,

indirect impact on positive student learning and achievement in the classroom. PLCs support teamwork and collaboration by the teachers and leadership in the school and provide a model for the students. Kruse, Louis, and Bryk (1994) asserted, "A teacher's experience with other faculty members, as well as with the school's leaders and organizational structure, will cause smiles or frustration. At maximum, these interactions can have a profound effect on the impact that a teacher has on his or her students" (Kruse et al., 1994, p. 4). Student learning will be directly affected by robust community connections among teachers, leaders and staff. "In schools where professional community is strong, teachers work together more effectively and put more effort into creating and sustaining opportunities for student learning" (Kruse et al., 1994, p. 4).

According to Halverson (2003), when school leaders and teachers share instructional practices and collaboratively create curriculum, networks of trust and obligation develop within the group. It is the responsibility of school leaders to generate opportunities for professional learning communities to work together toward a common goal in order to create policies, protocols, and practices that will strengthen the bond of the group. Teachers need to feel empowered and understand that they have a voice in their school community in order to feel part of the group. Leaders must create the climate and plan for meaningful development of policies and practice in order to build a strong community of practice. Collaboration among the teachers as leaders and the administrators is the essence of distributed leadership (Spillane, Diamond, & Halverson, 2001).

According to Louis, Marks and Kruse (1996), characteristics distinctive of and crucial to a professional learning community include:

- Shared norms and values: Collectively agreed-on professional beliefs support and sustain successful professional practice.

- Focus on student learning: Establishing students' intellectual growth as a prime professional goal is characteristic of professional communities.

- Reflective dialogue: Teachers reflect on and evaluate their professional practice through conversations with colleagues.

- Deprivatization of practice: Continuous reflection on and improvement of practice requires interaction with and feedback from colleagues.

- Collaboration: In addition to sharing expertise, working collaboratively sustains reflective dialogue and deprivatization of practice.

Certain structural conditions must be in place in for professional learning communities to be successful. Collaboration time needs to be allocated and built in to the schedule. The blocks of time must be regular, substantial, and on-going (Kruse et al., 1994). The yearly calendar needs to reflect the collaboration time in order to give teachers an opportunity to be thoughtful in the process. Physical spaces need to be created to be conducive to collaboration. This is particularly true of large schools where teachers may have little contact with other teachers. An "open door" policy needs to be employed for teachers and administration alike. Teachers must feel comfortable entering other's classrooms and interacting at any time (Kruse et al., 1994). Teaching roles need to be interdependent; leadership must set up a teaching model in which teachers work together on integrated lessons and team teach. This structured collaboration will allow for a greater sense of community and teaching practices will be more effective. Communication structures must be in place to allow for verbal communication as well as collaboration on written documents and idea sharing (for example, using shared unit pans, program of inquiry, standards, scopes and sequences, report card and other shared documents, such as scopes and sequences, on google drive). Grade levels, subject departments, and whole

school collaboration needs to be part of this process as well. Teachers need to be empowered and trusted to make decisions for the school. They need to be autonomous for buy in and to be part of the process in an authentic and meaningful way (Kruse et al., 1994).

Social factors enhance professional learning communities. Among these are teachers and staff being open to improvement and the ability to work together. Teachers must be willing to be risk takers and experiment with new teaching techniques and design publicly. Teachers need to feel fully supported when initiating new projects, instructional methods and creating curriculum. For learning in public to occur, the teachers need to feel comfortable taking risks. In IB PYP philosophy, we advocate for our students to be risk-takers, to push their comfort level, to think deeply and work hard, thereby learning optimally. Our teachers need to be pedagogically aligned with pushing their own limits and taking risks in order to model this for our students.

Professional learning communities need to be based on effective teaching which is based on instructional expertise. Peer observation, peer counseling, mentoring, professional learning opportunities and help from external resources can raise the level of proficiency among teachers. Leadership must be supportive and communicate a clear goal of expected achievements. The school leader must be the 'keeper' of the school's vision. It is the responsibility of leadership to keep the school focused on a shared purpose in order to continue to improve and work together (Kruse et al., 1994). Principals set the tone of the school and need to have a growth mindset and the belief that change in curriculum and culture is possible. Principals must also cultivate trust for teachers to feel comfortable to try new things out of their comfort zone. Teachers need to feel empowered to start initiatives, be flexible leaders, and have agency (voice). The school must develop a strong culture through socialization. New teachers must be indoctrinated to the school culture and feel like important contributors in the organization (Kruse et al., 1994). Cultivating

and retaining a school culture at international schools is a challenge as teachers, students and their families can be transient; which is why it is extremely important to have teachers that have a growth mindset, are life-long learners who are willing to try new things to improve the education at our school.

It should be noted that formal organization and non-formal learning exchanges happen in schools all the time. Schools have experts in many different fields, and teachers often assume roles as informal leaders in an instructional area or discipline. A school needs to cultivate a positive climate for these informal exchanges to take place naturally. Authentic collaborative environments promote risk-taking and professional growth by formally and informally sharing practice, such as, "staff room exchanges, passing conversations among staff in the hallway or schoolyard, and so on…the informal is critical because in these situations we are more likely to encounter firsthand dissenting views, opposition to the formal organizational position and minority opinions" (Spillane & Coldren, 2011, p. 79).

One challenge in creating a professional learning community is ensuring dialogue is free flowing. According to Freire (1970), for dialogue to occur, all participants must have a sense of trust and the school needs to minimize hierarchical structures. The participants in each group must feel that their voices are heard and validated. Learning communities need to provide a context in which everyone feels comfortable and not threatened for participants to try new approaches to education and implement new practices.

Summary

In conclusion, the IB PYP approach to learning incorporates the learning theories of experiential learning, discovery learning, spiraling thematic curriculum, and the zone of proximal development. These theories are the basis for inquiry-based, transdisciplinary curriculum in

which the learner builds upon previous knowledge and makes their own meaning, which is essentially a constructivist approach. The literature that I reviewed examines content pedagogy and asserts that a transdisciplinary approach that focuses on concepts, rather than content will prepare students for living in the 21st century world. The International Baccalaureate Programme incorporates the precepts of learning theory and transdisciplinary, inquiry-based education. IB PYP research supports that students learning PYP can transfer key concepts across disciplines and apply these concepts to real life situations. The literature described in this chapter asserts that professional communities of practice are necessary in building strong school culture and allowing for change, such as a change to an inquiry-based curriculum. The next chapter details the background of Wells International School.

CHAPTER 3: CONTEXT OF THE PARTICIPATORY ACTION RESEARCH

The chapter describes the context of the participatory action research (PAR) project and highlights critical aspects related to the inquiry. Specifically, I provide details about our school including place, our school mission and vision. I relate our school's experience to the sociology of education and briefly discuss the political environment at Wells International School Bang Na, I present a synopsis of diagnostic findings of study and the formation of the co-practitioner research group, which occurred in school year 2017-18 as we were deciding on our focus of practice and how we would proceed in our cycles of inquiry. Finally, I turn to my role as a leader.

Place: Wells International School

A branch of EverClever Education Group, Ltd., Wells offers an American and International Baccalaureate (IB) university-preparatory curriculum to children from kindergarten to high school. It has expanded rapidly since its founding in 1999 and now serves over 900 students who represent over two dozen nationalities. EverClever Education Group also owns Bangkok School of Management (BSM) which provides vocational training, professional development for adults, and bachelor's degrees from the UK. EverClever Education Group, founded in 1998 and licensed with the Thai Ministry of Education, has been successfully running for thirteen years as an international education provider including kindergarten, primary, secondary, and higher education. The goal of the education conglomerate is to provide an affordable and rigorous education to Thai and expatriates living in Bangkok, Thailand.

Wells, a member of the International Schools Association of Thailand (ISAT) and East Asia Regional Council of Schools (EARCOS), is licensed by the Thai Ministry of Education and accredited by the Western Association of Schools and Colleges (since 2009). Wells International

Schools are comprised of three campuses in Bangkok, Thailand. The first school to open was Wells International School – On Nut in 1999, which serves grades one through twelve. Our campus at Thong Lor opened in 2003 and is an early years and primary center going up to second grade. Our newest campus, Bang Na, was established in 2011 as an early year's center and kindergarten. We currently have up to grade four and next academic year (2019-2020) will have up until grade five. In this section, I discuss the mission statement and school vision.

Mission Statement

The mission of Wells International School is to deliver a quality, college preparatory education to a diverse, international group of students in a nurturing environment of creativity and discovery. The goal is to inspire a passion for learning, foster a sense of wonder and curiosity, and teach responsible, global citizenship through a collaboration between the home and school community. Wells International School focuses on active learning in primary school, and the children are inquiry-based explorers. We focus on instilling attributes that enable our diverse body of students to interact with each other, the greater community, and the world as global citizens.

Vision of the School

Wells International School aims to provide quality education and foster character development in a caring community. The philosophy of Wells is directly linked to the desired attributes and traits needed throughout childhood in order to progress successfully in life. We capitalize on the uniqueness of all students, encouraging them to be communicators and thinkers who are principled, determined, well-balanced, caring, open-minded, and knowledgeable. When combined, these attributes create a wholesome profile of an internationally-minded student.

Please watch https://www.youtube.com/watch?v=TJ_pgmuCaAU for an overview of Wells International School in which the school chairman talks about joy as a key focus of schooling.

Wells International Schools believe that children should be balanced and enjoy coming to school. Our core values are happy learning, physical-mental balance, and excellent English. According to Dr. Chang, our school owner, we can attain these core values by utilizing motivating teaching methods and having teachers from many different countries (which allows for a truly international experience). Wells International Schools are internationally accredited, and our high school is a recognized IB World School. We are a college preparatory school and offer many programs at the high school level, such as Advanced Placement Classes, International Baccalaureate (IB) Diploma Program, and Capstone classes. Wells believes in experiential learning, and we offer opportunities for our students to take field trips to other countries, go on college tours, embark on study exchanges, and engage in community service and action projects. However, the school was a place in transition at the outset of the PAR project.

A School in Transition

Wells International School Bang Na is the newest campus consisting of two buildings: an early year's center and our primary building. As of January 2019, we are an IB Primary Years Programme (PYP) candidate school offering a transdisciplinary program integrating PYP learner profile attributes, attitudes, concepts, and skills. Our curriculum is delivered through six transdisciplinary themes: (a) where we are in time and place, (b) how we express ourselves, (c) who we are, (d) sharing the planet, (e) how the world works, and (f) how we organize ourselves. The students at our school range in age from two years old to eight years old; the levels are nursery up to grade three; next year we will have grade four, and the year after that grade five. At

the beginning of our study, we had 98 students, and by the end of the study, our enrollments were up to 152 students.

As we adopted and aligned the philosophy of the IB PYP and our Wells mission, our goals were to develop internationally-minded children who are nurtured and encouraged to perform their best yet retain their individuality. Wells International School Bang Na is a small school, and the best thing about our school is that every child is treated as an individual. Wells focuses on delivering an academically strong program that also develops children socially and emotionally.

Throughout the PAR, Wells Bang Na has been transitioning to be an IB PYP school. We have adjusted our curriculum and adapted it to fit with the PYP framework. The process in the three PAR cycles has been collaborative, authentic, and meaningful. The teachers and I met biweekly to develop and reflect on our program of inquiry in PAR Cycles One and Two. In PAR Cycle Two, we reviewed our units of inquiry to strengthen student learning. In PAR Cycle Three, the PYP coordinator led the primary meetings and the early years coordinator led the early years meetings. Through this process, we also looked at the learner profile and how we were achieving the desired attributes at each grade level. Although most of our teachers do not have classroom experience in IB PYP, they have observed other PYP schools in order to see how theory is put into practice, and many of them have taught in a transdisciplinary and student-driven way prior to our transition to an IB PYP curriculum. All our teachers have participated in professional learning opportunities provided by the IB.

In the beginning of March 2017, we had a consultant for implementing IB and connected with other PYP schools and their teachers. Some teachers visited other schools to see what IB PYP looks like in established IB PYP schools. According to IB (IBO, n.d.) students in the

programme can engage in a unique education. IB PYP students are encouraged to think independently and drive their own learning. IB PYP students have the learning opportunities that can lead them to great universities. IB PYP learners are culturally aware, develop second languages, and become global citizens. The transition to IB PYP at Wells International School Bang Na is a great stride for our school as we follow these principles. With IB support for curriculum development, professional development opportunities, and providing rationale for resources, our school programme, teachers, and community are becoming stronger and more cohesive.

Demographically, Wells Bang Na is extremely diverse. As an international school, our students and teachers are often transient. Although the demographics fluctuate from year to year, during the study most of our students were Thai (about 60%); the remaining 40% were other nationalities, coming from China, England, India, Japan, Korea, Malaysia, Nepal, Pakistan, the Philippines, Russia, Sudan, Taiwan, the United States, and Vietnam. The languages spoken by our children include Arabic, English, Hindi, Japanese, Korean, Malaysian, Mandarin, Nepalese, Russian, Tagalog, Thai, Turkish, and Vietnamese. Our teachers are also a diverse group of people. At the time of the study, the nationalities included American (seven), British (one), Chinese (one), Dutch (two), Filipino (five), Polish (one), Swiss (one), and Thai (five), and Languages spoken amongst our teachers are Dutch, English, German, Japanese, Mandarin, Polish, Spanish, Tagalog, and Thai. The language of instruction is English, and our children learn Chinese and Thai languages as well. Wells is not affiliated with any religion, and most of our students are Buddhist. Benefits of this rich diversity include multiple perspectives of the world and children who are citizens of the world and speak multiple languages. Challenges that arise with this diversity include lack of strong English skills among parents, which sometimes

inhibits communication. Creating and sustaining our PTO (parent teacher organization) is extremely difficult given the cultural circumstances; however, when the parents come together for events, they represent many different cultures and perspectives that enrich our school.

At the outset of the PAR, Wells International School Bang Na had an admissions policy that did not allow for inclusive acceptance of students, meaning we were selective when accepting students. Wells policy dictates that students are assessed on their language ability and cognitive skills prior to enrollment acceptance. Our school has an English support program and students that are not at grade level in language ability are required to participate in English support classes. At the beginning of the study, Wells did not have programs to support children with special needs. We did not have the capability to psychologically assess children at our school, and we referred students to outside agencies. Unfortunately, there is a social stigma with having special needs in Thailand, and many parents do not want to have their children assessed, choosing instead to leave our school when asked for student psychological assessments. As of semester two, 2018-2019, our Special Educational Needs Policy is changing. We are in the process of providing more support for our students with special needs in the form of one on one teachers in an inclusive classroom. In the next section, I discuss how the school is situated in the larger macro context of the sociology of education.

Sociology of Education

When students are in an environment where they have voice and choice, they learn optimally, which is our aim at Wells International School Bang Na. Our model is based on a long history in education of supporting education that encourages creativity and critical thinking. Historically, many school reforms support happy learning, inquiry-based education, and student-driven education. However, the concepts of inquiry-based education, student-driven learning,

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and social emotional learning (happy learning) often emerge and then are submerged with the top down management or pedagogical methods that are more concerned with standardized testing and rote learning. At Wells International School, happy learning means that the children engage in a student-driven, inquiry-based education in which the learning is active and grounded in social emotional learning. Happy learning at Wells Bang Na means that the students are planting in the garden or making models of the solar system using accurate measurement or painting murals that they designed by themselves in the walls of our school. The ideas of happy, active learning have been since the 19th century. Dewey was one of the forerunners of child-centered learning.

This work has deep historical roots. As early as 1896, Dewey founded the University of Chicago Laboratory School that was built on the philosophy of student-driven, inquiry-based learning. Dewey was appalled by the mechanical style of teaching where teachers poured knowledge into students and produced robotic students who did not think for themselves. Dewey believed in play-based, exploratory education that enabled children to retain their natural curiosity (Dewey, 1938). The IB PYP also believes in inquiry-based, exploratory education in which the learner drives their own learning (IBO, n.d.).

In 1916, Ellen Flagg expanded on Dewey's model of education to address the issue of freeing teachers. She said, "In order that the teachers may delight in awakening the spirits of the children, they themselves must be awake" (Goldstein, 2014, p. 85). She encouraged happy learning amongst students and freedom of choice in the classroom. This approach resonates with our philosophy of education at Wells International School and supports the idea that social emotional learning is a dominant aspect of student learning and teacher development.

In 1996, when most teachers in America were using multiple choice tests and yes or no answers, Charlotte Danielson created a model that encouraged inquiry and higher-level thinking. She asked students questions about why things were the way they were. She recognized the fact that great teachers allowed their students to discuss concepts and co- construct knowledge. She also realized that excellent teachers facilitate discussions and debates and do not only give information to their students. She believed in scaffolding topics and content for her students and then allowed them to make meaning on their own. This is also what Wells International School Bang Na campus strives to do for our students through the IB PYP. We want to provide our children with a basis for understanding and allow their own natural curiosity to drive their learning (Goldstein, 2014). Next, I discuss the specific political environment of Bang Na, which overlaps with the micro, meso and macro levels of Table 1 in Chapter 1.

Political Environment

At a micro level, Wells International School Bang Na is a collaborative, open environment where teachers work as a team. Our teachers meet as teams weekly and work closely together. They are comfortable talking with me, and we have monthly all staff meetings in order to develop curriculum, set our scopes and sequences, share best practices, and discuss how our students are doing in general. Teachers have informal conversations frequently, and, since we are such a small school, everyone knows each other well. The teachers are encouraged to be part of the change process in our school, and I recognize that teachers should shape our school. We spent the academic year 2017-2018 developing our program of inquiry and aligning it vertically and horizontally. For the most part, our teachers are excited about the IB PYP program and engaged in the work related to becoming an authorized world school. Our teachers, except for two teachers in the grade three team, are willing to work as a team collaboratively.

A few issues affect the political climate at our school. One issue is the pressure to increase enrollment. At the beginning of the 2016-2017 school year, we had 98 students. By the end of the academic year, there were 124 students enrolled in our school. We hit the target for the school year, but as always, many children left our school (international schools are transient) before the end of the school year, and again we needed to increase enrollment.

Another challenge that I faced was time limitations in a multi-faceted position. There is never enough time to accomplish what needs to get done. The previous principal left in the academic year of 2015-2016 without giving notice at the beginning of the school year. In this time, a few staff members struggled to understand the power dynamics of the school. At that time, the teachers were largely not held accountable as there was not a strong leadership team in place. I was appointed principal in May of 2016, nearly seven months after the previous principal resigned. Building trust among teachers and staff was my major focus during my first year.

One main issue that we faced when we opened our Bang Na campus was lack of resources. Over the past two years, we have built up our resources to support the program of inquiry. Although we just ordered books to support our program of inquiry, the library needs to increase its collection. Class budgets per year are limited as is our field trip budget. As we enroll more students, the budget for resources increases, but of course, to gain more students we need ample resources. Inquiry-based education requires many resources on hand, and this has been a challenge in our transition period. The IB PYP requires schools to produce figures of how much money they are willing to spend on PYP professional development opportunities and resources each year. IB PYP holds schools accountable for professional learning and resources; our board of directors agreed to a yearly PYP budget, which will help our school build ample resources.

At a macro level, leadership is more top down than in our every day school environment. Dr. Chang, our school chairman, is progressive in his thoughts about education; he believes in collaboration and teamwork and realizes that teacher buy-in and happiness at work is crucial to providing a happy learning environment for students. However; when he feels strongly about an issue, he may approach it a more traditional way. As a new leader, I am building trust and political capital in our school organizational structure.

The school owners (Dr. Chang and his wife) are Taiwanese but have been living in Thailand for many years. Most teachers are from the United States, Europe, the Philippines, or Thailand. Of course, the way that we interact has socio cultural implications. Teachers trained in Thailand, the Philippines, the UK, and the United States may have different approaches to learning and different pedagogies. Some Asian teachers are more traditional in their teaching styles, which makes it difficult for them to understand inquiry-based education. Our styles of communication are not the same, and even our values tend to be different. Moreover, our students and parents come from 20 countries, and our cultural differences are apparent. These differences mandate that we teach global citizenship and emphasize that there is more than one perspective and right way to do things. All values that are desired attributes throughout the world are equally valid; however, managing and collaboratively working in a multicultural environment can be challenging due to different cultures and beliefs.

Preparing for the PAR

Two key elements supported our preparation for the PAR Cycles of Inquiry in Fall 2017, Spring 2018 and Fall 2018. The first was a diagnostic assessment of grade three to prepare for PAR Cycle One. The second was the formation of the Co-Practitioner Research (CPR) group.

Diagnostic Assessment: Social Dynamics of Grade Three Teachers

Although the whole staff was present in designing the program of inquiry (POI), which was necessary as it needs to be aligned at all grade levels, we decided at the outset of the PAR that focusing on grade three would be more manageable and effective. After grade three was aligned, we planned to move onto another grade level. To move forward with the implementation at grade three, I began by assessing the social dynamics of our grade three team of teachers. 2017-2018 was successful in opening dialogue and setting the stage for collaboration at grade three between the homeroom teachers, specialty teachers, and me. Our teachers began feeling more comfortable learning in public; however, our team of teachers had to work on building trust and taking risks while planning collaboratively. Two teachers in our grade three team were afraid of making mistakes and going too far outside of their comfort zone, namely trying new educational practices that are student driven and inquiry based. The same two teachers that were co- practitioner researchers were not initially collaborative by nature and preferred to stay in their classroom, plan and teach their own lessons individually.

Co-Practitioner Research Group

At the beginning of the study, the co-practitioner research group was comprised of our full grade three teaching team. The teachers involved in this project included the grade homeroom teacher, who is also the PYP coordinator at the time, the visual art teacher, the physical education teacher, the dance teacher, the music teacher, the information communication technology teacher, and me. Our project was to co-create and effectively implement a transdisciplinary curriculum at grade three that is aligned with and supported by the IB PYP learner profile attributes, attitudes, skills, and concepts at Wells International School Bang Na campus. We focused on developing a strong program in grade three and then we moved onto

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other grade levels. In PAR Cycles Two and Three, teachers at other grade levels were engaged in the PAR.

The research project included the team of co-practitioners working together and developing a transdisciplinary, inquiry-based curriculum that authentically integrates and connects all disciplines. Most of the group members were collaborative and more than willing to work together; however, at the onset of the PAR, some teachers preferred to work alone and were not accustomed to sharing ideas. Certain members of the group were much more invested in the project than others. Our grade three team of teachers, during the PAR was culturally diverse with different levels of education. The information communication technology teacher, the dance teacher, and the art teacher are from the Philippines. The initial CPR group had different levels of education, teaching experience, and pedagogical beliefs.

Sometimes, Asian teachers prefer a more didactic approach. They like to be collaborative but need to know that someone is in charge and responsible for the decision-making. The Americans are more outspoken and direct. The Philippine teachers are more cautious in their planning and execution of student activities. The Philippine teachers have been working at Wells Bang Na since our school opened its doors in 2011. The PE teacher, grade three homeroom teacher, music teacher, and I are new to Wells International School Bang Na (although two of us are transfers from another campus) this year.

Thus, all these considerations were a part of forming and facilitating the CPR group, which changed over the course of the project, and I discuss the changes in subsequent chapters.

My Role as Researcher

I am new in my role as principal at Wells Bang Na. Since our school was without a principal for six months in the academic year of 2015-2016; the morale among parents, teachers,

staff, and students was down when I stepped in. At the outset of the PAR, we began rebuilding the stability in our school environment, but much work needed to be done to establish trust and cohesion.

There are some limitations and challenges in my role as a leader. My role as the early years and primary principal includes mentoring teachers, facilitating learning exchanges and growth, coordinating events, activities, curriculum, parent meetings, daily operations, budgeting, resourcing and marketing. There was and continues to be pressure to increase enrollment. At this time, I believed that enrollment would increase as we built a strong program and it has. At the start of the program, our enrollment was 98 and at the end of PAR Cycle Three we had 152 students. Time limitations were a challenge in the many roles I must fulfill. Being a novice leader was a challenge that I faced in the process of co-creating and effectively implementing a transdisciplinary curriculum at grade three that is aligned with and supported by the IB PYP learner profile attributes, attitudes, skills, and concepts at Wells International School Bang Na campus.

In the PAR project, I had other responsibilities. It was my responsibility to bring together our co-practitioner researchers (CPR) and create a culture of trust, acceptance, and self-motivation. According to Aguilar (2016), the "primary role as a leader, especially while a team is in the early stages of development, is to build trust so that a learning space can exist within…" (p. 42). It was important that I, as school principal, generate our grade three learning exchange and encourage professional development opportunities that connect teachers and teaching to the IB PYP approaches to learning.

In conclusion, we needed to consider multiple factors in our school as we proceed on our inquiry – the participatory action research project. Some aspects of Wells Bang Na International

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School were assets adding in the dynamics of our place, and others acted as limitations. Our school mission and vision guided the students' learning as does the IB PYP learner profile attributes, attitudes, concepts, and skills. The political environment is complex as are social interactions, and those contributed but did not detract from our overall project goals. The co-practitioner research group and I worked together, built the necessary trust and cohesion, and were able as Chapters 5-8 indicate to successfully move our school through the transition to IB PYP.

CHAPTER 4: ACTION RESEARCH DESIGN

The purpose of the PAR project was to co-create and effectively implement a transdisciplinary curriculum aligned with and supported by the International Baccalaureate Primary Years Programme (IB PYP) learner profile attributes, attitudes, skills, and concepts at Wells International School Bang Na campus. In 2017-2018, our homeroom teachers and specialists collaborated to fashion our program of inquiry, making sure that it was aligned vertically and incorporated all the necessary elements. The teachers developed the program of inquiry (POI) at grade three level individually and as a group. In this process, I collaborated with our teachers in creating a curriculum in which the learner profile attributes, attitudes, skills, and concepts were articulated and present in our curriculum.

The overarching research question of the participatory action research (PAR) project was: How does inquiry-based education inform teacher practice?

The sub-questions that I examined and on which I collected evidence were:

1. How are our teachers naming, practicing, and calibrating the PYP skills, concepts, attitudes, and learner profile attributes to build our curriculum?

2. To what extent are the skill, concepts, attitudes and attributes evident in teaching across all disciplines?

3. To what extent can I, as the school principal, successfully lead with a distributed leadership approach and generate professional learning that connects teachers and teaching to the IB-PYP approaches to learning?

In the academic year 2017-2018, we added collaboration time into our weekly schedule in order to provide our teachers, particularly the grade three team, the opportunity to name and calibrate the PYP learner profile attributes, attitudes, skills, and concepts in our program of

inquiry. This collaboration time was used to plan the units of inquiry and connect student learning across disciplines including literacy, humanities, science, math, art, information communication technology, art, physical education, music, and dance.

Our team of teachers met weekly in the academic year of 2017-2018 with grade level teachers, the coordinators, and me in order to plan the program of inquiry as a team. The process was effective in bringing our teachers together. The work was meaningful for all of those who were involved, and I could see that as the work progressed, teachers felt empowered. As our curriculum came to life, we implemented it. In general, the teachers took ownership of their work and continue to teach the units with enthusiasm and conviction; however, a few teachers were not fully on board with the structural changes at school. We reflected on our program of inquiry at the end of the academic year and made changes to improve it for the next academic year, during which time we published our program of inquiry and shared it with our parents.

Participatory Action Research

The PAR project was participatory because its purpose was to "assist people to extend their understanding of their situation and to resolve significant issues or problems that confront them" (Stringer, 2014, p. 14). Stringer (2014) asserts "that participatory approaches to treatment, teaching, and management are much more effective ways of accomplishing productive and effective outcomes" (p. 23). Stringer (2014) points out that, "Action research works on the assumption that all people who affect or are affected by the issue investigated should be included in the process of inquiry" (p. 15). All stakeholders needed to be involved in the process of the study and were co-practitioner researchers in the PAR process; the CPR group is an innovation on the typical PAR process and is similar in form and responsibilities to the networked improvement communities in the improvement sciences framework (Bryk et al., 2015). Learning

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communities are essential in the cycle of inquiry and participatory action cycle. Militello, Rallis, and Goldring (2009) established, "The collaborative, inquiry-action cycle is grounded in the belief that successful leaders for instructional improvement cannot operate in isolation" (p. 29). The community and all stakeholders must have a part in the project for implementation to be successful. Militello et al. (2009) recognized that each school is different, functions in its own way and has its individual context. "Inquiry-minded, action-oriented principals look inside the school and classrooms where instruction occurs; they question the practices, their origins, and their impact on student learning. For them, accountability means engaging in ongoing, recurring cycles of action and evaluation that provide feedback to link performance with results" (Militello et al., 2009, p. 27). Mutual engagement in the community of stakeholders is necessary for co-practitioner research process is to be successful. Next, I outline each PAR cycle of inquiry: PAR Cycle One (Fall 2017); Par Cycle Two (Spring 2018); and Par Cycle Three (Fall 2018).

PAR Cycle One

In the first cycle in the action research project, we articulated what the units of inquiry looked like at grade three. The six transdisciplinary themes in the IB curriculum include: where we are in time and place, how we express ourselves, who we are, sharing the planet, how the world works, and how we organize ourselves. The key concepts that PYP underscores in the IB transdisciplinary program of inquiry are function, causation, change, connection, perspective, responsibility, and reflection. The learner profile attributes are inquirer, knowledgeable, a thinker, a communicator, principled, open-minded, caring, balanced, reflective, and a risk-taker. First, we disseminated what it meant to encompass these learner profiles at a grade three level.

The community learning exchange (the team of grade three teachers and I) intended to clearly communicate what these expectations imply for seven and eight-year-old children. Our

team collected data in the form of classroom observations, our written program of inquiry, our written unit planners, students' artifacts, digital portfolios (seesaw), which include teachers' anecdotal evidence and student reflection on their work, and principal's memos to examine what areas of the learner profile attributes, attitudes, concepts, and skills were present in the classroom at the beginning of the PAR.

The grade three students began to use the seesaw program (online interactive portfolio building program) in order to create digital portfolios during PAR Cycle One and continued to build the portfolios in PAR Cycle Two and Three. These digital portfolios effectively record the learner profile attributes, attitudes, concepts, and skills in our lessons. We were able to effectively gauge which elements were strong in our program of inquiry and which elements required further development. We started by looking at the learner profile in grade three from an asset-based approach and then we calibrated our program of inquiry and teacher practice to meet the needs that were not addressed in each PAR cycle.

Our grade three professional learning exchange had to be willing to work together to develop a strong program. Common collaboration time at the grade three level was allocated in the schedule. The team developed a protocol to ensure working effectively. Teachers reflected on the process and took pre and post surveys to assess teacher opinions about the process. I recorded the feedback and made necessary improvements in the process. We collected and analyzed evidence to focus on research question one in PAR Cycle One. Chapter 5 presents the emerging themes from that inquiry.

PAR Cycle Two

In PAR Cycle Two, it became apparent teachers at all grade levels needed to be involved to create a vertically aligned curriculum utilizing as inquiry-based pedagogy and supported by a

transdisciplinary curriculum. The CPR group expanded to involve the homeroom teachers at every grade level and the specialist teachers. We formed a leadership team in PAR Cycle Two consisting of the PYP coordinator (Mr. Brad), the early years coordinator (Ms. Viki) and the Thai director (Ms. Oh). The formation of the leadership team began to model distributed leadership. At this time, I encouraged teachers to lead initiatives and become flexible leaders in their areas of expertise.

After our team identified which learner profiles attributes, attitudes, concepts, and skills needed further development in our POI, we continued to collaborate to fine-tune the curriculum and to embed the lacking attributes in our program at all grade levels. Our team worked together to produce meaningful ways to incorporate the components of IB PYP curricula that were not yet represented in lessons across all disciplines.

In PAR Cycle Two, we had a meeting with parents in order to partner with them in facilitating the age appropriate development of their children. We had an interactive workshop facilitating parents' understanding of the PYP curriculum including the learner profile attributes, attitudes, skills, and concepts. We explained that students would display their learning through their digital portfolios, student led conference, and class observations. We taught parents and the community the philosophy behind inquiry-based learning and IB PYP, as well as the transdisciplinary themes, learner profile attributes, attitudes, skills, and concepts. Our parents needed to understand what we were doing at school in order to support their children at home. Our teachers and students tracked their progress in our new curriculum design using digital portfolios, completing self-reflections and addressing learner profile attributes, attitudes, concepts, and skills.

In PAR Cycle Two, I began to examine teachers' instructional practices in the classroom to gauge the extent inquiry-based pedagogies were evident in the classroom. The leadership team and I conducted professional learning opportunities to encourage inquiry-based based instruction in the transdisciplinary curriculum. I collected and analyzed evidence from research questions 1, 2, and 3 in PAR Cycle Two. Chapter Six presents the emerging findings from that inquiry.

PAR Cycle Three

My original intention in the third cycle of action research was for the grade three CPR (co-researcher practitioner team) to assess and calibrate the program of inquiry at all grade level to ensure all components were being met. This changed in that the project looked at all grade levels in PAR Cycle Two and Three. We aligned the program of inquiry at every grade level, embedded the conceptual understandings, and continued to collaborate in order to improve instructional practices and in turn student learning.

Our teachers continued to meet and reflect about their delivery of lessons and student learning in PAR Cycle Three. The teachers discussed ways to make collaboration time more effective with participants communicating openly. Teacher input at the end of PAR Cycle Three indicated that teachers believed collaboration time needed to be increased to improve cohesion in the program. They suggested informal collaboration should be added into the schedule. The collaboration process and working together as a learning community were important aspects in all three action research cycles. In addition to collaboration, the teachers engaged in peer observations, school visits, peer reflection and self-reflection.

Participants

Following Stringer's 2014 action research model that states that all stakeholders should be part of the research process, the PAR project originally involved all stakeholders who were

responsible for grade three curriculum planning and delivery. In PAR Cycle One, the grade three homeroom teacher and I were instrumental in facilitating the meetings with specialty teachers, to ensure that a child-focused, inquiry-based transdisciplinary curriculum was the medium of learning for our students. At the end of the PAR Cycle One, it became apparent that data collection solely on Grade 3 would not provide the data required to understand the strengths and areas of improvement needed for the whole school. Thus, for subsequent cycles, we expanded the PAR to involve teachers at all grade levels and align our pedagogy and content horizontally in grade levels and vertically across all grade levels.

Data Collection Instrumentation

As the design of the PAR project involved ongoing analysis, the collection strategy was emergent (Creswell, 1998). Throughout the PAR, I collected evidence on the process of the grade three team creating curriculum and to what extent the students' work represented the PYP learner profile attributes, attitudes, concepts, and skills. IB believes that student portfolios accompanied by observations and anecdotal records should be an indication of student work achieving the goals of obtaining IB PYP learner profile, attitudes, concepts, and skills.

Parents need to be savvy about the learner profile attributes and that the school (IB) community feels strongly about the learner profile being embedded in a school's culture and valued practices. Much of our work in the PAR was about educating our parents and community about our program and the PYP. Collecting data about parents' pedagogies and understanding of IB was necessary to encourage home and school connections.

IB also emphasizes that the learning process is more important than the product (2014), and data collection about the collaboration process and how I, as a leader, am successfully leading professional learning that deepened teachers' knowledge of inquiry pedagogies, effective

inquiry-based instruction and the IB. In Table 2, I show the research questions and the sources of data I used for each question. Then, I discuss the data collection methods used in the PAR.

Observations in School Culture

The main objective of my intervention was to create an environment where the learner profile attributes, attitudes, skills, and concepts are present in everything we do at our school inside and outside of the classroom. The goal was to be on the playground and hear children say, "Johnny, that was very caring of you to help Miki up when she fell." Or, "Timothy you were a risk-taker when you volunteered to go first for our oral presentations." During the 2017-2018 academic year, the second graders studied a unit of how we organize ourselves with the topic of "community helpers." The students brainstormed a list of things that they would like to do in order to improve our school. As part of this unit, they cleaned up the gymnasium, washed the walls of our building, picked up trash in the empty lot in front of our school, and painted a sidewalk going to the early years building. This was an excellent indication that the learner profiles of being principled, caring, and reflective are present in our curriculum. The best part of this example is that the whole project was student led. Our aim was to get to the level where we hear language and see actions that mirror the learner profile attributes, attitudes, concepts, and skills in every classroom every day. Table 2 states the research sub questions that will be addressed in this chapter and the data sources that were used to collect information.

Classroom Observations

Through classroom observations, I collected data that reflected teacher practice incorporating PYP learner profile attributes, attitudes, concepts, and skills in lessons and student learning across all disciplines. I collected data by taking notes during class observations and analyzing cognitive thinking patterns through conversation. I transcribed lessons using a

Table 2

Sub Research Questions and Data Sources

Research Sub Questions	Data Source (Metrics)
How are our teachers naming, practicing, and calibrating the PYP skills, concepts, attitudes, and learner profile attributes to build our curriculum?	Classroom Observations Collaboration Meeting Observations Program of Inquiry Unit Planners
To what extent are the skill, concepts, attitudes and attributes evident in teaching across all disciplines?	Classroom Observation Digital Portfolios Student Led Conferences
To what extent can I, as the school principal, successfully lead with a distributed leadership approach and generate professional learning that connects teachers and teaching to the IB-PYP approaches to learning?	Memos Professional Development Evaluations Surveys

selective verbatim method recording teacher and student questions. I coded the questions using Bloom's taxonomy.

At the beginning of each unit, teachers use provocations to inspire inquiry with their students. Classroom observations indicated which elements were being delivered in our transdisciplinary themes. This data was triangulated with the written unit plans, the written program of inquiry, and teacher reflections on student learning. My classroom observations were used to record how inquiry was used in the classroom and how it generated student inquiry. I looked for the PYP learner profile attributes, attitudes, concepts, and skills displayed by the students. In PAR Cycle One and Two, we adopted the constructivist checklist to assess the teachers' ability to promote individual learning in an inquiry-based classroom. This took the place of the Marzano evaluation model.

Collaboration Meetings

At the onset of the PAR, our weekly collaboration meetings were comprised of the seven teachers that make up the grade three team and me (N-8). In PAR Cycle Two and Three, I started looking at grade level collaboration throughout the school (N-24). The purpose of the meetings was to work together to come up with student lessons, activities, and engagements that cross all disciplines. It was also a time for the teachers to reflect on the unit plans and the program of inquiry and then calibrate and adjust the written plans accordingly. I recorded conversations and activities in these meetings using written note taking and selective verbatim recording methods. I coded teacher questioning patterns using Bloom's taxonomy. I also collected feedback regularly to find out how teachers' opinions about increasing effectiveness in the meetings.

Program of Inquiry

Our written program of inquiry was used as a curriculum benchmark to ensure that we were hitting the PYP learner profiles attributes, attitudes, skills, and concepts in our six transdisciplinary units. The program of inquiry provided a written account of the year plan for grade three. The program of inquiry was a living document throughout all three action research cycles at every grade level. The POI reflected student learning (an overview or curriculum map) at each grade level. In each cycle of action research, we looked at the POI collectively and strengthened it, focusing in PAR Cycle Two on the inquiry cycle and in PAR Three at the conceptual understanding in each unit.

Unit Planners

Each unit has a unit plan that the team of teachers writes and reflects on as a team. The unit planners are working documents and teachers calibrate, adjust, and change them according to the students' inquiry and interest. The unit plans provide a framework that teachers follow in their classroom practice. The unit planners provide written documentation of student learning. The teachers reflect collaboratively on each unit after it commences and change the units to improve student learning further.

Student Led Conferences

Initially, in the first and second cycles of action research, we held student-led parent teacher conferences for the first time and second time. The student led conferences in PAR Cycle One and Two were not as effective as expected in empowering the students to explain their learning. The students required more scaffolding. We hope to better prepare them in the future. Due to this outcome, in PAR Cycle Three, only some grade levels continued to have student-led conferences, whereas other grade levels held parent teacher conferences. This adjustment was

due to communication, ages of the students, and the amount of preparation time it takes to have student-led conferences.

Memos

In order to record our action research project processes, I used reflective memos. The memos reflected on the grade three team collaboration meetings, classroom observations, student-led conferences, development of the program of inquiry, and unit planners. I also used reflective memos to reflect on my leadership development throughout the PAR.

Professional Development Evaluations

In Wells International School, a standard professional development evaluation form is used to assess how relevant and useful the professional development opportunity is. The evaluations enable our teachers to reflect on their experience and provide the school with data about how successful I am at generating effective professional development opportunities. We used the same form for the in-house IB trainings to gauge teacher opinions about the professional learning opportunities.

Digital Portfolios

The grade three students created digital portfolios using seesaw as the platform. The students reflected and commented directly on their work in seesaw. Their work was shared with their parents, who also commented on the students' work. Seesaw enables the students to analyze, reflect, share, and save their projects. This digital learning tool was a great way to assess how the elements of PYP were embedded in our curriculum. The seesaw program was extremely effective in PAR Cycle One with positive feedback from parents, students, and teachers. In PAR Cycle Two we bought the full program and implemented use of seesaw as our main

communication device with the community at all grade levels. Teachers initiated the endeavor to purchase and implement the program school wide.

Teacher Surveys

In each PAR Cycle, I collected opinion surveys from the teachers about the leadership team and my role as a leader. After the data was collected, I tried to be a responsive leader and meet the suggested needs of the teacher. I included questions that would indicate if teachers felt as though they were treated professionally and empowered to make their own decisions about their teaching practice. I also asked if teachers enjoyed their work and felt appreciated and respected.

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Data Analysis

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The PAR involved changing the curriculum and the pedagogy of the school. The qualitative data I analyzed for evidence in PAR Cycle One, Two and Three included classroom observations, digital portfolios, student-led conferences, meeting observations, memos, our program of inquiry, and unit planners.

The data analysis tools utilized in this project were selected for their ability to help draw meaning within this context; as Gibbs (2002) asserted "interpretation is the key aspect of qualitative data analysis" (p. 14). The information gathered pertaining to the PYP elements was coded and categorized to assess how effectively we embedded the PYP elements in our program. The digital portfolios and student-led conferences were analyzed with a general content analysis (Lincoln & Guba, 1985). Teacher questioning patterns and selective verbatim protocols were used to record and analyze teacher meetings using Bloom's taxonomy. Professional development reflections were analyzed to find out if I was generating effective learning exchanges and learning opportunities. Teacher surveys were used to ascertain if teachers felt that they were

trusted, respected and empowered to make their own decisions. Themes and patterns that emerged from each type of data source was comparatively analyzed (Creswell, 1998).

Roles of Reflection/Praxis

The journey of the dissertation has already been one of self-reflection. The initial feedback from my professors and writing coaches, as well as working with my co-practitioners made me realize that my first idea of a research topic was not moving our school in the right direction. The feedback and reflection process allowed for changing the focus, thinking of how to more cohesively work together, and revising my research. The benefit of the PAR project currently is the collective discourse of transitioning together. As hunter, emerald and Martin (2013) asserted, the collaboration process is only effective when the group engages in open dialogue. The protocol/guidelines for PAR (participatory action research) developed by Sachs in 2000 (p. 87) is as follows:

- Inclusiveness, rather than exclusiveness of teachers, academics, union officials, systems people, and employers as well as parents and other community groups

- Collective and collaborative action

- Effective communication of aims, expectations, etc.

- Recognition of the expertise of all parties involved

- Creating an environment of trust and mutual respect

- Being responsive and responsible

- Acting with passion

- Experiencing pleasure and fun

This protocol was important to follow for all stakeholders to remain excited about this project over the course of the cycles of inquiry. As a leader, it was important for me to take the

necessary steps in cultivating an environment in which all members felt as though they were positively contributing to the group and that together we would make a difference in the education of our students as we worked towards a common goal.

Study Limitations

The limitations of this study included teacher commitment; some teachers did not want to be involved in projects that required extra work or time commitment. Our schedule is rigorous, and most teachers have 22 to 24 contact hours per week. The schedule for 2017-2018 and 2018-2019 (all three PAR Cycles) allowed time for the third-grade homeroom teachers/PYP coordinator, art teacher, ICT teacher, PE teacher, music teacher, and dance teacher to meet each week for one fifty-minute period. This helped in the collaboration process as it was a mandatory requirement to come to these meetings; the meetings were embedded in teachers' timetables as contact hours.

Another limitation of this study was the unknown. Some of our teachers had worked at the school for many years and had been able to stick to their classroom and not collaborate. They had been teaching the same curriculum and the same projects year after year without changing any of the activities or concepts. Most of our art curriculum focused on crafting, not creating or using one's imagination, which prohibited the students from being able to express themselves artistically. Parents initially did not fully understand the IB education model. In order to educate our parents and community, we held a parent workshop during Cycle Two.

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Confidentiality and Ethical Concerns

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The security of the data collected, and the confidentiality of the participants were of the utmost importance in this study. In addition, the transcription of interviews, written

documentation, and digital portfolios collected were kept in a secure, locked location. Finally, none of the material collected from the school was replicated or disseminated in any way.

As previously mentioned, the school was privy to an executive summary report as well as member checking of the initial findings. When any findings or reports were shared with the school every attempt to mask the identity of subjects was made. The chairman of the school made it clear that the executive summary that would be submitted would be used for future curriculum development at our school.

For the researcher to conduct the study, a formal application was made and approved by the chairman of the school (see Appendix C and D for the study's consent forms).

Summary

In this chapter, I have outlined the PAR project to co-create and effectively implement a transdisciplinary curriculum at that was aligned with and supported by the IB PYP learner profile attributes, attitudes, skills, and concepts at Wells International School Bang Na campus. With each cycle of research, the teachers, leadership team and I compiled data that we examined and analyzed to determine to what extent we were successfully implementing our new curriculum. In the PAR, I examined my own leadership and collected data about how effectively I was cultivating teacher leaders while implementing a distributed leadership approach. Through ongoing analysis, we were able to calibrate and adjust our curriculum to align it with the IB PYP learner profile attributes, attitudes, concepts, and skills.

CHAPTER 5: PAR CYCLE ONE: TUNING IN

In PAR Cycle One, the focus of the participatory action research project (PAR) at Wells International School Bang Na campus was the collaborative effort to create and effectively implement a transdisciplinary curriculum at grade three that aligned with and was supported by the International Baccalaureate Primary Years Programme (IB PYP) learner profile attributes, attitudes, skills, and concepts. The PAR project examined the ways teachers implemented the curriculum and how I, as a school leader, facilitated and guided the teachers throughout the process. In the pre-cycle of this project (Spring 2017), I, with our team of teachers and pedagogical leaders, worked collaboratively to develop a program of inquiry.

Before the 2017-2018 academic year commenced, Wells International School Bang Na hosted an IB PYP workshop that was required for Wells Bang Na teachers and optional for primary teachers at other Wells' campuses. The workshop provided a baseline of foundational skills in the IB PYP pedagogical model for new practitioners. For three days, our teachers constructed meaning about inquiry-based, transdisciplinary education. The teachers practiced constructivist education while learning about the process. Teachers responded positively to a survey about the workshop. Ms. Erma, our third grade ICT teacher, said, "What caught my attention most was the second day. We discussed know vs. understand, inquiry learning and how education has changed over the years". Another teacher said, "One big take away from this workshop was how the classroom environment can support inquiry. Having the room setup for small group interaction and investigation, having resources readily available and displaying student work in a way that shows their investigations help to keep students engaged in their discoveries." Mr. Tata, our music teacher, said, "The workshop also offered hands-on experience to learn more about the theory and philosophy behind the curriculum through discussions and

activities during the workshop." Collectively, these comments indicate that teachers learned about inquiry-based pedagogy and the benefits of transdisciplinary education and protocols to facilitate a constructivist approach to education through experiential learning.

In PAR Cycle One, we strengthened our first two units of the year. In this chapter, I describe the processes in which we engaged in during PAR Cycle One, present the emerging findings from the data collection and analysis, discuss implications relating to literature about the topics, and outline the PAR plan for Cycle Two.

PAR Cycle One: Activities

In this section, I provide background information about the participants and the process activities in which participants engaged in PAR Cycle One, including our initial work as a collaborative team building our grade three curriculum and the challenges that we faced. I explain the protocols to support adult learning and the instructional strategies we used for student learning that demonstrate alignment with the transdisciplinary and thematic curriculum in which IB PYP is based and include evidence from parent meetings that contributed to the fuller understanding and support of the curriculum and instruction. These key activities constituted the puzzle pieces of putting together a coherent IB PYP curriculum and implementing the curriculum in the classroom.

Participants and Process

The participants in PAR Cycle One included the grade three teachers and students. The teachers who participated were Mr. Brad (grade three homeroom teacher and PYP coordinator), Mr. Tata (music teacher), Ms. Jasie (dance teacher), Mr. Andres (PE teacher), Ms. Carla (art teacher), Ms. Erma (ICT teacher) and me (principal). Ms. Jasie and Ms. Erma are from the Philippines and had worked at our school since it opened in 2011. Mr. Andres is from the United

States and had been with Wells International School for two years. Mr. Tata is from Thailand and had also been with Wells for two years. Mr. Brad, our grade three teacher and primary coordinator, had been at Bang Na for two years; he was new in his position as coordinator. Ms. Carla had just started with Wells at the time of the study and is from South Africa.

Initial Work as a Collaborative Team

By using common planning time**,** the process of building, strengthening, calibrating and implementing our curriculum and themes was highly collaborative. Together we built the first two units of the year. In order to effectively use our collaboration time and reflect on the process, the co-practitioner research group (CPR) established protocols and reflected on how we, as educators, learn best. During this process, I collected observation data using a variety of tools while examining instructional strategies, student learning, and evidence of PYP elements in the classroom.

In PAR Cycle One, we revisited the program and strengthened the first two units of the year, "How the World Works" and "How We Express Ourselves." "How the World Works" is an inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; and the impact of scientific and technological advances on society and on the environment (IBO). "How We Express Ourselves" is an inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs, and values; the ways in which we reflect on, extend, and enjoy our creativity; and our appreciation of the aesthetic. During PAR Cycle One, we collected qualitative evidence to calibrate and practice the PYP skills, concepts, attitudes, and learner profile attributes that are the foundation of the curriculum.

Challenges in Cycle One

We faced two primary challenges in Cycle One: a staffing issue and some apprehension among teachers regarding the changes to our curriculum. At the beginning of the school year, the art teacher resigned after missing the required IB PYP workshop and declining the alternative to attend the workshop in September. Although it was not a surprise when he left our school, we did not to find a suitable art teacher for a month, and the newly hired teacher, Ms. Carla, was new to the IB PYP model and was not able to attend the IB PYP workshop. In addition, she was a novice art teacher. However, Ms. Carla was eager, hardworking, collaborative, and willing to learn. She planned to attend "Making PYP Happen in the Classroom" in academic year 2018-2019.

The second challenge was teacher apprehension with the new curriculum. Although the PYP workshop provided a baseline of knowledge for our teachers, some teachers were not entirely confident or experienced using an inquiry-based approach in the classroom. Our teachers had various levels of expertise in constructivist pedagogy and student-driven instructional practices. We planned to address these issues in PAR Cycle Two, during which time we would revisit the cycle of inquiry model that we follow at Wells and discuss the importance of utilizing the phases of inquiry. We expected to build confidence among our teachers as we continued our journey of becoming a PYP school.

Grade Three Curriculum Building

During Cycle One, our CPR group met weekly from 1:00-1:50 each Wednesday in order to effectively create and implement our curriculum. Mr. Brad (the grade three/PYP coordinator) and I facilitated the meetings. At the beginning of each unit, the CPR brainstormed ideas for the specialist teachers to connect their subjects in a meaningful way to the transdisciplinary themes

either through the content area or key concepts. As the unit progressed, the CPR group used collaboration meetings to update each other on activities and learning engagements used in each class. The team discussed the progression of the unit, co-wrote the unit planners, and evaluated and adjusted the program of inquiry. The CPR group identified student accomplishments (what worked well) connected to the central ideas, lines of inquiry, learner profile, and key concepts, and they recorded this information in the unit planner. At the end of each unit, they reflected on the student learning using sentence starters, such as the following:

- Students exhibited…

- Students exhibited… when…

- Students showed an understanding of... when...

- Students showed an understanding of… by…

- Student's… was an example of…

An example of recording student learning using sentences starters is "Students exhibited the learner profile open-minded when they chose to create a flag of a different country than their own."

The grade-three team examined the areas in which they could improve student learning by recognizing struggles, failures, or obstacles connected to the central ideas, lines of inquiry, learner profile, key concepts, and they recorded this information in the unit planner. At the end of each unit, they reflected on these areas for improvement using the following sentence starters:

- Students didn't demonstrate… like I had expected

- Students seem to still have trouble understanding…

- While… worked well… there was some difficulty with...

Focusing on areas for improvement helped the grade three team discuss what could work better next time, and they recorded their reflections in the unit planner using the following reflection sentence starters:

- Next year I would… instead of…

- In order to help students, understand… in the future I will…

- I will consider… next time I teach this unit

- I would like to change… because...

The use of collaboration time created a community of learners among our teachers while improving the learning for our students. The teachers reflected on their own practice and shared their thoughts with the team which allowed for thoughtful lesson planning and facilitation.

Using Protocols to Support Adult Learning

In order to gauge how our teachers were feeling about their learning as well as thoughts about optimal learning, we completed reflections using the four-square reflection tool and journey lines. The four areas of the reflection tool were "What Happened," "How do I feel," "Ideas," and "Questions." After we completed the four-square reflection, we divided into two pairs and a trio to discuss our organizers. Then we came together as a group and analyzed the evidence, looking for common themes (see Appendix G). Common themes in the reflections were that grade-three teachers are enthusiastic about our collaboration and that they report that communication flows easily. Other grade levels that are not the focus of this project were having challenges in effectively collaborating. Thus, by learning from the third-grade team, we planned to co-create collaboration protocols that would work for our school before PAR Cycle Two.

The education journey line addressed this question: "*What are the experiences in formal and informal education that have been most important in your professional and personal*

learning and growth?" Our CPR group used a timeline to answer the question, identified the two most important experiences, and had discussions in pairs. We then met as the whole group and discussed the conditions in which we learn optimally (see Appendix H). The data collected from these two protocols shared a common theme that we learn optimally when we have formal education experiences supported by experiential and hands-on learning.

Instructional Strategies and Student Learning

During PAR Cycle One, I observed the homeroom teachers four times for approximately fifty minutes each time. I used a variety of classroom observation tools in Cycle One to gain insight on the teaching and learning occurring in our grade three classrooms. For the first observation, I used the Marzano teacher evaluation tool that focuses on teacher effectiveness. The Marzano teacher observation form consists of three domains or sections: Classroom Strategies and Behaviors, Planning and Preparing, and Reflecting on Teaching. The level of teacher competency in each category is based on a five-point Likert scale (four being innovating and zero not using). The second evaluation method that I used was transcription of teacher and student dialogue during a lesson. In the third and fourth lessons, I observed teacher-student questions and tallied the number of personal, factual, probing, higher cognitive, and clarifying questions posed by the teacher and the students. I observed one music class using the questioning pattern tool as well. I watched the students learn physical education looking at student interactions, engagement, and inquiry in the activities.

The data collected from class observation indicated that students were engaged and learning concepts in a transdisciplinary fashion. The teachers and students asked questions including higher-cognitive questions, personal questions, and factual questions. Students and teachers asked probing questions and clarification questions less frequently. The classroom

environment was relaxed, and students were speaking confidently and asking questions, indicating that they feel comfortable in the classroom.

Parent Voice

Parent voice was an addition to our initial plan for PAR Cycle One, but we decided that we needed to deepen parents' understanding of our instructional approach within the framework of IB PYP. Wells International School Bang Na had a parent meeting introducing IB PYP on October 5th, 2017. The objectives and goals of the meeting were to demonstrate what teaching and learning looks like at Wells International School Bang Na. A team of teachers and I planned and facilitated the meeting. The parents participated in a mini inquiry into "Who We Are" as a community. At the beginning of the workshop, parents rearranged the room and sat with the people with whom they felt most comfortable. Then, the parents watched a short video showcasing the students, teachers, parents, and community at our school. The parents completed a K-W-L chart about the video. They engaged in experiential learning, including a human continuum and concentric circle activity to find out about the demographic make-up of our school. We have had parent workshops in each PAR cycle adding more depth and deeper learning in each subsequent parent workshop.

Student Output

Our grade-three students used an online, interactive seesaw program to build digital portfolios, which were intended to record the learner profile attributes, attitudes, concepts, and skills that were present in the students' learning. Unfortunately, during PAR Cycle One, the digital portfolios showcased the student work but provided little insight to data patterns concerning learner profile, attributes, skills, and concepts. Nonetheless, the combined data

collection tools were useful in examining which elements were present in the curriculum and which areas needed further development.

The first goal in my research design was to address the research sub questions: How are our teachers naming, practicing, and calibrating the PYP skills, concepts, attitudes, and learner profile attributes to build our curriculum?; and To what extent are the skills, concepts, attitudes, and attributes evident in how teachers are planning and implementing across all disciplines at grade three? The data collection tools included: class observation tools, reviewing unit planners, participation in collaboration meetings (with teachers and parents), examining student work and digital portfolios, and analyzing teacher's reflections and journey lines. In the next section, I present the initial emergent themes from the data collected in PAR Cycle One.

Emergent Themes

The emergent themes I discuss in this section were generated from both deductive and inductive analyses of data collected in PAR Cycle One. The emergent themes include: (a) the essential elements of IB PYP present in our curriculum, (b) the need for calibrating student and adult learning according to the zone of proximal development, (c) the benefits of utilizing experiential/discovery learning, and (d) the crucial role of collaboration and learning in public as our school team works to become a professional learning community. In the next cycle of research, the themes are assessed deductively. Table 3 outlines the emergent themes in PAR Cycle One.

I began organizing the data using a deductive approach looking for the IB PYP skills, key concepts, attitudes, and learner profile attributes. Each unit of inquiry focused on two or three key concepts, a few IB PYP skills, and a couple of IB PYP learner profile attributes. The attitudes were not explicitly stated in our unit planners, but they should have been embedded in

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Table 3

Emergent Themes in PAR Cycle One

Theme	Analysis	Evidence
Elements of PYP evident in curriculum	Data suggest that learner profile and key concepts are strong in program. Attitudes and skills need to be more present in our curriculum.	Classroom Observations indicate the use of the elements in the curricular units of instruction.
Zone of Proximal Development • Prior Knowledge • Incremental Learning	● Cycle of Inquiry revisited for professional learning opportunity for teachers ● Some teachers and parents require scaffolding about constructivist approach; workshops are needed to solidify their understanding.	● "I feel that we are doing our learning of IB in small steps which helps us learn" (Mr. Andres) ● "Sometimes I feel befuddled" (Ms. Carla) ● "I feel happy about collaboration because it gives me more information and knowledge as well, but at the same time I am a little bit confused on how to integrate my subject into the unit" (Ms. Jasie)
Experiential Learning/ Discovery Learning	● Our students and teachers largely have the same pedagogical beliefs about how we learn best. ● Many parents are used to more traditional approaches to education and require exposure to constructivist, inquiry-based education.	● "Do my own research. Learn to adjust my lessons from mistakes and failures." (Mr. Tata) ● "A lot of hands-on learning and during my internship. I feel like I learned the most in my classes…watching myself teach and peer feedback" (Mr. Andres) ● "I would love to see PYP in action in other experienced schools to see how it works in real life. I learn by doing/practicing. " (Ms. Erma)

Table 3 (continued)

Theme	Analysis	Evidence
Collaboration: Learning in Public	- Some grade levels are on track; others need support. - School-wide protocols need to be developed. - Need to revisit norms of behavior for effective collaboration. - Our parents are more active than ever before; they have helped with three events and function this year.	"I feel like this should've happened many years ago, collaborating makes a community stronger. I feel happy with what we are doing right now" (Mr. Tata) "I feel comfortable and not stressed to share my ideas in the group" (Mr. Andres) "By working together with other teachers, the process of unit planning was easier and efficient. This is what we do now in our collaboration meetings." (Mr. Andres)

our school programs. The first step I took in looking for these elements was to analyze our school's written documents including our program of inquiry (which we developed collaboratively in the pre-cycle of research) and the first two-unit planners of the year for grade three. I triangulated this data with student work and observations of student in the classroom. I also videotaped four student-led conferences, but this provided little data other than the students exuding confidence and communicating effectively. The PYP learner profile was easy to embed in our curriculum as they are simple and understandable character traits. It was harder to embed and record the PYP skills as we had not yet named them, and the teachers were not yet explicitly addressing the skills in their lessons.

In PAR Cycle One, I worked with our grade three students learning the learner profile attributes (balanced, knowledgeable, risk takers, reflective, caring, principled, open- minded, communicators, thinkers) once a week for six weeks. I assessed our students' prior knowledge, facilitated discussion on the attributes that the children did not know, and had the children define what each attribute meant to them. The children were then guided in choosing a way to represent their understanding of the learner profile attributes. The grade three students decided (with my encouragement) to produce posters about the characteristics to display around our school. The children wrote their own quotes and staged the scene for their posters. The posters were displayed in the front of our primary building. I discuss the findings from the evidence and the issues that we still need to address.

The data indicate that in the first two units of study (total units=six) in grade three, five of ten learner profiles were present, (50%), six of eight key concepts were present (75%), three of twelve attitudes were present (25%), and thirteen of twenty-three skills were present (56%). Overall, the evidence indicates a strong presence of the learner profile in our program of inquiry.

However, our teachers needed to more systematically calibrate the curriculum to include the PYP attitudes and skills as well to create a well-rounded education in order to meet the requirements of the IB PYP framework. In conclusion, whereas learner profile attributes and key concepts were strongly present in our curriculum, we needed to focus on incorporating the skills and attitudes in our curriculum in PAR Cycle Two. The data collected showed IB PYP learner profile attributes, skills, attitudes, and key concepts were seen in student output including digital portfolios, student work, student led conferences, and class observations.

Emergent Theme Two: Zone of Proximal Development Approach for Students and Adults

During PAR Cycle One, we were in a transitional phase in which intense learning was happening, and we needed to adhere to the zone of proximal development to successfully learn without feeling overwhelmed in the process. The adults in our community also needed to learn incrementally in digestible pieces in order to maintain transitional flow and stave off apathy while we progressed towards IB authorization. Vygotsky (1978) defined the zone of proximal development as "the distance between actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others" (p. 86). Thus, the coordinated learning of students, teachers, and parents was necessary to fully accomplish our goals. I discuss how this applies to student learning and adult learning.

Student learning needs. We needed to pay more careful attention to students' prior knowledge and level of understanding when introducing new concepts; while teachers used some of the elements of the practice—for example, they were teaching in a transdisciplinary fashion— they needed more experience in constructivist methodology in order to create inquiry lessons using higher cognitive questions in their unit plans and practice. Vygotsky's (1978) zone of

proximal development is represented as a developmental phase in which learners cannot yet accomplish the given task on their own but requires assistance from an expert. The teachers at our school, in general, assess prior knowledge in their classes when introducing new ideas and curricula; they scaffold lessons for the children when needed and review previous learning before introducing new concepts. For example, Mr. Tata, teaching the children to read music asks, "Can anyone tell me what notes we have learned so far?" (teacher observation, November 2017). The KWL chart (what you know, what you want to find out, what you learned) is a frequently used tool at our school to assess prior knowledge and effectively scaffold our students' learning. The tool allows the children and the teachers to visual their knowledge of a content area and build on the visualization creating a summary of the students' learning journey.

Adult learning: Teachers and parents. Adult learning needs the same attention as the attention teachers are giving to student learning. Vygotsky's focus on children's acquisition of knowledge in his research of the zone of proximal development matches, to some degree, what Knowles (1980) originally termed andragogy, "the art and science of helping adults learn" (p. 42). Later Vygotsky revised his thinking and asserted that andragogy and pedagogy both address the question of how people learn best and may be two ends of the same spectrum. Regarding the adult learning at our school, the data support that a more systematic, incremental approach needed to be implemented to support our teachers, parents, and community in their learning journey. Using the theory and practice of zone of proximal development is critical for our teachers so students do not get lost in inquiry-based, transdisciplinary curricular approaches.

Teacher knowledge. Although all current teachers, except for two new hires (in PAR Cycle One), had taken the first IB workshop, "Making PYP Happen in the Classroom," none of our teachers had formally worked in an authorized IB PYP school. Five teachers attended second

trainings and many teachers attended universities that used a constructivist education model; however, our collective pedagogical knowledge in inquiry-based instruction was varied. Teachers had different approaches to classroom teaching; some teachers utilized inquiry-based approaches in their classrooms more than others. My research about teachers' confidence levels in inquiry-based instruction supports the claim that more professional learning and support was needed for some teachers to feel comfortable, while others felt secure using the IB PYP framework and approach in their teaching. Mr. Andres stated, "I feel that we are doing our learning of IB in small steps which helps us learn" (Four Square reflection, October 20, 2017). Ms. Carla, when speaking about planning and learning using the PYP approach said, "Sometimes I feel befuddled" (Four Square reflection, October 20, 2017). Ms. Jasie noted "I feel happy about collaboration because it gives me more information and knowledge as well, but at the same time I am a little bit confused on how to integrate my subject into the unit" (Four Square reflection, October 20, 2017). These responses indicate that the teachers are learning incrementally and even though they feel frustrated or confused at times, the grade level collaboration is providing support for their learning.

Vygotsky ascertained that social environments affect child development before learning occurs. This is true of adult learning as well; a supportive environment is needed for maximum learning to occur. Drago-Severson (2009) stated, "Developmental capacity concerns the cognitive, affective, interpersonal, and intrapersonal capacities that enable us to manage better the demands of leadership, teaching, learning, and life. The new mental demand placed on educators often exceed our developmental capacities" (Drago-Severson, 2009, p. 8). Class observations revealed that teachers' levels of understanding regarding inquiry-based education were not the same and required a variety of scaffolding and use of the zone of proximal

development. As a leader, I needed to look at our teachers and their individual knowledge and expertise as I would a class of students and adjust professional learning goals in constructivist education and inquiry-based learning

Parent knowledge. Prior to our parent workshop on the IB PYP approach, I assessed how much parents knew about PYP; 65% of the respondents said they knew a little bit about the program, 25% reported that they had some background knowledge, and 10% said they knew nothing about the program. In addition to not having much prior knowledge about the IB PYP, the parents did not know much about American curriculum or student learning. The workshop was successful in establishing a baseline of knowledge among our parents. In reflecting on the workshop, I think some pre-workshop materials explaining different curricula to the parents would have been useful in developing their background knowledge. Wells Bang Na hosted a second workshop in January 2018. We sent out a parent questionnaire prior to the workshop to assess our parents' prior knowledge. The data indicate the prior knowledge of IB PYP curricular framework before attending our parent workshop.

When asked to complete a K-W-L chart at the parent meeting; some parents wanted to know "Why are we changing to IB?" (parent workshop, October 5, 2017). Another parent wrote, "We would like to know more effective ways to support our children's education and enhance their knowledge at home (effective home-school partnership)" (parent workshop, October 5, 2017). A third comment was "IB vs. US vs. UK" (parent Workshop, October 5, 2017). The community was still unsure about the PYP. Adults, just like children, possess different learning styles and have varying prior knowledge in any given subject. The zone of proximal development theory can provide learning support needed for the growth of teacher and parent

knowledge base. These comments indicate parental difficulty in understanding different curricula and will be addressed in PAR Cycle Two.

Emergent Theme Three: Experiential Learning Essential During Transition

As Wells International School Bang Na transitioned to becoming an IB PYP school, incorporating experiential and discovery learning was essential. Experiential and discovery learning enable learners to make their own meaning and instills accountability in the learning community by increasing motivation, making topics to tangible to learners, and instilling a love of lifelong learning. Experiential and discovery learning links theory to practice and provides a process for teachers and students to make meaning on their own in their specific contexts. When teachers and community are part of the process, learning in a constructivist way, effective learning is modeled for the students and the collaborative community gives teachers both accountable and agency (voice).

In PAR Cycle One, we were still in the process of developing our curriculum, creating and evaluating our program of inquiry, and writing new policies. To create policies, teachers joined focus groups based on their background knowledge. The three focus groups were assessment policy, special needs policy, and language policy. I asked the teachers, "What are your feelings about contributing to the development of our school and being part of school-wide initiatives, such as creating the program of inquiry, curriculum development and policy writing?" (teacher survey, January 10, 2018). One teacher answered, "I feel grateful to be part of it and feel like I can learn a lot from the process professionally and personally" (teacher survey, January 10, 2018). Another teacher said, "I enjoy being a part of these opportunities because they make me feel connected and knowledgeable about how the school operates" (teacher survey, January 10, 2018). One more comment was, "I also learned a lot from being a contributor". This anecdotal

evidence indicates that teachers believe being part of the process and learning by doing is the appropriate model for adult and student learning at our school.

Dewey (1938) said that "[t]here is an intimate and necessary relation between the processes of actual experience and education" (p. 7). He believed in transdisciplinary, integrated learning that makes connections between real life and the classroom. Our teachers validated Dewey's theory when they were asked about their own educational experience and the importance of linking theory to practice. Mr. Andres said, "A lot of hands on learning and during my internship I feel like I learned the most in my classes. Also watching myself teach and peer feedback" (education journey line, October 18, 2017). Ms. Jasie said, "When I was in college and doing my thesis-it's the best part of my learning experience combined with research and I have to depend on it" (education journey line, October 18, 2017). Mr. Tata said, "Do my own research. Learn to adjust my lessons from mistakes and failures" (education journey line, October 18, 2017). The teachers' responses concur with our goal of creating experiences for them to participate in discovery so that they in turn could create those experiences for children.

Our school's process of transitioning to become an IB PYP school was a large-scale project of discovery learning. We made major changes in instructional methods, collaboration among grade levels and departments, the written curriculum, and the learning in Cycle One. Our teachers co-created our units according to content and skills taught. These actions support the importance of background knowledge in the content areas of the transdisciplinary themes and more importantly, they were interested in the subject matter which inspires student learning. Freedom of intelligence, according to Dewey, is the most important kind of freedom. "The only freedom that is of enduring importance, that is to say, freedom of observation and of judgment exercised in behalf of purposes that are intrinsically worthwhile" (Dewey, 1938, p. 61).

Bruner (2003) developed the theory of "discovery learning," which states that children learn best when they can find out more about the subject matter and build on previous knowledge on their own in a way that makes them think for themselves. Ms. Erma stated, "I would love to see PYP in action in other experienced schools to see how it works in real life (I learn by doing/practicing)" (teacher reflection, November 16, 2017). Mr. Brad said (in a pre-cycle grade three team verbal reflection), "Today in our grade three collaboration meeting, we talked about the importance of writing student-centered reflection. In order to help the specialists and teacher, I had them write examples of the things that grade 1 has said, done, accomplished, created, and actions while keeping evidence in mind. They also recorded what the students could do better at" (interview, November 20, 2018). Bruner's (1971) theory on discovery learning encouraged cooperative learning yet emphasized metacognition. He said, "Discovery teaching generally involves not so much the process of leading students to discover what is 'out there', but rather, their discovering what is in their own heads" (Bruner, 1971, p. 72).

As evidenced by their comments, the teachers were becoming more reflective in their teaching practice—individually and collectively. Some students were beginning to be more reflective in their learning. When reflecting about why he was incorrect on a math test, Kyle (grade three) said, "I got the number 1 wrong because I choose B instead of C the B, they said that find each sum. Identity the addition property. The B said associative and the C said identity that's how I got it wrong" (Seesaw, November 2018). Mind (grade three) reflected on her learning, stating "When I think am not good at something, I try to make it better I did math that is hard and I think I should try again" (student work, November 2018). The process of learning, according to Bruner, involves acquisition (learning the new knowledge based on previous learning, transformation (transferring the learning to new situations), and evaluation (reflecting

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on the learning). This process applies to pedagogy and andragogy (adult learning) alike, and it was apparent in our evidence that discovery and experiential learning were integral in our changing school.

Emergent Theme Four: Building Community Through Collaboration and Learning in Public

Collaboration and learning in public are crucial in building a community of learners who are confident sharing information, knowledge, and expertise; learning from each other; and growing together. Learning in public is a key part of creating gracious space for learning and a tenet of the community learning exchange approach to school reform (Guajardo et al., 2016). A key emergent theme found is that we were successful in beginning to build a community of learners at Wells International School Bang Na; however, we needed to continue to grow in our collaborative efforts to be more comfortable with learning in public.

Collaboration. One main guideline of PYP is that schools must exhibit collaborative environments. According to the IBO (2013), schools are defined as groups of learners that work together to create communities. Mr. Tata said, "PYP is a program that requires all teachers to be engaged in the planning process. Collaboration is the key part of planning for school implementation of the curriculum. A collaborative culture is at the core of this; it is not just about the students working together, but also the teachers and staff" (professional development reflection, November 16, 2017). Ms. Jasie stated, "I think it would be better if everyone in school knows about the IB Program, shares expertise and supports each other not only for the school but also to impact our students' learning, our parents and our community" (professional development reflection, November 16, 2017). Kruse et al. (1994) stated, "In schools where professional community is strong; teachers work together more effectively and put more effort into creating

and sustaining opportunities for student learning" (p. 4). These teachers' comments show that they engaged in and valued collaboration.

   Learning in public. A gracious space provides a setting and spirit to invite the stranger to learn in public. The stranger can be a new idea as well as a person coming into a community. The teachers indicated that learning in public was a contributing factor to building a strong community; however, making mistakes in public and reflecting on them is not always easy. Mr. Tata (music teacher) said, "I feel like this should've happened many years ago, collaborating makes a community stronger. I feel happy with what we are doing right now" (Four Square reflection, October 20, 2017). Mr. Andres said, "By working together with other teachers, the process of unit planning was easier and efficient. This is what we do now in our collaboration meetings" (Four Square reflection, October 20, 2017). Our teachers worked together to build the curriculum; however, we needed to improve in terms of functioning as a professional learning community. Our CPR group worked together very well, and we established a protocol in which Mr. Brad sent out weekly emails regarding the agenda or work area for the meeting and either he or I ran the meeting depending on the area of focus. This worked well for our grade three collaboration team; however, school wide there were some communication issues that needed to be addressed. Also, we knew it would be beneficial for the whole school to establish (re-establish) shared norms and values and a cohesive collaboration protocol.

   Mr. Andres pointed out that the whole school community needed to be involved in the collaboration process. He said, "I think it is essential that all staff in the school need to be involved in order to plan and implement what our students are learning. Not only teachers, but also the principal, office staff and our teaching assistants. Collaboration needs to be routine in any school, so all staff are aware of what is happening in each classroom."

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As we were moving toward IB authorization, it was necessary that we model learning in public for our teachers, students, staff, and community. Mr. Andres said, "I feel comfortable and not stressed to share my ideas in the group" (Four Square reflection, October 20, 2017). Ms. Carla, our new art teacher was nervous and tense when she first joined our CPR group for collaboration meetings; by the end of the semester, she smiled, laughed, made jokes, shared her ideas, and openly reflected on which lessons worked well and which ones did not in her classes. The general mood in grade three collaboration meetings was upbeat and positive, with participants communicating effectively.

However, there were collaboration difficulties at other grade levels and stricter protocols needed to be developed school effort in order to create a more cohesive learning community for PAR Cycle Two. As a leader, I needed to empower teachers to utilize their strengths for school improvement and build greater trust regarding learning in public.

Unfortunately, the data collection was limited concerning learning in public; however, observations of collaboration meetings and students in their classrooms indicated that our community of learners was becoming much more comfortable learning in public than they were in the previous year. One question on our professional development reflection was: "In which ways have I used the ideas and processes I learned in the workshop to impact student learning" (Professional Development reflection, November 20, 2018). One teacher answered, "Encouraging students to lead discussions of their wonders when possible, open communication between grade level teachers regarding our unit planners and providing descriptions of a unit activity when displaying student work on the bulletin board" (professional development reflection, November 20, 2018). In conclusion, learning in public did occur regularly; however, I continued to collect data on this and the collaboration process throughout each cycle.

Summary of Emergent Findings

One theme in PAR Cycle One indicates that the learner profile attributes are represented strongly in the curriculum at Wells International School Bang Na. The key concepts, attitudes and skills were not as prominent in the curriculum. The curriculum, during PAR Cycle One needed to be calibrated to include these elements. The second theme indicates that we need to fully embrace the zone of proximal development and incremental learning to be successful in transitioning to becoming an IB PYP school. The third theme reinforces the importance of experiential and discovery learning to empower teachers, students, and our community to take charge of their learning. The fourth finding suggests the significance of building community through collaboration and learning in public in order to create a school.

One limitation with the data collection and analysis of the PYP elements is that I did not explicitly look for the learner profile attributes, key concepts, skills, and attitudes in class observations. Another limitation in my data collection was that students and teachers were initially lumped together in the chart and were only separated during the analysis phase, which caused confusion. This oversight was addressed and adjusted in the PAR Cycle Two by using a more concise table for recording the elements and by noting teacher representation/student representation separately.

Moving Ahead: Key Learning to Apply to PAR Cycle Two

According to Stringer (2014), "action research works on the assumption that all stakeholders whose lives are affected by the problem of the under study should be engaged in the processes of investigation, acquiring information (collecting data) and reflection on that information (analyzing) to transform their understanding about the nature of the program under investigation (theorizing)" (p. 15). A major shortcoming in the process of collaboration in the

first action cycle of this research was that I did not involve the CPR group in collecting

deductive data about the essential elements of the IB PYP program in their classes. In this

section, I discuss key learning from PAR Cycle One and how we can apply what we learned

going forward by using guiding principles, strengthening our professional learning community

and shifting some of my leadership practices.

Using Guiding Principles

The IB PYP has seven guiding principles for creating an effective PYP classroom (2015):

- Create learning environments that allow students to take ownership of their learning

- Provide opportunities for reflection

- Organize classrooms for collaboration and cooperation

- Use authentic tasks and problems

- Provide opportunities for practice of ways of thinking and learning

- Provide learning support and scaffolding

- Create a culture of respect and understanding

At the start of PAR Cycle One, the CPR group examined these seven principles to ensure

that we adhered to the principles in each class. The culture of our grade three team was positive,

and teachers were willing to discuss their strengths and growth areas. Mr. Brad created a concise

chart to collect data and evidence of the essential elements at each grade level, but the teachers

did not use the recording tools during PAR Cycle One. Our team modified the table before the

second research cycle and used this tool for collecting data regarding PYP learner profile

attributes, concepts, skills, and attitudes in grade three. Mr. Brad and I recorded the evidence

every other week. Our CPR group effectively created unit plans and the program of inquiry

which were the curriculum map for grade three; however, our growth area was recording and

reflecting on student learning horizontally at this grade level. Now we needed to move forward by using what we had learned in grade three in the entire school.

Revisiting Professional Learning Communities

In Chapter 2, I argued that leaders must create the school climate and plan for meaningful policies and practice in order to promote healthy, collaborative communities at our school. It is the responsibility of school leaders to generate opportunities for professional learning and to work together to create policies, protocols, and practices that will strengthen the bond of the group. The evidence in PAR Cycle One indicates that our grade three CPR group was working together effectively; however, there were issues at other grade levels, particularly the K2 team and the Pre-K/Nursery team. They were having difficulties with power struggles and communication. According to Louis, Mark, and Kruse (1994), the following list of characteristics is distinctive of and critical to professional learning:

- Shared norms and values: Collectively agreed on professional beliefs support and sustain professional practice

- Focus on student learning: Establishing students' intellectual growth as a prime professional goal is a characteristic of professional communities

- Reflective dialogue: Teachers reflect on and evaluate their professional practice through conversations with colleagues

- Deprivatization of practice: Continuous reflection on and improvement practice require interaction with and feedback from colleagues

- Collaboration: In addition to sharing expertise, working collaboratively sustains reflective dialogue and deprivatization of practice.

Kruse et al. (1994) stated that certain structural conditions must be in place for professional learning communities to be successful. Collaboration time needs to be allocated and built into the schedule. The blocks of time must be regular, substantial, and ongoing. Collaboration time built into the schedules at each grade level has helped teams of each grade to work together, but I found that we needed time as a full school to break into flexible groups for other mini projects as well. To create this time, I attempted to have a late start for our students once a month in order to provide two or three hours of whole-school collaboration time. Because I was unable to secure approval for this change, I instead created space on Wednesday afternoons for all staff meetings by not assigning any of our teachers to teach after school classes on that day.

To determine if teachers believe our school culture and climate is positive and improving, I scheduled a professional development day on our first day back after winter break. We examined our shared norms of behavior that we created at the beginning of the year and discussed way to communicate and work together effectively. We revisited and strengthened our collaboration protocol to maximize our time together. We also revisited the cycle of inquiry. For the professional development to be a collaborative process, I asked the PYP coordinator (Mr. Brad) and the Head Teacher of early years as well as volunteer teachers to develop the sessions as a team. Strengthening all teams would be a focus of PAR Cycle Two.

Reflecting on Leadership

The aspect of leadership of which I was most proud in this PAR cycle was effectively building a community. There was a noticeable change in our teachers, parents, staff, and community at Wells International School Bang Na following PAR Cycle One. In the Wells community (the other two campuses), Wells Bang Na is known for our community-like feeling,

and teachers have expressed interest in coming to our campus because of our reputation. As the parent workshop photographs indicate, the whole community was engaging in learning and growing together. Our parents and PTO were important players in our school performances, celebrations, and charity events during the first year of the PAR. When asked about why they were active in our school community, one parent said, "We enjoy working together and our friendship, but mostly we are doing it for our students." The PTO during Cycle One was comprised of Thai parents.

The leadership growth areas that I identified for PAR Cycle Two were allowing for more meaningful interactions and professional learning opportunities in grade three and the whole school, creating a stronger pedagogical leadership team, and utilizing the strengths that our teachers have. Some of these goals overlapped with other plans for Cycle Two. For example, the professional development meeting scheduled for the first day after winter break met the needs of creating professional learning communities and a leadership model that allows for meaningful interactions and professional development.

Our pedagogical leadership team consisted of Mr. Brad (Grade three teacher and PYP coordinator), Ms. Viki (K2 teacher and Early Years Coordinator), Ms. Oh (Thai director), and me in PAR Cycles Two and Three. We met to calibrate our approaches about our IB action plan and other important areas; however, our meetings were sporadic and follow through was spotty at best. Moving into Cycle Two, we needed to have more frequent meetings, with clear agendas, more discussion about professional learning opportunities, and clearly defined improvement goals to work towards as a team.

With the encouragement of one of my own professors, I discovered the importance of learning each teacher's strengths, challenges, likes, dislikes, and growth areas just as I would a

class of first graders. In response to a class assignment, professor Ed McFarland wrote, "Can you tap into the already available expertise? Teachers are just like students – already know about some things, are interested in others and willing to learn when provided meaningful and engaging opportunities." Working to integrate this approach could help me to empower teachers to lead when they can and follow when they need to and hopefully take control of their own learning, just as students do in the classroom when given a trusting, authentic, growing environment. Moreover, McFarland's advice reminded me of the importance of modeling learning principles with teachers for students to see. If we model best practices in teaching and learning with our teachers, then hopefully these approaches will trickle down to our students as well.

Another professor, Lynda Tredway (my ECU professor and advisor), assessed that I did not seem confident in my leadership abilities and seemed too tentative and apprehensive. I agreed with her evaluation and considered ways to grow into a more authoritative stance in leadership capacity while continuing to build distributed leadership capacity of staff members. I recognized I needed to exude more confidence as a leader. To contribute to this goal of professional development, in PAR Cycle Two, I would collect data about my leadership.

Conclusion

In this chapter, I outlined the work our CPR team engaged in during the PAR Cycle One. I highlighted the instrumentation and data collection, identified emergent themes, and the examined the PAR in relation to the research questions. In PAR Cycle Two, the focus of study expanded from grade three to the full school and focused on our teachers and how they responded to our school transition, what changes they made in instructional practices, initiatives they took on, and how they influenced our community of learners. I examined the teachers'

growth regarding the zone of proximal development and the IB framework. In the following

chapter, I will present the process, findings, and implications of PAR Cycle Two.

CHAPTER 6: PAR CYCLE TWO: BUILDING CURRICULUM COLLABORATIVELY

From Par Cycle One, we could see how the PYP elements supported an IB theory of action. We were successful in embedding most essential elements as a cornerstone of our work: 50% of the learner profile attributes were present, 75% of the key concepts were noticeable in student learning, 25% of the attitudes were identified, and 56% of the skills were observed. The second key theme in PAR Cycle One was that we had to be intentional in our learning as a community. More specifically, we needed to use approaches that recognized the zone of proximal development as the teachers, students, and parents were exposed to new information, ideas, and educational experiences. Otherwise, both teachers and students would feel overwhelmed by the cognitive load of learning and doing too much too quickly. Discovery or experiential learning was important in fully understanding how to create effective learning opportunities for teachers and students. This emergent theme indicated that the IB PYP framework fit well with the pedagogy and culture of Wells International School Bang Na. Finally, we learned that collaboration and learning in public are crucial in building a community of learners in our school.

The process of participatory action research and improvement science holds that iterative evidence should influence the next PDSA cycle (Bryk et al., 2015; Creswell, 2014). Thus, PAR Cycle One themes influenced the data collection process in Cycle Two. For example, in Cycle One, I did not collect enough data about teachers' experiences and their feelings about the process of grade-level collaboration, focus group work, and the leadership at Bang Na campus. As a result, in PAR Cycle Two, I concentrated on collecting data about teachers' opinions and experiences. In addition, paying attention to parent voice in the school context was a significant theme in Cycle One, which was not a part of the original set of research questions. As a result,

empowerment of teachers and students as well as parent voice became an integral part of PAR Cycle Two.

In this chapter, I first explain the activities and process of collecting and analyzing the evidence to support PAR Cycle Two findings. Then, I present key findings that resulted from the actions and analysis of evidence. Finally, I examine my leadership and relate our school's experience to a distributed leadership model.

Activities and Evidence

PAR Cycle Two at Wells International School Bang Na campus continued to focus on studying how adults work together to co-create and effectively implement a grade three transdisciplinary curriculum that is aligned and supported by the IB PYP learner profile attributes, attitudes, skills, and concepts. In PAR Cycle Two, I focused more intentionally on the adults in the community. We utilized an approach in which we learned together in public to strengthen our program and model lifelong learning. In PAR Cycle One, the evidence suggested that the teachers were approaching curriculum in a transdisciplinary manner; however, the teachers did not fully utilize the cycle of inquiry because the teachers were not fully knowledgeable about how to use it. Table 4 indicates Par Cycle Two activities and evidence. I then discuss the participants and the process and describe how an increased knowledge base related to teacher, student, and parent actions.

Participants and Process

The grade three team (CPR group) and students were intended to be the center of PAR Cycle Two research; however, other important subgroups were involved in leading self-initiated projects in which our teachers, parents, and students showed leadership in their projects.

Table 4

Activities, Evidence, Participants, and Goals in PAR Cycle Two

Activity	Goals and Objectives	Evidence/Data Collection
IB: Philosophy	Continue to build IB and Wells pedagogical beliefs.	IB Report states that Wells philosophy is aligned with IB principles.
IB: Leadership	Use a distributed leadership model with shared leadership.	Actions are taken to strengthen the entire school's commitment to collaboration.
IB: Written Curriculum	Use transdisciplinary and thematic inquiry that inspires curiosity and learning.	The transdisciplinary, inquiry-based curriculum is collaboratively developed and implemented
Teacher Project	Allow time for students to finish their artwork at lunch.	Ms. Carla's testimonial
Teacher Music Club	Encourage the students to play music at lunch time.	Mr. Tata's testimonial
Policy Writing	Create policy for school and for IB PYP.	• SEN, Language, and Assessment Policies • Teacher Reflections about the Process
Collaboration	Ensure all teachers are utilizing a transdisciplinary approach and reflecting on teaching and learning.	• Grade level collaboration notes • Effective collaboration reflection tool (grade • Unit Planners
Student Learner Profile Project	Create posters with the learner profile and embed the learner profile in our community	• Learner Profile Posters • Student Reflection of the posters
Grade 2 Mural Project	Create a wall mural showcasing student's work and the learner prof	• Community, action and service. • Grade Two Unit
Grade 3 Seesaw Self-Documentation	Showcase student work and reflection	Students reflect on their learning and share with their families.

Table 4 (continued)

Activity	Goals and Objectives	Evidence/Data Collection
Parent Education	Deepen parents' understanding of inquiry-based transdisciplinary education and support parents to support their child's learning journey.	• PYP Parent Workshop Photos • Parent Survey • Parent Posters • PYP Consultation Report
Parent Self-Organization and Action	Self -organize to make changes through action.	• Parent Letter • Dr. Chang's reply

Teachers from all grade levels participated in professional development using the cycle of inquiry and established effective collaboration protocol. Our teachers formed interest-based focus groups to write IB policies for assessment, language, and special educational needs. Our students exhibited self-initiated projects such as the second-grade mural project and the third-grade learner profile project. In addition, our parents were involved in workshops to learn about the cycle of inquiry and transdisciplinary education at Wells Bang Na. The parents proved they have a vested interest in our school and that they can self-organize to accomplish common goals.

Increased Knowledge Base

We laid the foundation of the PAR Cycle Two by increasing our teachers' and parents' knowledge base about PYP content and processes. The first thing we did at the beginning of the second cycle (Spring 2018) was to increase teachers' and parents' base knowledge about inquiry in the classroom. We identified gaps in understanding or misunderstandings of teachers and parents and focused on learning more about how to facilitate the cycle of inquiry with Wells Bang Na teachers and parents. We explicitly engaged teacher and parents in fully understanding the cycle of inquiry by creating inquiry opportunities for them. As we used the cycle of inquiry for student learning, we were modeling this in adult learning. I discuss how the teachers, students and parents increased their inquiry based-learning knowledge base.

Teachers and inquiry-based learning. Through classroom observations and informal discussions with teachers during PAR Cycle One, some teachers expressed discomfort with inquiry-based classroom or constructivist instructional practices. Because we often employ novice teachers, we needed to model for them what they should do with children by gauging their prior instructional knowledge and providing instructional training to support their professional growth. After observing that some teachers were struggling with the cycle of

inquiry, we scaled back and introduced inquiry-based education as in-house professional development opportunity. As Grissom, Loeb, and Masters (2013, p.1) stated explicitly: by observing teachers effectively, the principal should use the aggregate information to structure the professional learning. On January 8, 2018, the leadership team facilitated a mini-workshop to deepen our teachers' understanding and brainstorm practical examples for each grade level. Ms. Viki (our early year's coordinator) and Mr. Brad (our primary coordinator) created and presented this topic. Ms. Viki defined the term inquiry-based learning in this way:

"The term "inquiry" can be vague and confusing. Inquiry based-learning is broad in meaning. So, we need to refer to diagram that divides this complex process into smaller, logically connected units. These units are called inquiry phases. Establishing two cycles of inquiry models that we use at our school will add consistency across grade levels and provide a clear framework for planning and reflection. Additionally, as students become familiar with these phases, they will become more aware of how to expand on a unit of inquiry, and, as a result, become increasingly self-directed learners" (professional development, January 8, 2018).

Mr. Brad and Ms. Viki continued with the professional learning by discussing two inquiry models. We came to consensus that consistency from across grade levels would be effective for our students and decided to use these models. The circular model of the inquiry cycle (see Figure 4) is ideal for young students as it is easy to follow and provides a clear graphic description. The non-circular model is effective in teaching students that the cycle of inquiry does not always go in order through the distinct phases and the cycles are not necessarily linear. Brad and Viki divided the teachers into flexible groups, and the groups collaboratively decided

Note. Retrieved from https://www.smore.com/x6ezf-dolphin-tales
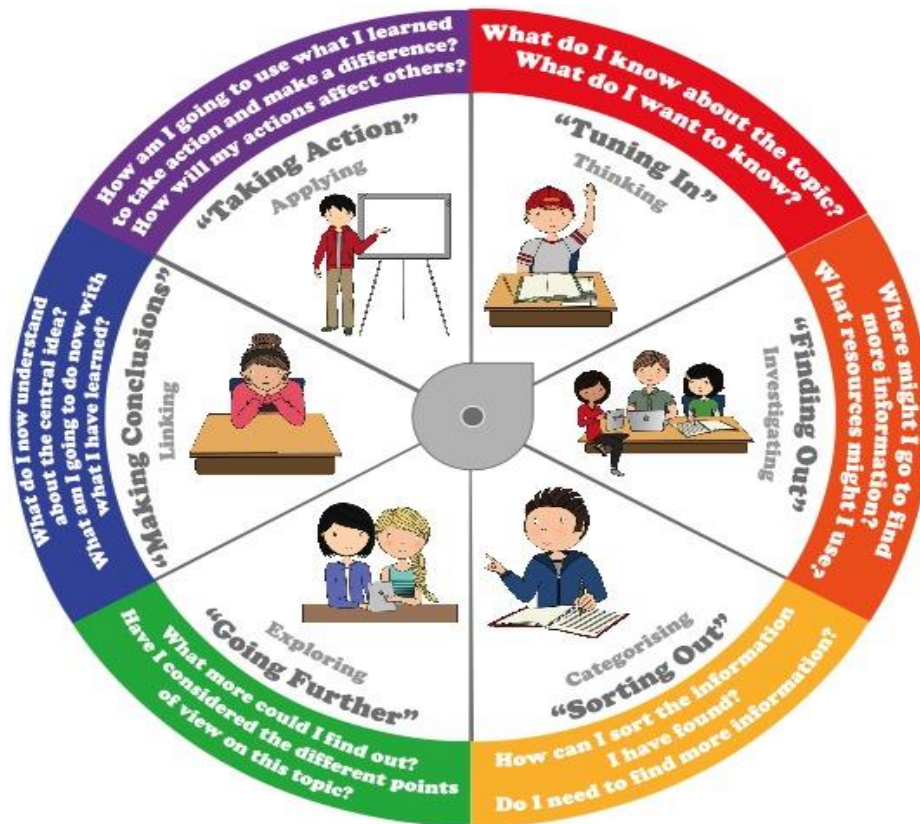
Figure 4. The cycle of inquiry we use for the Wells Bang Na's circular model (Landrum & Heather, 2018).

how to include more inquiry when teaching the units. The facilitators shared a list of visible thinking patterns and learning engagements for teachers to use. The workshop was effective at providing a model that every teacher uses with their students. Most teachers have adopted the circular model for classroom use; the teachers of grade 3 and grade 4 display both models in their classrooms. Figure 4 shows the circular inquiry model we have adopted as a school.

Finally, to use a formative assessment approach when observing teachers, the leadership team and I decided to use a new evaluation tool adapted from the checklist for constructivist teaching methods. This tool allowed teachers to compare their teaching style with the checklist and reflect on whether they were meeting the requirements of a constructivist classroom.

Student actions prompted by teachers. In a second-grade unit, the student inquiry focused on how responsible students can work together to create a better community. Instructional strategies for this unit included a "chalk talk silent conversation" in which the students wrote four prompts/questions on posters. The students responded to the questions:

1. Is it okay to break the law if you believe the law is unfair? Why or why not?
2. What does it mean for someone to be responsible?
3. If you see a homeless man, should you help him? Why or why not?
4. Can one person make a difference in society?

The students silently added to the posters and delved into the topic of being responsible citizens for six weeks. They read the book, "Pass It On" to decide on ways they could help our local community and society. The culmination of the unit was to make improvements around the school. Our students came up with their own ideas (prompted by a book called "Becoming School President"). Since we do not have a student council (at this time) or a school president, the children decided to present their ideas to me, the school principal. The students' ideas for

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school improvement included cleaning the gymnasium, making a sidewalk from the early years building to the primary building, tidying up and taking care of the physical education equipment, cleaning the lot in front of our school and painting a mural. After approval, the students executed the projects with the help of teachers. According to the unit planner, the summative task in the unit was to, "find issues around the school, take responsibility to get the needed materials, and take responsibility for fixing the problem" (Unit Planner, January 19th, 2018). The students achieved this outcome.

Another example of teacher-prompted and student-initiated action is the grade three class and learning the learner profile. Mr. Brad and I taught the third graders the learner profile explicitly in hopes that as the oldest grade in our school, they would embrace the learner profile and teach the younger students by modelling the characteristics (caring, knowledgeable, thinker, inquirer, risk taker, principle, open minded, communicator, and reflective). The grade three students began to display these characteristics and eventually, with some support, made posters of each attribute that were posted in the school.

Parents and inquiry-based learning. At the first parent workshop in PAR Cycle One, parents expressed interest in learning more about constructivist education, specifically the cycle of inquiry and our approach to education. At the first parent workshop, four parents expressed on the K-W-L (know, want to know, learned) chart that they would like to understand IB education and the differences between IB and other frameworks. The parents determined these lines of inquiry: (a) understanding the differences between IB PYP (Wells Bang Na) and traditional education and (b) supporting their children at home. Ms. Kristin (principal), Mr. Brad (Primary Coordinator), Ms. Viki (Early Years Coordinator), Ms. Olivia (K1 teacher), Ms. Casey (G2

teacher), and Ms. Abra (K3 teacher) co-planned and facilitated the workshop for parents. Approximately 35 parents attended that workshop.

The purpose of our second workshop was to deepen our parents' understanding about our educational philosophy and practices at Wells. We watched a short video about progressive education and divided the parents into flexible groups. In a teacher-facilitated activity, the parents sorted characteristics of traditional and constructivist educational practices. By increasing the knowledge of teachers, students, and parents, we were able to create an environment in which the adults gained confidence in the curriculum and began to feel empowered to act at our school in other ways, which I will discuss Section III.

In the next section, I describe how increased knowledge led to collective empowerment of all stakeholders. The key findings from PAR Cycle Two discuss how fully engaging teachers, students, and parents led to a sense of empowerment at our school, which in turn led to individual and collective action.

Collective Empowerment Leads to Action: Teachers, Students and Parents

Fully engaging teachers, student and parents in our processes resulted in a distributed leadership model for our teaching staff and led to student and parent action and empowerment. Finding a balance between being a leader who encourages action in all school organization constituents while maintaining some authority can be difficult, but by focusing on distributed leadership, we have been able to collectively take responsibility for the accomplishments and direction of Bang Na. I begin this section with a description of the evidence from the IB visit report that establishes how we embedded the IB principles in our development. Then I present the findings about collective empowerment by triangulating the evidence from teacher, student,

and parent actions and results. Finally, I discuss my leadership journey and the balancing act of being a leader who believes in and has enacted the principles of distributed leadership.

IB Report Findings

The IB consultant came to visit Wells Bang Na on April 23rd and 24th, 2018. The purpose of the visit was to check our progress in transitioning to be an IB school and to make recommendations in our areas of improvement in compliance with IB standards and practices. The sections in the report are (a) Philosophy, (b) Leadership and Structure, and (c) Teaching and Learning Reflects IB Philosophy. At the end of the consultation period all criteria in the IB report were clearly demonstrated by our school. The criteria in the IB report regarding curriculum are shown in Figure 5.

Standard A focuses on education philosophy. The consultant's analysis of our school indicated that our mission, vision, and school philosophy are aligned with the IB. The consultant report also found that collaboration among our teachers is highly valued (IB Report, September 4, 2018). Additionally, PYP elements are present in the classrooms: "Transdisciplinary learning was observed in multiple settings, for example Thai language teachers connected with a unit of inquiry by utilizing the IT lab to encourage the students to research in Thai" (IB Report, September 4, 2018). The report found that the leadership team and teachers are committed to using the PYP framework for all planning, teaching, and learning.

Section B focuses on leadership and structure. The IB findings indicated that the pedagogical leadership team shares the responsibility of IB implementation and that professional learning communities are present at Wells Bang Na. The PLCs focus on collaborative planning and reflection are in place. The faculty said the meetings have improved regarding efficiency; however, some teachers said they would like even clearer protocols for meetings.

Section A: Philosophy

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

A1: The school's published statements of mission and philosophy are aligned with those of the IB to include reference that the school values education that goes beyond academic development and include reference to encouraging awareness beyond the individual and his or her immediate community.

IB Analysis: Clearly Demonstrated

The Wells Missions and vision statements include reference to student empowerment to achieve indivdual potential, dievrsity, creativity, fostering a sense of wonder and a passion for learning. Global citizenship and parent partneship are also highlighted.

Standard A.3a: The values of PYP as indicated in the curriculum documents have an explicit impact on the decision making and functioning of the school.

IB Analysis: Clearly Demostrated

Pedagogical leadership team makes decisions with the Primary Years Programme in mind, for example: professional development, faculty hiring practice, teacher observations, and forward planning are all aspects thatdemonstrate considertation of the values of PYP. The school owner clearly expresses that the values of PYP and student learning is at the heart of strategic decisions and the direction of the school.

Figure 5. IB consultant report finding in relation to research questions.

Section C focuses on written curriculum. The IB report confirmed that all teachers are involved in curriculum development and writing the program of inquiry and policies. The report recognized that student action is displayed around the school. It said, "Evidence of student action, initiated through the units of inquiry, was documented during observations of wall displays and conversations with the principal" (IB Report, September 4, 2018).

In conclusion, the findings from our IB consultant report provided data indicating that the PYP elements are displayed in written curriculum, our school philosophy, leadership structure, and student learning. We are a collaborative team that works together to build our transdisciplinary program. The leadership team keeps students learning in mind when planning and executing initiatives in our school. The IB Report recognized student action around the school. Figure 5 verifies the results of the report. In the next subsection, I will discuss teacher empowerment and action.

Teacher Empowerment and Action

During PAR Cycle Two, the evidence from a teacher survey, teacher initiatives, and discussions with teachers suggest that teachers and students at Wells Bang Na felt empowered to take initiative and improve their students' experiences in and out of the classroom. Teachers at Wells Bang Na worked together to create our own unique program of inquiry to contextualize the IB framework and have been co-creating curriculum since I began working at Wells Bang Na in May 2016. The teachers have also been involved in writing policy that is required by the IB organization. Most of our teachers feel as though they have a voice in our school due to their involvement in whole school initiatives. In addition, teacher involvement has led to self-initiated projects. Examples of teacher-initiated actions include Ms. Carla's Project F.E.A.T (focused extra art-making time) and Mr. Tata's lunchtime music club.

Curriculum development. Teachers collaboratively created our program of inquiry in 2017-2018. In 2018-2019, we used the same units of inquiry at each grade level, and we reflected on and revised the units. The teachers met every other week to reflect on teacher facilitation and student learning. For PAR Cycle Two, the unit planners were redesigned by Mr. Brad. The new unit plans included section on each part of the cycle of inquiry and places to reflect on connecting the key concepts, learner profile, lines of inquiry, and central idea. The grade-level collaboration meetings primarily focused on making sure that the subject areas are connected and that students are learning through inquiry in a transdisciplinary fashion. According to the IB report, our collaboration is gaining efficacy and effectiveness.

Policy writing. Every teacher in our school, including the specialist and language subject teachers, joined a focus group based on their interests and expertise to develop school wide policy (for IB purposes). The three policies that we needed to develop were special educational needs, language, and assessment. The three groups met for an hour each week; the structure of the meetings was determined by each group, and each group established a school-wide policy. Teachers were asked in a survey (January 8, 2018), "What are your feelings about contributing to the development of our school and being part of school-wide initiatives: creating the program of inquiry, curriculum development, and policy writing?" The results of this survey along with observations of teacher initiatives indicate that teachers felt the process was collaborative and cooperative, and that it made them feel connected, and allowed for growth.

Most respondents said they liked contributing to school initiatives. The responses indicated that teachers were grateful for the opportunity n=3), felt the cooperation and collaboration among teachers was beneficial (n=3), noted that they had grown as teachers by participating (n=8) and were connected to the work and colleagues (n=3). One teacher

commented on the opportunity to learn and grow, stating "I feel grateful to be part of it and feel like I can learn a lot from the process professionally and personally". Another teacher noted the importance of being part of the community when he or she said, "I enjoy being part of these opportunities because they make me feel connected and knowledgeable about how our school operates". One respondent specifically referenced the importance of teachers' contributing to the school community, asserting "Teachers are not only committed to providing their students with the highest possible quality education but also play an important role in improving the school in every aspect. This is a great opportunity for teachers to make the community better." Finally, one response highlights the importance of teacher engagement in relation to the culture of the school, stating "I think it makes a great atmosphere where everyone takes ownership of how the school is evolving and we can be proud of what we are doing here" (teacher survey, January 8, 2018). Two respondents were not sure if they liked being part of the process of contributing to school initiatives. The question was open ended, and the codes are not mutually exclusive.

Except for one comment, the feedback about collaborative policy writing was positive. The one ambivalent response was, "I enjoy being part of these opportunities because they make me feel connected and knowledgeable about how the school operates. I do believe that the school often relies on the teachers making the school better when the school should be a place that cultivates and makes the teachers better" (teacher survey, January 8, 2018). This response indicates a belief that even though the teacher felt that she had contributed positively to the school, she also felt that the school asks her to do too much in terms of curriculum and policy development.

Teacher-initiated projects. In PAR Cycle Two, two prominent examples of teacher-initiated projects enhanced our students' experience at school. Mr. Tata (our music teacher) started a lunch time music club, and Ms. Carla started a lunch time art club. The students gave

positive feedback via interviews about the lunch time activities. One student said, "Art at lunch is my favorite thing at school!" (Lennon, grade 2).

Mr. Tata's music club. Mr. Tata started working at Wells international school in academic year 2017-2018. He noticed many of his students were talented in music, and he wanted to give them the option to get even more involved in music. He said, "My first intention of creating this music club was to bring together those who genuinely enjoy music and provide events and activities for students and the school to express themselves. I really hope that my music club can promote student participation and enjoyment of their musical abilities and talents. And provide an outlet for all students interested in music" (teacher interview, April 18, 2018). Mr. Tata reported that he received positive feedback from students and parents. The students even asked Mr. Tata if they could come and play music with him afterschool. Mr. Tata stated that he would like to improve the program in the future by allowing younger students to get involved as well (as of 2018-2019, the program was limited to grade two and three).

Ms. Carla's F.E.A.T. project. Ms. Carla noticed that students were interested in Mr. Tata's music club, and she thought a lunch time art club would be ideal for students who were not able to focus in art class or finish their work on time. Ms. Carla realized that, in class, projects were not completed due to distractions, behavioral problems, absences, nervousness, perfectionism, etc. She said that there was a positive reaction from the students and that they enjoyed the extra art time. She stated that she would like to improve her program in the future, but she felt that the F.E.A.T project was time consuming and she was unsure if she would continue the project. Regarding her instructional growth, Ms. Carla said, "I try to include IB learner profile and key concepts as much as I can. I also try to verbally lecture less. By doing it this way, there will be more time to do practical art" (teacher interview, April 18, 2018).

This example shows that Ms. Carla has adopted a student-centered approach to education and has also adopted a transdisciplinary approach incorporating PYP elements in her lessons.

Teacher empowerment was evident in several ways in PAR Cycle Two. Curriculum development and policy writing were actions prompted by the leadership team; however, the practices were effective in empowering teachers. The teachers gave positive feedback about collaboration meetings and focus groups. Teacher responses indicated that they felt useful contributing to school development. Mr. Tata's music club and Ms. Carla's art club demonstrated that teachers were empowered to act on improving education for our students.

Student Action and Empowerment

During PAR Cycle Two, two student-initiated actions took place. The grade three poster project was teacher prompted and student-led. The students made posters representing the student profile. A second student-initiated project in PAR Cycle Two was the grade two mural project. This project was student-initiated, student-led, and supported by teachers. These two projects are examples of student empowerment.

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Grade three poster project. During PAR Cycle One, I began working with grade three in order to teach them about the learner profile language and philosophy. In PAR Two, we reviewed the definitions of the terms; then, we clearly stated what each learner profile meant and what they looked like in action at our school as a group. Next, the grade three students

individually defined the attributes in their own words. The grade three students and I decided that we would like to display the learner profile characteristics. The students brainstormed ideas and decided that they would like to make posters displaying the learner profile characteristics to hang around the school. The grade three students chose which word they wanted to focus on. Then, they decided how to dramatize their learner profile attribute. They thought of which areas in the school they could use to act out the setting for their poster, chose the friends they needed to represent their ideas, and took photographs. Ms. Erma used the children's definitions and images to create posters for the learner profile attributes. The posters powerfully represented the learner profile with the students and our school and their photographs.

Grade two mural project. Grade two studies a unit in the transdisciplinary theme, "How We Express Ourselves." The central idea of this unit is responsible citizens work together to create a better community. One student initiated a project to create a mural to make our school more colorful. The mural (see Figure 6) that he designed is a rainbow with the learner profile attributes on each color pouring into Wells International School Bang Na. The student had remedial drawing skills, and when he approached me with his idea, the drawing he presented was done poorly. I asked him to collaborate with his friends to make a visual display of his idea that was well presented. He asked his classmates to help him, and together, they made a display that matched the students' imaginative design. The mural shows elements of the IB PYP including action, and the learner profile was becoming more evident in student work. The elements of the PYP were beginning to appear in our students' work. The transdisciplinary approach and weekly collaboration contributed to our students engaging in a connected curriculum and program of inquiry.

Figure 6. The second-grade mural designed and created by our students.

Parent Empowerment and Action

At Wells Bang Na, our philosophy is that parents are our partners in educating students. We had a second parent workshop about IB PYP in PAR Cycle Two. The parents learned about our school program through an inquiry-based approach and produced work showing their ideas about Wells education (constructivist) and traditional education. Later in Cycle Two, the parents led an initiative to improve our food quality using the cycle of inquiry and collaborative action. The parent partnership has raised our quality of food.

Parent workshop and posters. Parent education is an important aspect in feeling connected to our school and recognizing their agency (parent voice). We asked the parents about their background knowledge of the PYP prior to the second workshop. In our second workshop, the teacher group and I introduced parents to the cycle of inquiry that we use. They examined descriptions of traditional and constructivist education indicators and sorted the information. After this activity, the parents created posters highlighting Wells education verses traditional education.

The data indicated that parents were engaged during the activity that asked them to sort the descriptors according to either the constructivist approach or a more traditional approach. Three groups of parents had different descriptors, and then presented to the full group. In Group 1, the parents expressed their sense that Wells educational model is more interactive, less strict, allows for motivated learners, does not focus on homework, and is fun. They said traditional education is teacher centered and focuses on grades and homework. The second group indicated that a Wells education is more interactive at each grade level and throughout the school. They said our curriculum is transdisciplinary, engaging, and individualized. They also said that traditional education is teacher centered, boring, and subject based with little interaction. The

third group said that Wells' education is student centered, transdisciplinary, creative, and boosts self-esteem in students. They believe that traditional education is teacher centered, based on textbooks and graded, boring, and may cause stress in students. Table 5 lists the data collected at the parent workshop about IB PYP.

In a parent interview with our IB consultant, one parent said that they had little understanding of the IB PYP until we held two parent workshops (parent poster, October 5, 2017 and January 6, 2018). The posters that the parents created indicate that they had a better understanding of our education at Wells Bang Na. The parent posters (see Figure 7) demonstrate the transdisciplinary theme, who we are, and our parents' inquiry into this theme. They utilized the cycle of inquiry by tuning in, sorting, and finding out more. They took further action later in PAR Cycle Two which will subsequently be presented.

Parents use the cycle of inquiry. After the second parent workshop that we hosted, our parents demonstrated their increased knowledge of the cycle of inquiry and acting (empowerment). The parent food inquiry is a good example of how the parents organized themselves and utilized the cycle of inquiry. The parents were concerned about the food quality in our school. The parents tuned into the problem by observing the food every time they came to school for a special event or for PTO (parent teacher organization) meetings. One parent performed inquiry at the school by collecting photographs and observing. The parents then researched catering companies and presented options to our school chairman. The parent group reached a conclusion that our school food was not up to the quality that they expected for their children. As a result of this cycle of inquiry, the school increased the quality of food at our school. This a prime example of the cycle of inquiry and how action can change aspects of a

Table 5

Summary of Data from Parent Workshop in PAR Cycle Two

Constructivist Education (Bang Na-Wells)	Traditional Education

Group 1

- More interaction
- No fear of exams
- Self-motivated learners
- Little homework
- Play and learn

- Only listen to teachers
- Examinations/Grades
- Teacher centered
- Homework
- Memorization
- Punishment

Group 2

- Transdisciplinary
- Interaction between grade levels
- Individualized instruction
- Thinking skills
- Fun

- Subject based
- Little or no interaction
- Teacher centered
- Graded
- Boring

Group 3

- Subject integration
- Self-study
- Creative
- Child centered
- Boosts self-esteem

- Text books
- Stress, boredom, pressure
- Not creative
- Teacher centered
- Obedient
- Grades

Figure 7. Parent workshops used the cycle of inquiry by tuning in, sorting, and finding out

more.

school. Moreover, this is a powerful example of how of parents can work together and act, resulting in a major improvement in our school food. Figure 7 is a bulletin board created from parent workshops that resulted from educating them about inquiry-based learning.

Principal Leadership: Focus on Distributed Leadership

In the academic year 2017-2018, we set up a leadership team at Wells International School Bang Na. This team included Ms. Oh (Thai director), Ms. Viki (early years director), and Mr. Brad. Initially, we did not have clearly defined roles and responsibilities. In PAR Cycle Two, we created job descriptions and shared them with our teachers and staff. This helped teachers understand who does what in our office; however, teacher surveys indicated that there was still ambiguity about accountability at school. As a school leader, I realized that all stakeholders (leadership, teachers, parents, students) have an interest in the progress and improvement of our school. A constructivist and distributed leadership model is ideal and that is what we were striving to achieve at Wells Bang Na.

Currently, our leadership structure functions as a combination of distributed leadership and the constructivist leadership model. The leadership is still fragmented, but we are working towards being more skillful in hopes of possessing a high leadership capacity. In PAR Cycle Two, the leadership team taking initiative was evident. Mr. Brad and Ms. Viki facilitated the learning about the inquiry cycle with teachers and parents, which transferred in several ways discussed previously. Mr. Brad coordinated with our consultant and facilitated the consultation visit at our school. He revised our unit planner document to be more detailed and user-friendly for teachers. In addition to this, he created teacher reflection sheets for them to comment on the teaching and learning as the unit's progress (instead of waiting until the end of each unit). Finally, he completely took over the coordination of the primary collaboration meetings. Ms.

Viki demonstrated more confidence in her leadership by facilitating weekly collaboration meetings in the early years and assisted teachers in instructional leadership. She visited the teacher's classrooms frequently as an instructional leader focused on inquiry-based learning. Ms. Oh continued to head the Thai department and acted as liaison with the Thai educational organizations. She also led the lead the teacher's assistants (TA). In a TA meeting, Ms. Oh read an inspirational teacher doctrine to the TAs for the first time since I have worked at Wells Bang Na. She provided professional learning opportunities for the TAs to understand IB PYP education. Figure 8 provides a visual representation of the distributed leadership approach at our school and the resulting actions (Spillane et al., 2001; Spillane & Diamond, 2007).

Growth as a Leader

In the third research question about my intentionality as a leader, I wanted to know if I, as the school principal, could successfully lead with a distributed leadership approach and generate professional learning that connects teachers and teaching to the IB-PYP approaches to learning? The most important aspect of my leadership role was supporting teachers and inspiring them to be the innovators at our school. The main objective of our leadership team was to implement the IB PYP in our school during 2018-2019, which is the IB authorization year. To fully prepare for authorization, our leadership team started meeting every other week during PAR Cycle Two to collaborate and build our program together. As previously mentioned, the leadership team recognized that teachers needed a more complete understanding of inquiry-based learning. To address this need, we facilitated a workshop on teaching inquiry-based units. The leadership team facilitated the professional development and focused on how to use the cycle of inquiry in stand-alone lessons and units. Teachers considered what the cycle of inquiry would look like at
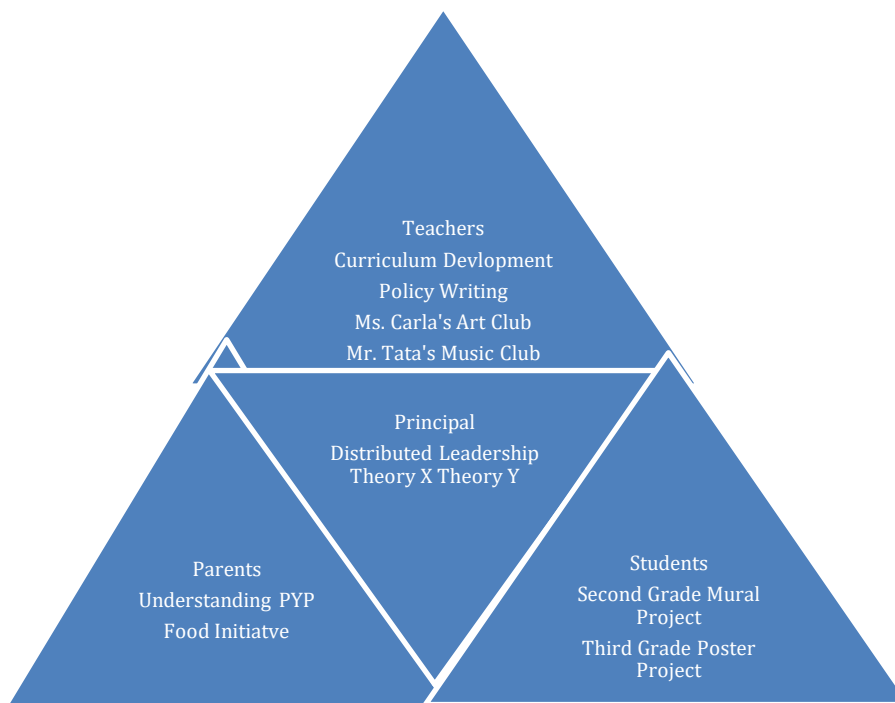
Figure 8. Distributed leadership and actions by the principal are at the center of the teacher, student and parent action.

various developmental levels. The teachers then taught our parents the cycle of inquiry, which resulted in parent action.

Another major goal in my leadership has been building community. I aimed to instill a sense of reciprocal trust leading to self-initiated actions by the teachers, parents, and students. I was in the process of learning to balance the formation of trusting relationships with teachers so that they would in turn have those relationships with each other while retaining authority. On one hand, I wanted to liberate leadership capacity and utilize a distributed leadership model, on the other hand, I wanted to be authoritative, but not authoritarian. Teachers, like students, are only as motivated and driven as you believe them to be. In other words, if I believed and acted upon the belief that utilizing their talents was essential in building the school's programs, I thought that most teachers would act accordingly and take on leadership roles in their areas of expertise. However, there is a fine line between distributed leadership and teachers and parents getting too comfortable so that they make changes without asking. An example of parents and teachers making changes in PAR Cycle Two was changing assigned house teams for her students in the nursery/PreK. The parents had already been informed about which team their children were assigned to, and the decision made us look unorganized as a school. At another point, teachers changed the time tables, or schedule, without consulting leadership. Again, the line between teachers taking charge and starting initiatives and making changes without speaking with administration needed to be better established. Mutual trust and respect needed to be cultivated among stakeholders at our school; however, as a leader, I had held the big picture view that sometimes teachers do not fully see. In PAR Cycle Two, I surveyed teachers to gauge how they felt about our school. We had moved forward on teacher leadership, but we still needed to act in unison.

Teacher Surveys

In a teacher survey distributed on January 10, 2018, I asked teachers "What are the strengths of leadership at Bang Na campus?". The fourteen respondents wrote open-ended responses to this question. Common themes in their answers were open-minded, empowerment, and flexibility. Other recorded attributes were hardworking, supportive, and having a growth mindset. Four respondents thought that leadership was open-minded, and three teachers said that leadership enabled them to feel empowered and that leadership is flexible.

Although the first survey provided important insight, I wanted to know more about teachers' perceptions regarding administration empowering them as leaders. To capture that information, I surveyed teachers again, asking specific questions about trust, professionalism, empowerment, strengths of the principal and school, and growth areas of my leadership. The objective of the second survey was to determine if teachers felt respected and trusted at school to gauge relational trust. Fifteen teachers responded to the second survey; see Table 6.

The results of the second survey were more focused and informative to my practice as a leader. In grappling with the tension and balance required in a distributed leadership model, I had to pay attention to differentiating support for teachers and meeting their expectations. Due to the responses to this survey, in PAR Cycle Three, I focused on being more approachable, visiting classrooms more often, and always being present regardless of the endless tasks at our school. In the final section of this chapter, I look at the PAR through the lens of organizational theory focusing on constructivist and distributed leadership as well as Theory X and Theory Y.

Table 6

Questions and Results of the Teacher Survey

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. My administrator treats me as a professional.	40%	33%	20%	7%	
2. I believe my administrator feels I am an effective teacher.	26.7%	53.3%	20%		
3. My administrator demonstrates a solid understanding of effective teaching practices.	26.7%	33.3%	40%		
4. My administrator visits my classroom often enough.		46.7%	40%	6.65%	6.65%
5. I feel comfortable going to my administrator with my concerns.		26.7%	53.3%	13.3%	6.65%
6. My administrator seeks my input when making decisions that impact the work I do.	20%	33.3%	40%	6.65%	
7. My administrator supports my decisions about student behavior.	28.6%	33.3%	21.4%	7.1%	
8. I feel empowered to make decisions about my teaching.	13.3%	53.3%	33.3%		

Analysis of the Evidence, Vis- à-vis Organizational Theory:

Distributed Leadership and Theory X, and Theory Y

In this section, I link practice at Wells Bang Na to the distributed leadership model (Lambert, Zimmerman & Gardner, 2016; Militello et al., 2009; Spillane et al., 2001; Spillane & Diamond, 2007; Spillane, 2012). I discuss how this approach works at our school and the limitations involved. Finally, I examine Theory X and Theory Y and discuss the importance of relational trust and belief in how leaders motivate and work collaboratively with teachers (Mcgregor, 1960).

Distributed Leadership

"The collaborative, inquiry-action cycle is grounded in the belief that successful leaders for instructional improvement cannot operate in isolation. Seen as distributed rather than hierarchical, leadership is constructed of relationships, rather than roles" (Militello et al., 2009, p. 29). Since I became the principal at Wells Bang Na International School in May of 2016, I have done my best to implement a leadership model based on Lambert et al.'s (2016) constructivist leadership approach and follows the work of Spillane in helping me understand how leadership is a function in a school that is cognitively distributed (Spillane et al., 2001; Spillane & Diamond, 2007; Spillane, 2012). As such, my responsibility is to recognize that supporting shared vision, in which all stakeholders having a voice, reflective dialogue, inquiry, fluid roles, shared responsibility, and innovation in practice and policy, produces results that are shared (Lambert et al., 2016, p. 14). In fact, constructivist leadership is a parallel process for supporting constructivist pedagogy in the classroom.

Constructivist leadership is based on four elements: purpose, reciprocity, learning, and community. These elements lead to evoking beliefs, inquiring into practice, co-constructing

meaning, and acting collectively in community (Lambert et al., 2016). The process of becoming an IB PYP school has provided a common goal to work towards as a learning community, and many projects that we have undertaken together utilize these elements. Our collective purpose at the meso level of the school as an institution to successfully implement the PYP program and become an authorized IB school is a hallmark of our collective work. The reciprocity element of constructive leadership can be seen in the way the Wells Bang Na community recognizes expertise and talent and creates opportunities for teachers to share best practices in formal and informal learning exchanges. These opportunities occur during in-house professional development, collaboration meetings, after school mini-trainings, parent workshops, peer observations, and more. We learned together, and even more than that, we co-constructed scopes and sequence documents, our program of inquiry, unit plans, standards, and policies.

The documents we have co-constructed allow for a shared vision and common learning goals for our students. The collective vision of our school has led to building a stronger community. Lambert (2005) stated "Acting collectively in community comes as a result of learning and deciding together what will be planned, created or done differently" (p. 96). Examples of action in planning at our school are changes in assessment (after we wrote our assessment policy), and changes in our inclusion program (SEN). We co-created the new policies as a community, and we have implemented them collaboratively as well.

The emphasis on ensuring collaboration via distributed and constructivist leadership is confirmed by teacher responses to surveys and teachers taking up the work as teacher leaders. Teacher motivation to do so is verified in the organizational theory literature of Theory X and Theory Y.

Teacher Motivation: Theory X and Theory Y

Maslow's (1943) theory of hierarchy of needs contends that people are motivated first by necessities such as physical needs, safety, and social belonging at a rudimentary level. Self-actualization is the top tier of the hierarchy of needs. The argument states that once one's basic needs are fulfilled, self-actualization or achieving one's highest potential becomes a goal. McGregor (1960) extended the theory with his Theory X and Theory Y. Theory X assumes that managers believe employees do not like to work and exert minimal effort. Theory Y assumes that managers have confidence in their team and believe that they are creative and hard-working change-makers. The manager's ideas about what staff members are capable of can enable ambition or passivity. The XY theory is important to a distributed leadership model in that there is a leadership team, and the manager needs to promote teacher talent and encourage teachers to take roles in flexible leadership positions. We have created an environment where teachers are able to take risks, take on multiple leadership roles, and gain a sense of efficacy or self-actualization.

Bolman and Deal (2017) discussed how employees react when supervisors treat them as if they do not have mental capacity or drive in their positions. They argued that employees quit their jobs or become emotionally resigned under these circumstances; they restrict output, climb the hierarchy to get to better jobs, and form labor unions, and in the process teach their children that work is not rewarding, crushing intrinsic motivation in the next generation (Bolman & Deal, 2017). The Theory X management approach does not empower employees or even recognize them as valuable members of a workforce. In contrast, the Theory Y approach views management's main objective as creating a workplace that is conducive to empowering staff to take initiative.

Our teachers have contributed to curriculum development since I became principal, including creating units of inquiry at each grade level during built-in collaboration times. We articulated and aligned our units horizontally and vertically as a whole school to ensure that learning objectives, skills, and content were being met. Additionally, teachers chose interest-based focus groups. In a survey, teachers indicated that they benefit professionally from contributing to curriculum development, aligning standards, and policy writing. The feedback on all these processes indicates that the teachers want to contribute to these growth areas of the school. The survey asked the teachers, "What are your feelings about contributing to the development of our school and being part of school-wide initiatives, such as creating the program of inquiry, curriculum development and policy writing?" Our dance teacher, Ms. Jasie said, "I'm happy and proud to be part of Wells Bang Na campus, working collaboratively in a team in order to achieve a goal" (teacher survey, January 10, 2018). Our music teacher, Mr. Tata said, "Teachers are not only committed to providing their students with the highest possible quality education but also play an important role in improving the school in every aspect. This is a great opportunity for teachers to make a community better" (teacher survey, January 10, 2018). Mr. Andres (PE teacher) said, "I strongly believe in the program and how our students can make meaning of what they are learning and put it to use in their everyday life. I feel that our students understand what and why they are learning at school".

The survey responses confirm that our teachers believed contributing to the community is important for ownership and sharing their voice. They were learning from the collaboration process, enjoyed working towards a common goal, and believed developing our own curriculum was important for professional development. In short, the teachers were grateful to be part of the process. The Theory Y management approach was creating positive results at our school. An

example of how our teachers felt empowered to start grassroots school initiatives is the lunch music program that Mr. Tata, our music teacher, created in response to student input. In the lunch program, Mr. Tata teaches the students every Friday at lunch time. Because this program was so successful, our art teacher, Ms. Carla, also started a program where the children can finish artwork at lunchtime or even attend a special lunch time art session.

Conclusion

In conclusion, as a leader, I know it is my responsibility to draw on the strengths of teachers and cultivate growth. I know that providing the teaching tools and support that teachers need for students to learn effectively supports them. Many examples of teacher-initiated leadership emerged in PAR Cycle Two. According to theory Y, and, as evidenced by the data collected in PAR Cycle Two, if teachers believe that they are respected and trusted, they are more likely to be high-functioning employees. Distributed leadership and Theory Y impacted my work in PAR Cycle Two. In PAR Cycle Three, I continued to support teachers and to look for transfer of the protocols, engagements, and learning that we cultivated as a community. In the next chapter, the emergent themes from PAR Cycle One and the findings from PAR Cycle Two come to fruition in PAR Cycle Three.

CHAPTER 7: PAR CYCLE THREE: GROWING TOGETHER

While we made significant forward progress in PAR Cycle Two in sharing collective responsibility for student success by improving curriculum, instruction, and the social climate at the school, maintaining momentum in a new school year is always a concern for school leadership, especially in a situation in which we expect teacher turnover. Thus, at the beginning of PAR Cycle Three in Fall 2018, I wanted to ensure that new teachers (n=6) and returning teachers (n=18) felt that they had the knowledge and skills necessary to start the school year. On the first day of in-house professional development (planning for the year), we asked teachers what tools or learning support they needed before the start of the year. The identified needs from the meeting were: PYP training (and review), particularly writing PYP documentation and the cycle of inquiry; creating and implementing a school-wide classroom management system; building a website; establishing essential agreements and learning community protocols; and learning more about inquiry-based math. In this chapter, I first discuss the key activities in this cycle about professional learning; then, I examine examples of transfer in these areas: mindfulness, teacher-facilitated initiatives, use of PYP elements in unit planning, concept-based learning, and reflection as a routine for teachers and students.

Professional Learning Opportunities

Being responsive to these needs, teacher leaders facilitated professional development sessions in their areas of expertise. Ms. Viki (Grade 2, EY coordinator) and Mr. Brad (PYP coordinator) planned and facilitated a PYP workshop. Ms. Abra (Kindergarten 3) and Mr. Steve (Grade 4) facilitated the professional development for building the website. Ms. Viki (Grade 2, EY coordinator), Mr. Andres (Physical Education Teacher), and Ms. Ellie (Kindergarten 2) facilitated the session on creating a school-wide classroom management system. Finally, I

facilitated the session on establishing essential agreements, teacher expectations, and collaboration protocols.

The sessions were effective in continuing to build and sustain relational trust, as well as establishing some norms of behavior before the students came to school. The PYP crash course and review of inquiry cycle served as a reminder for returning teachers about the learning process, and the new teachers were able to get a preview of our pedagogical practice before attending the "Making PYP Happen in the Classroom" course at New International School of Thailand (NIST). We reviewed our schools' essential agreements and amended the list, establishing these guidelines:

- Own your own role: Know what is expected of you and fulfill/exceed those expectations

- Be prepared: Anticipate and participate

- Respect everyone's ideas and opinions and contribute to an environment where everyone feels comfortable and safe

- Be supportive of all community members

- Follow up and follow through with the right person or people

- Welcome differences of opinions: Do not take disagreements personally

- When decisions are made, back them up wholeheartedly

- Keep our students at the center of everything we do

- Celebrate success

- Practice direct and open-minded communication

- Constantly improve your practice

Each IB classroom establishes an essential agreement in their class and our staff did as well. We revisit the essential agreements quarterly and adjust the agreement considering teacher agency (voice) once per semester as needed. An essential agreement includes a set of normative behaviors agreed upon by teachers and staff. This agreement is necessary for cohesion and if conflict arises, especially since much of our work is community-based and collaborative. The calendar (see Table 7) shows first our recognition of the ongoing need for teacher learning as we planned for collaboration, professional development, and concept-based work in PAR Cycle Three. As we engaged in these activities. I was looking for examples of how our work transferred to classrooms, which is in the next section.

Transfer in PAR Cycle Three

As hunter, emerald and Martin (2013) clarify that the PAR process can become reciprocal and shared: "With its open, dialogic and interactive approach that emphasizes reciprocity, trust and collective action, PAR breaks down the traditional barrier between the researcher and the researched. Through its direct contact and engagement with all participants in knowledge production, PAR seeks to build collaboration and enduring relationships with potential participants" (Martin, 2013, p. 7). Therefore, in PAR Cycle Three, I examined the ways teachers engaged in collaborative leadership and what aspects of this leadership transferred to other members of the community. In other words, I sought examples of how our modeling of leadership extended to individual teachers taking on the work. Table 8 demonstrates how five areas of emphasis transferred to each grade level.

I found that in PAR Cycle Three, teachers and coordinators engaged in initiating change, becoming a strong example of distributed leadership (Spillane, 2012). The teachers and coordinators modeled shared leadership with students. Finally, the data revealed that transfer

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Table 7

Calendar of Professional Development Opportunities and Collaboration Meetings 2018-2019

Dates	Professional Development Opportunity
August 7-8	Whole School PD- Inquiry Cycle, Behavior Management, Essential Agreement, Collaboration Protocol
August 20-24	Planning: All levels inquiry cycle, please be prepared to fit your lessons/activities into the cycle of inquiry during this meeting.
August 27-31	Updates/questions/reflection: Early Years (everyone please have something to share about what was taught, a question, a success, etc.)
September 3-7	Sharing/reflecting on unit planner: Primary (section 4 needs to be finished if not using cycle of inquiry) (everyone please have something to share about what was taught, student success/action, notes from organizer)
September 10-14	Sharing/reflecting on unit planner: Early Years (everyone please have something to share about what was taught, student success/action, notes from organizer)
September 17-21	Planning Unit 2: Primary - all teachers review last year's unit 2 planner
September 21-23	Training for new teachers, "Making PYP Happen in the Classroom" at New International School (NIST) IB training
September 24-28	Early Years: Review the parts of the planner and complete Unit 1 reflection Make up meetings: Grade 2 and Grade 3
October 1-5	Primary Years: Complete Unit 2 planning boxes and Unit 1 reflection boxes
October 8-12	EY: Homeroom teachers and coordinator will meet to review the planning for Unit 2/3
October 12-13	IB training for all teachers in-house "Concept-Based Learning"
October 31-November 28	Focus groups embed conceptual understanding in our Programme of Inquiry (POI)

Table 8

Evidence of Transfer in PAR Cycle Three

Grades	Mindfulness	Teacher Initiative	PYP Elements In Units	Concept Based Learning	Reflection
K-1	X	X	X	X	X
K-2	X	X	X	X	X
K-3		X	X	X	X
1	X	X	X	X	X
2	X	X	X	X	X
3			X	X	X
4		X	X	X	X

occurred in these key areas of curriculum and culture: mindfulness, teacher initiatives, PYP elements, concept-based learning and reflection have been incorporated in our program at school. As a result, it became evident that teachers are part of the process in changing our school, and what began as a third-grade team in PAR Cycle One has, by the conclusion of PAR Cycle Three become embedded in the academic and social culture of all grade levels at our school.

Mindfulness

Since I became principal at Bang Na, I have started each meeting with breathing, yoga, or a gratitude activity in hopes of creating a culture of mindfulness. The modeling of mindfulness occurred in each grade level except 3 and 4 using these methods: deep breathing body control), gratitude circles, yoga and breathing). According to Mindful Schools, "When teachers learn mindfulness, they not only reap personal benefits such as reduced stress and burnout, but their schools do as well. In randomized controlled trials, teachers who learned mindfulness reported greater efficacy in doing their jobs and had more emotionally supportive classrooms and better classroom organization based on independent observations" ("Evidence of the Benefits of Mindfulness" section, para. 3).

A rapidly changing school requires flexibility in our teachers; practicing mindfulness is a useful tool in ensuring that we keep focused and act thoughtfully. Mindfulness is beneficial for our students as well. Our students are from varying backgrounds and are culturally diverse; in this context, mindfulness lends to class cohesion and self-regulation. Jennings (2013) demonstrated that mindfulness increases cognitive abilities in children as well.

Using mindfulness protocols to open our collaboration meetings and professional learning sessions has been an effective strategy for encouraging participants to be fully present in our meetings. When select teachers used similar protocols in collaboration meetings in PAR

Cycle Three, I realized that modeling these techniques had been effective. As Spillane (2012) indicated, modelling by school leaders is an important way to initiate change in school culture and practice. Despite initial resistance from some grade level teachers, mindfulness practices transferred to grade level activities and meetings. Of five grade level collaboration meetings that I attended during PAR Cycle Three, three began with a mindfulness activity; in addition, in the meetings that opened with mindfulness, I observed the participants were more alert, engaged, and interactive.

In the K1 classroom, the teacher practices mindfulness with her students, using breathing and body control. She said that this has had a positive impact on the children's behavior and their ability to focus. When asked if mindfulness is effective in her classroom, she replied, "I believe mindfulness is useful in schools as it provides students an opportunity to calm down and connect with their inner self. It also teaches students self-regulating skills that helps to release tension, manage emotions and reactions, and promote self-love in a healthy way" (interview, November 2018). Ms. Jasie, our dance teacher, uses mindfulness with the K1, K2, and K3 classes. She said, "For me, having this technique helps students improve both mental and physical health. If I see students tired of moving/dancing I will give them time to pause and breath for them to be calm and relax" (interview, November 2018).

In the K2 classroom, the teacher uses mindfulness techniques for creating a positive atmosphere where students self-regulate their behavior. The students are taught to calm down by taking "deep ocean breaths" and are encouraged to take some time in the "chill out corner" when needed. I have observed the K2 students on several occasions telling their teacher that they want to take some breaths to calm down. In addition to breathing, the K2 teacher teaches yoga and body movements when students need redirection.

The grade two teacher/early years coordinator starts every staff meeting that she facilitates with a mindfulness protocol. This allows for a warm and open atmosphere in the meetings. In one meeting, she began with a protocol, Something Sweet or Something Funny. The teachers shared a funny or sweet thing that a student had said or did in class. This engagement made everyone laugh and the atmosphere for the rest of the meeting was productive and positive.

In the grade two class, the teacher has introduced a gratitude circle protocol every afternoon before students go home. Grade two is a small class of eight students, and last year they struggled to get along with each other. This year, they have been good examples to other students, helpful around the school, and kind to each other. The modeling of gratitude and being appreciative has helped these children get along in class much better than they did the previous year.

According to Bose et al. (2017), "The latest research in brain development and learning points to an integration of the cognitive, emotional, and kinesthetic for optimal information processing, which in turn enables emotional regulation" (p. 4). The mindfulness exercises in the meetings I observed ignited social emotional connections and the participants were focused. From my observations, the students in the K2 class that takes "deep ocean breaths" are developing academic and social skills as they learn skills to cope with stress and learn to get along with one another. The students learn to be self-directed learners who can regulate their emotions through mindfulness. My observations suggest that students in grade levels using mindfulness practices are well-behaved, active in class, and get along better with each other.

There are some grade levels in which the teachers have not used any mindfulness in class or at grade level meetings. From my observations, the teachers are less engaged in meetings, and the collaboration time is less effective. A comparison of the two meeting styles indicates that

mindfulness works to make meetings more effective. As an example, at a K2 that met in the computer lab, Mr. Brad did not organize a mindfulness activity for starting the meeting. One teacher began the meeting by complaining about the space (some teachers do not prefer meeting in the computer lab) and the low turnout of teachers at the meeting. In response, Mr. Brad quickly changed the meeting format and started with a talking piece protocol about something funny your student said to you recently. The atmosphere of the meeting changed instantly; participants began laughing and relaxed. Based on these findings, I argue that the teachers who practice mindfulness in the classroom and in meetings need to continue to model this for those who do not practice mindfulness to continue to change our culture. The next section examines teacher-facilitated initiatives at Wells Bang Na.

Teacher-Facilitated Initiatives

In PAR Cycle Three, examples of teacher actions are numerous: influence on purchasing, implementation and subsequent mediation of the Seesaw program, the garden project, changes in meeting structure and protocols and leading a group exercise program. While we do not have complete evidence on the use or success, Figure 9 presents an overview of the programs that teachers initiated that contributed to the teacher and student growth.

Seesaw program. Seesaw is an interactive platform where teachers can post their students' work and parents can see what their children have done in class and comment on their work. In 2017-2018, teachers wanted to purchase and use the Seesaw digital profile system; many teachers were using the free version, but it had limited functions. The more complete platform was communication platform on which teachers can create digital portfolios for each student that can be compiled and kept from year to year. In addition to being useful for parent,

Figure 9. Teacher-initiated actions and projects evident in PAR Cycle Three.

teacher and student communication; seesaw is useful in tracking the students' progress as they matriculate.

Because the teachers found value in the program, a few teachers from Wells Bang Na collaborated on encouraging the purchase. This collaboration led to the heads of all three Wells campuses submitting a formal request that the school use the program system wide. Ms. Emma (grade one teacher) volunteered to be the seesaw ambassador. She facilitated a training for the teachers at the beginning of the year, and she moderates teacher accounts. Anecdotal evidence indicates teachers and parents find value in the Seesaw program.

Garden project. At the beginning of the 2018-2019 school year, I asked for volunteers to lead the garden project. Ms. Queenie (pre-k teacher) and Ms. Kal (Thai teacher) agreed to oversee the garden; they coordinated with drivers (to buy more soil, have the crops removed, till and get the plots ready) and with teachers and students. They made a cheat sheet for teachers who know nothing about gardening in the tropics, explaining which crops grow nicely in Thailand at various points in the year. Then they compiled the list of seeds that each class wanted, bought and distributed the seeds, marked the plots, and continued to coordinate with other teachers in this project. Ms. Kal noticed that birds were eating the seeds of the newly planted garden plots. To remedy the situation, she bought straw to place on the garden; she initiated this action without any prompts from leadership or other members of the community. When Ms. Queenie noticed that some plots had not sprouted crops, she responded by developing a back-up plan in case the plants would not sprout, planning to redistribute seeds and speak with the gardener about starting a nursery. She decided to work with her class to plant flowers in the unused plots to make our garden more beautiful, exhibiting a teacher initiative to contribute to the school.

Changes in meetings. Mr. Brad noticed that full participation or equal participation was not happening between the homeroom teachers and the specialist teachers at some grade levels. To address how to fully engage all teachers, he restructured collaboration meetings to have homeroom teachers and specialists meet on alternative weeks and come together on the third week. Mr. Brad changed the location of meetings depending on the phase in the unit of inquiry. At the beginning of the unit, the teachers met and collaborated about the unit in the PYP meeting room. In the middle and at the end of the unit, the teachers met in the computer lab, so they could enter their reflections directly into the unit planner. Finally, Mr. Brad created a reflection tool for teachers to use throughout the units that could be added to the unit planners. All documentation is on a shared drive. The changes in meetings and paperwork have resulted in more balanced completion of the planners. Since the teachers still believe that the unit planners for IB are redundant and too much work, we will consider revising the planner to suit our needs after our IB authorization visit in January 2019.

Teacher exercise group. In one of our collaboration meetings, I mentioned that despite teacher leadership and action showing up in pockets at Wells Bang Na, our community was less cohesive than it was a year earlier. After the meeting, Giacomo, our new PE teacher, asked if he could form an after-school workout club to build community. Giacomo wrote to the teachers and asked them to join a Thursday after-school workout session; about eight teachers and TAs joined the exercise group. Some teachers voiced that they could not make it on Thursdays and asked if we could also have an after-school program on Fridays. The workout group brought together people that usually do not have much access to each other and was successful in building bonds. Mr. Giacomo organizing the exercise group was an effort in community building. Figure 10 is a photograph of the teacher exercise group; an effective way to build community.

Figure 10. After school exercise club initiated by Mr. Giacomo.

In conclusion, teachers' initiatives have happened organically throughout PAR Cycle Three. The initiatives have ranged from improving communication and record keeping for student achievement (Seesaw), using time more effectively and improving reflection about our instructional practices (changes in meetings), and enhancing our school environment for our students (garden project) to building community among teachers (exercise group). Even though the initiatives span different areas, they were all led by teachers, with our community and school improvement at the heart of each project. The initiatives may have been successful since they were not enforced and did occur organically. In the next section, I will discuss PYP elements present in our school by analyzing grade four as a representation.

PYP Elements in Grade Four

The PYP elements are evident inside and outside of classrooms and in the written and taught curriculum thanks, in large part, to the teachers for taking the lead. The unit planners, students work, program of inquiry, and displays demonstrate that the elements are present in our curriculum. The PYP elements that are embedded in our units of inquiry are transdisciplinary skills, attitudes, key concepts, the learner profile, and action.

Unit planners. The grade four-unit planners were one tool used to analyze student learning in the PAR Cycle Three. The teachers recorded what they intended for students to learn, the questions they would use as provocations, the activities that students engaged in, and the effectiveness of the lessons they facilitated. The unit planners include specific places to record PYP elements in the written and taught curriculum. In the unit plan taught during the time period of PAR Cycle Three, all PYP elements were present. The key concepts addressed in the unit were connection and causation. The concepts were covered in the homeroom classes and in the

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specialist classes as well. The teachers recorded that the attitude, commitment, and learner profile characteristics open-minded and balanced were also fully developed in the unit. Commitment, open-minded, and balanced were covered in homeroom and Physical Education classes. The skills that were focused on in this unit were motor skills, comprehension skills, and speaking skills.

One of the goals of inquiry-based education is higher cognitive thinking; I analyzed the teachers' questions for students recorded in the unit planner and sorted them using Bloom's taxonomy (see Figure 11) to analyze if the students reflect the teacher's questioning patterns in our workshop. The questions showed that the teachers are asking higher cognitive questions most of the time. Out of seventeen questions asked to students, only two were recall questions; ten were analysis questions, and five were evaluation questions. The graph below displays the cognitive levels of questions asked by teachers in the unit and documents how teachers are engaging with students' higher levels of cognition, which is our goal with the IB curriculum.

Student work in grade four. Two examples of student action in PAR Cycle Three are writing letters to Dr. Chang about the food situation at school and leading morning exercise. During PAR Cycle three, the grade four class inquiry included physical and mental growth, balanced diets, healthy living choices, and how we can grow from local and global perspectives. The central question was: As we grow, how can we become more responsible for ourselves in challenging new ways? The grade four students' activities focused on being balanced, open-minded, and committed. The students created a log of daily food and exercise choices; they reflected on their choices each day. The students showed action as well. They wrote letters to Dr. Chang asking for healthier food options at lunch. The students suggested using brown rice instead of white rice, using less oil, and avoiding fried foods. Dr. Chang replied to the letters
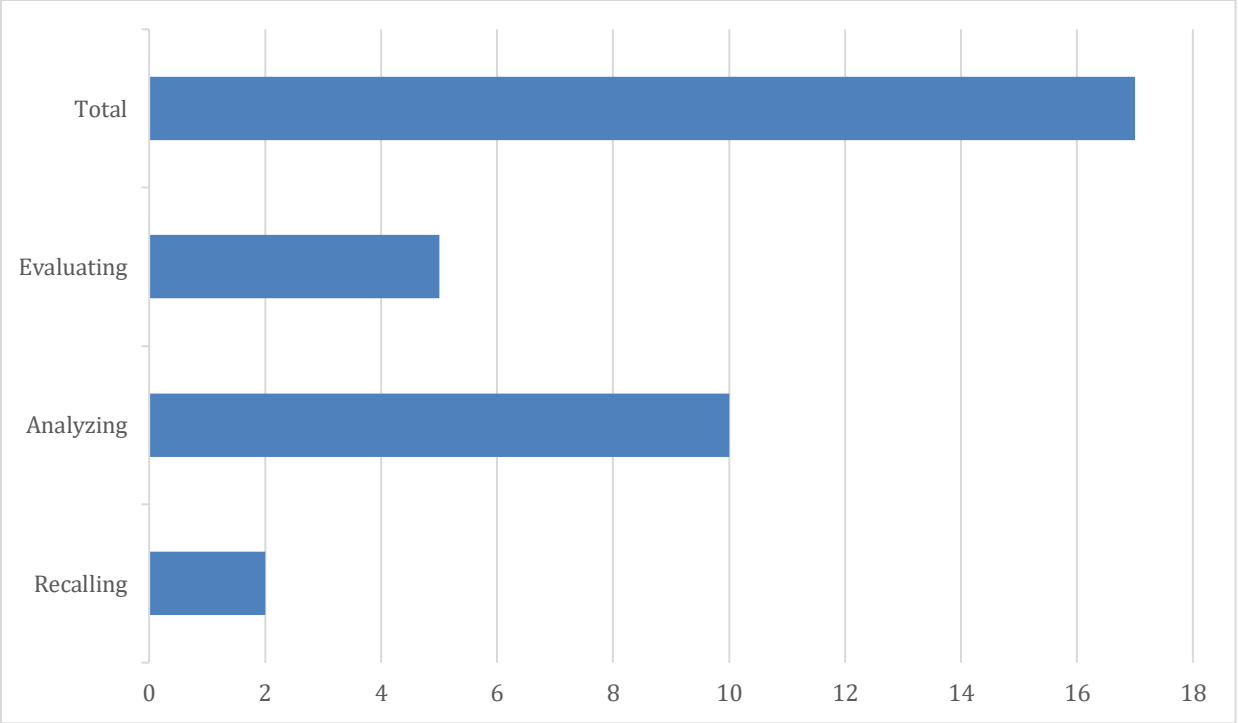
Figure 11. Questions posed to students in grade four unit one, who we are.

telling the students that he had read every letter and was proud of the children for taking initiative. The grade four teacher's post on seesaw summarized the unit: he wrote, "Wrapping up our final line of inquiry. Looking at how we grow can help us understand how we change, why we change, and how we can make positive change to keep us active and happy. As we grow up, we go through body changes, thought changes and relationship changes. We saw this in our timelines, and we sorted out the milestones in our lives into these 3 categories. Which ones are you looking forward to? Which ones aren't you anticipating?"

Displays of PYP elements. In and outside of the grade four classroom, all elements of the IB PYP are displayed. During the unit, "who we are," the students worked on the outside bulletin board, where their exercise calendars and food logs were posted for three weeks. The display showed that our students are balanced and committed. Our students and staff ate healthy before this unit; however, I observed the grade four students eating healthy and saw very little junk food on their food diary logs. The grade four students continued to bring healthy snacks to school daily. The students even protested about "too much candy!" on Halloween. This also shows that the students are balanced and committed. Even after the unit ended, students continued to lead morning exercise two out of five days each week, with teachers leading exercise on the alternate days. The continuation of grade four students taking the lead on health and wellness at our school indicates that the curriculum has been successful in creating positive changes. In the next section, I discuss concept-based learning at our school.

Concept-Based Learning, Deepening Understanding

In PAR Cycle One, I observed misunderstandings in teachers' knowledge of concept-based education. In order to understand more deeply and embed the PYP concepts in our program of inquiry, we hosted an in-house IB PYP workshop during PAR Cycle Three to address the issue

of how to reach for that level of thinking. The analysis of data from this workshop using Bloom's taxonomy model indicates that teachers were operating at a high cognitive level (analysis); however, we were not as strong on the top tier of the taxonomy: creating. The facilitator of the workshop used photographs as provocation to examine a sample unit through a conceptual lens. The questions that teachers asked during our mini lesson were higher cognitive questions two thirds of the time. This indicates that teachers are thinking at a higher level and are developing an understanding about how to transfer into their lessons. Figure 12 represents the teachers' questioning patterns and use of higher cognitive questioning categorized using Bloom's taxonomy.

As a result of the workshop content, we reviewed the program of inquiry (POI) through a conceptual lens at each grade level and made sure that the central idea and lines of inquiry fit the concepts for the unit. After the units were aligned horizontally, we met with a representative homeroom teacher from each grade level and at least one specialist per grade level to look at the POI vertically. Our revised POI has stronger inquiry elements driven by conceptual understanding. In the next section, I will discuss reflection at our school and how we have made this a common practice to improve the students experience at our school.

Reflection for Better Learning

Reflection is an important part of the learning process in IB and is recognized by the IB as integral in every unit. "The PYP continues to embrace a concept-driven approach to learning and teaching. A range of conceptual understandings may arise from the concepts and, ultimately, the central idea. Reflection is no longer listed as one of the key concepts and is fully integrated throughout all learning and teaching to strengthen the ongoing inquiry process. The remaining
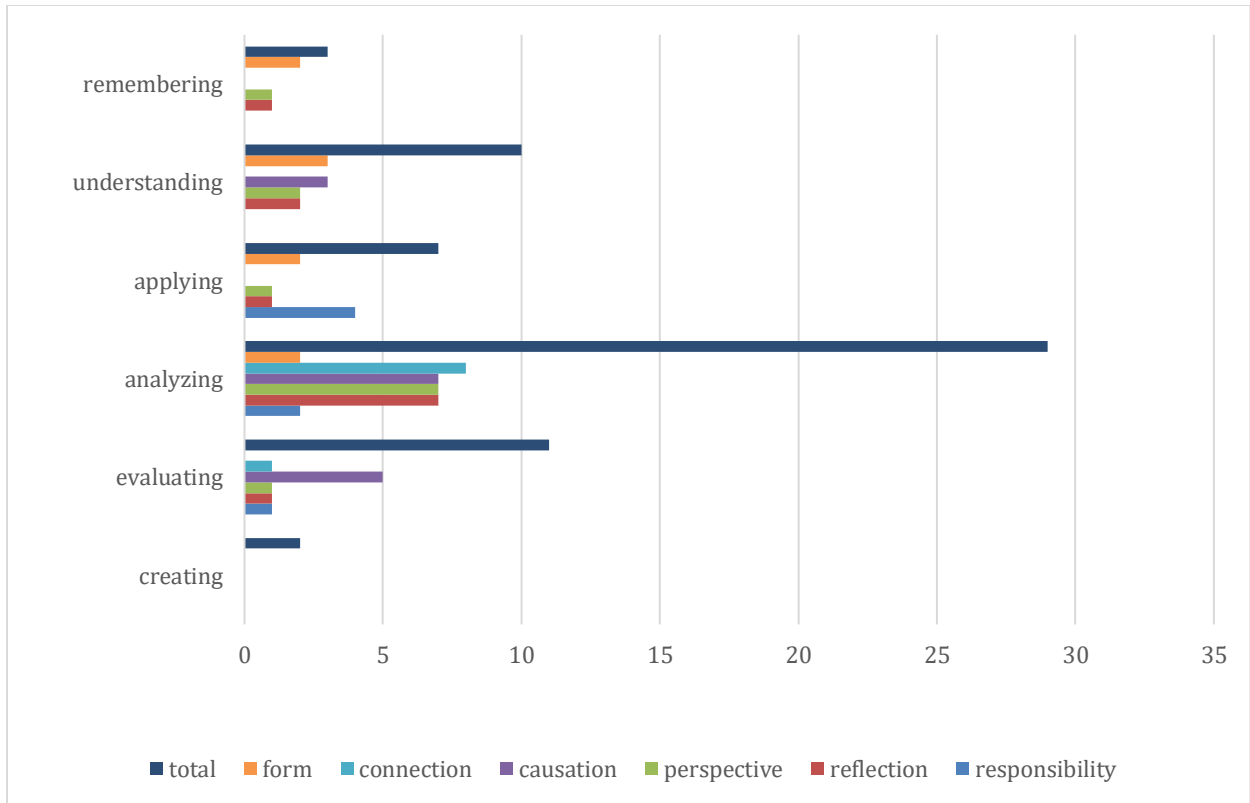
Figure 12. Teachers' questions categorized according to Bloom's taxonomy.

seven key concepts continue to be mapped within the programme of inquiry" (IBO, Blogspot, 2018). At Wells Bang Na, reflection has become common place in the last two years. In our concept-based workshop, we reflected on how students learn best and which obstacles they face. The teachers reflect on student learning every unit in the unit planners, which has been effective in determining how to create more effective units in the future. In the early years building, the teachers have made a display as part of instilling reflection in learning at a young age. I discuss three reflection tools we use: five square reflection, unit planners and reflection in early years.

Five square reflections. At the in-house workshop about concept-based learning, all participants worked in groups to answer the questions What hinders learners? What are teacher actions?, What helps learners?, What is the role of concepts?, and Recommendations? The four groups had similar responses to the questions showing that we are cohesive in our pedagogical beliefs. Our teachers believe that language and teaching methods hinder learning. In the category of teacher actions, they believe that teachers should guide students and provide an engaging classroom with adequate resources. Figure 13 represents the coded responses of the teachers' answers about what helps learners and what hinders learners.

The teachers agreed that authentic, experiential learning that is based on prior knowledge is important for our students. The role of concepts is critical for real world authentic learning, as indicated in the global competencies for 21st century learners, and conceptual understandings organize the curriculum. Teachers gave recommendations of using concepts as a base for all learning, to individualize instruction as well as goals for our students, and to provide scaffolding for our students and parents. The responses of the five square reflections showed a significant change in teachers' pedagogical ideas. When I first came to Wells Bang Na, teachers had not fully reflected about how children learn best, and they were often teaching traditionally from

What Hinders Learners?	Frequency
Language	4
Teaching Methods/Instruction	4

Teacher Actions	Frequency
Teacher as a guide /facilitator	4
Engaging classroom	3
Resources	2

What Helps Learners?	Frequency
Building on prior knowledge	3
Authentic/Experiential	6
Questioning	2
Reflection	2

Role of Concepts	Frequency
Real World/Authentic	2
Transdisciplinary curriculum	3
Organizes curriculum	4

Recommendations	Frequency
Concepts as a base	3
Individualize instruction/goals	2
Scaffolding /Support for parents and Students	3

Figure 13. Teachers' responses to the five square reflection.

textbooks with teacher as focus of classroom and rote learning was common. Of course, there were pockets of effective instruction, but at the time the written curriculum that was used school wide was extremely teacher-centric. It is encouraging to document the progress and cohesion in our approaches to teaching and learning.

Unit planners. IB requires that schools adopt the unit planners that are used system-wide. Even though the paperwork was tedious and time consuming at first, it has encouraged teachers to think about their instruction and how it is impacting student learning. The reflection piece is instrumental in teacher and student growth. The questions on reflection are:

- To what extent did we achieve our purpose?

- To what extent did we include the elements of the PYP?

- What student-initiated inquiries arose from the learning?

The homeroom teacher and grade level specialists are required to reflect on these questions and add their responses to the unit planner at the end of each unit. The grade four unit from PAR Cycle Three, who we are, offers a snapshot of the teachers' comments on the planners. Their answers indicate that the educators at Wells Bang Na need to focus on generating more inquiries and higher cognitive questions. At the end of PAR Cycle Three, we finished reviewing our POI through a conceptual lens. We continue to collect data about higher cognitive questioning to see if our POI is successful in facilitating deep thinking in our students.

Reflection in early years. The early years teachers are committed to reflection as an important aspect of learning that needs to be taught early on. To accomplish this goal, they created an interactive bulletin board, designed to be child-centered. The mirrors represent what it means to be reflective and investigate yourself. Our young learners like to look at their

reflections, and we are hoping the abstract concept of self-reflection is more accessible to our students.

The image of the board in Figure 14 shows that teachers are embedding the PYP elements in the curriculum and acting to help our students, parents, and community better understand the PYP. The teachers collaborated to create the learner profile in action board. The early years teachers have also incorporated reflection in the classrooms to teach self-regulation. As young as two years old, the children are learning about green and red choices in social situations. The lessons began in PAR Cycle One when two of the five classes were using this system as a reflective self-management system. During school year 2018-19, in PAR Cycle Three, all five classes had adopted this system. According to our early year's teachers, our students' behavior has improved consistently in the past two years. We believe that mindfulness, reflective self-management, more interesting exploratory learning, and consistency across the grade levels supports this change, but further evidence in our ongoing determination to continue cycles of inquiry is necessary.

In conclusion, reflection among our teachers has provided a common pedagogy of how children learn best. Reflection has improved instructional practices and facilitating learning in school; the unit planners are useful in this process. Finally, reflection in the early years allows young learners to monitor themselves socially and academically.

This section has described transfer of mindfulness, teacher initiatives, PYP elements in the units, concept-based learning, and reflection during PAR Cycle Three. In all areas, our school is successful or making positive progress. In the next section, I revisit my original research questions and draw conclusions about the findings.
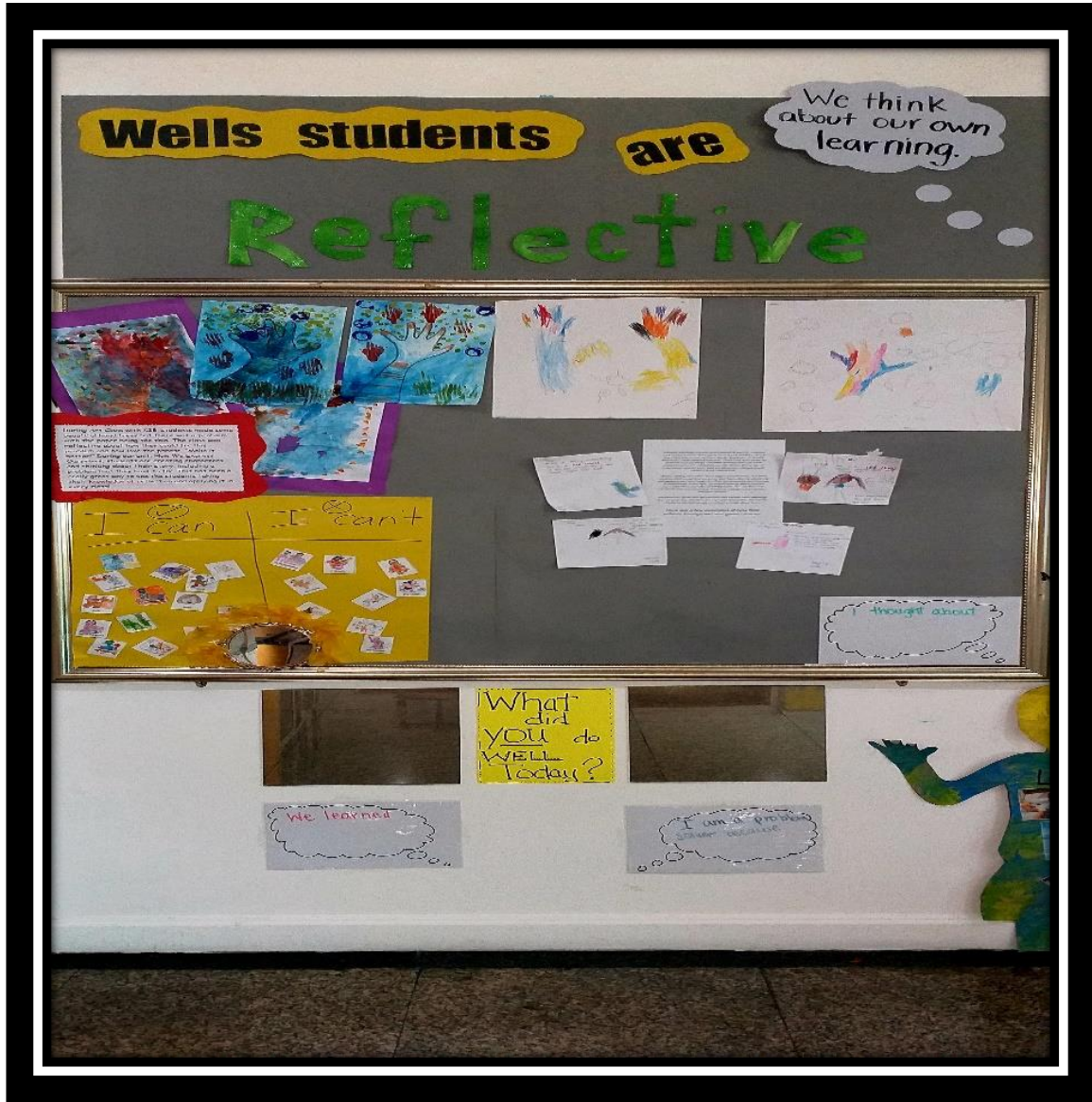
Figure 14. The reflective display board in the early years building common area.

The Continuous Learning Journey

The evidence from PAR Cycle Three demonstrates that PYP elements are present in our curriculum through written documentation and displays around school, in classrooms and in common areas, and through semantics and that PYP skills, concepts and attitudes are present in teacher pedagogical choices (research questions 1 and 2). At the beginning of the PAR, in the first cycle, teachers were collaboratively changing the written curriculum. In PAR Cycle Two, the changes started to show in the student work as well. We started using Seesaw as a digital portfolio and communication tool with parents and students. In this way, we could track the progress of our students. In PAR Cycle Three during class observations, I observed teachers using the PYP attitudes. The student work in classrooms and common areas demonstrates that the PYP elements are now an integral part of our curriculum and instruction. Of course, the PYP elements in the curriculum are important; however, the deeper changes in our school culture are more important in our transition to mindfulness, distributed leadership, and using an inquiry-based conceptual approach to learning.

In the enhanced PYP that is currently being released from the International Baccalaureate Organization, mindfulness is one of the three self-management skills that we want our students to adopt. The other two skills recognized by the enhanced PYP are time management and organization. Mindfulness is essential for teachers and students as our school and our world changes. Teacher initiatives and teachers in flexible leadership positions are essential in a distributed leadership model. The previous leadership structure at Wells Bang Na was a top-down approach, and now the changed leadership structure changing is evidenced by teachers taking initiative. The coordinator took the lead changing the meeting format and location and modified the PYP unit planners. Other teachers started programs to benefit school

communication and community. A concept-driven curriculum and reflection by students and teachers are creating an environment in which the members continue to learn and grow. A distributed leadership structure and teacher/student agency (voice) need to be present for the community to feel empowered, allow for new teacher initiatives and sustain change.

In Chapter 8, I summarize the key claims and correlate my findings to previous empirical studies as well as look at the big assertions from PAR Cycle One, Two and Three. I correlate these claims to current and future policy, practice and research and explore my growth as a leader and the impact the PAR has had on my leadership development.

CHAPTER 8: GOING FURTHER

The long-term goal of the participatory action research project Wells Bang Na was full collaboration among teachers, leadership, students, staff, and our community to develop and implement an integrated, inquiry-based course of study that aligned with the IB PYP. We were dedicated to co-construction by a community of teachers and students who embodied the IB PYP daily inside and outside of the classroom. The initial focus and goal of the project was to implement a transdisciplinary curriculum at grade three level that was aligned and supported by the IB PYP learner profile attributes, attitudes, and concepts at Wells Bang Na campus. In PAR Cycle One, I focused on the grade levels were functioning differently, and all grade levels offered important data sources. Therefore, as we proceeded in the PAR project, we developed a whole school focus.

Yet, for our school to change significantly with teachers as leaders; I needed collaborators to do the work. We created a mid-level leadership team in PAR Cycle Two consisting of Mr. Brad (PYP coordinator), Ms. Viki (EY coordinator), Ms. Oh (Thai director) and myself (school principal). Teacher leadership appeared in flexible roles and distributed leadership became an important aspect of the study. As of academic year, 2018-2019, Mr. Brad's main responsibility became instructional leadership, facilitating the collaboration meetings, providing support in the unit planners, coordinating with the IB, and facilitating the development of the program of inquiry. The overarching question of the PAR project remained the same from start to finish: How does inquiry-based education inform teacher practice? I focused specifically on examining how our community worked together while implementing the IB Primary Years Programme. As Figure 15 indicates, informed by the empirical and practice-based research, we used the knowledge to inform the IB requirements and then designed and implemented three

Empirical, Theoretical and Practice-Based Literature
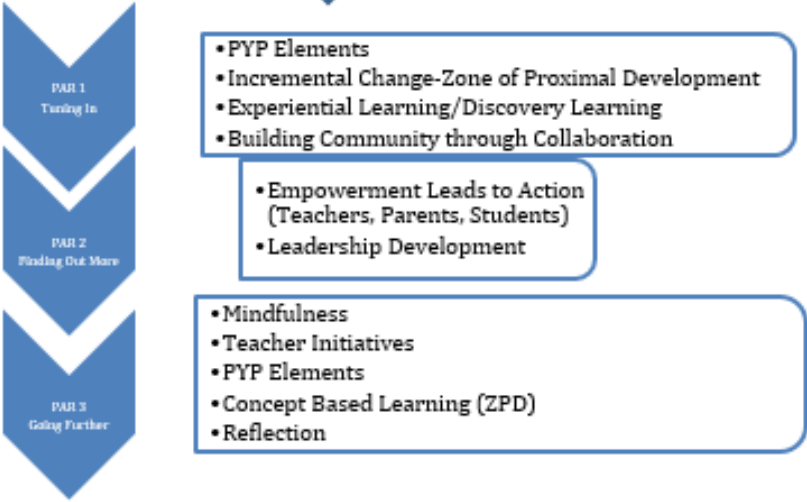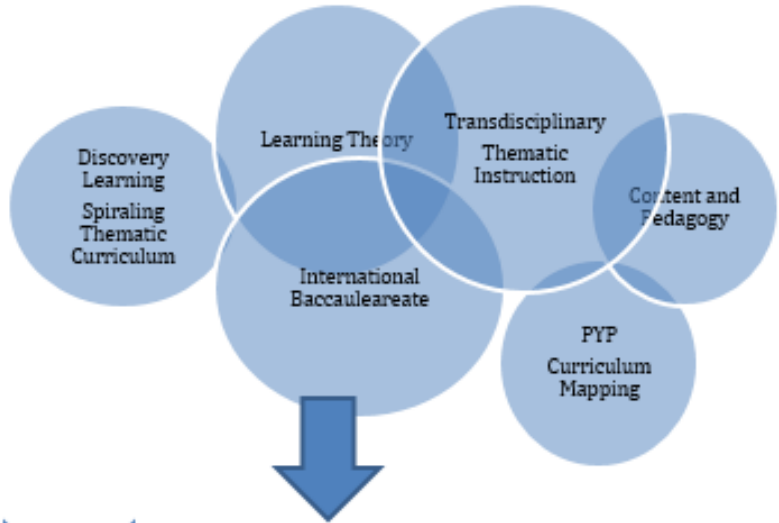
- PYP Elements
- Incremental Change-Zone of Proximal Development
- Experiential Learning/Discovery Learning
- Building Community through Collaboration

- Empowerment Leads to Action (Teachers, Parents, Students)
- Leadership Development

- Mindfulness
- Teacher Initiatives
- PYP Elements
- Concept Based Learning (ZPD)
- Reflection

Three Claims

1. Experiential, authentic, transdisciplinary approach leads to growth in all sectors of the school community: teachers, parents, students and leaders.
2. Building a collaborative environment using a strong curricular framework (IB) leads to positive changes in teacher planning that supports student-driven learning.
3. Achieving a balance between authoritative and collaborative leadership is tricky.

Broader Implications of the Three Claims

Figure 15. Summarizing the key points of Chapter 8.

iterative cycles of inquiry that resulted in the three claims. I discuss those elements in this chapter, and I cite broader implications and limitations of the PAR study. I analyzed the deductive and emergent findings from each of the three PAR cycles to make three claims: (1) Experiential, authentic, transdisciplinary approaches to education lead to growth in the whole school community (parents, teachers, students, and leaders); (2) Building a collaborative environment using a strong curricular framework (IB) leads to positive changes in teacher planning that supports student-driven learning: and (3) Achieving a balance between authoritative and collaborative leadership is a tricky balance.

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PYP Transdisciplinary Curriculum and Instruction:

A Centerpiece for School Change

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In this section, I present the claims related to the findings in PAR Cycle One (Chapters 5), PAR Cycle Two (Chapter 6), and PAR Cycle Three (Chapter 7) and connect the claims to the empirical, theoretical and practice-based literature.

Transdisciplinary Curriculum Approaches

Experiential, authentic, transdisciplinary approaches to education lead to growth in the whole school community (parents, teachers, students, and leaders). Teachers and students learn best when presented with experiential, hands-on, authentic learning that transcends traditional disciplines. Experiential and discovery learning are the best way that people learn in most circumstances (Bruner, 1971; Dewey, 1938; Vygotsky, 1978). In addition, their theories suggest that thematic spiraling curriculum and the zone of proximal development are important factors to consider when facilitating learning experiences. An IB education, "Emphasizes the importance of making connections, exploring the relationships between academic disciplines, and learning about the world in ways that reach beyond the scope of individual subjects. They also focus on

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offering students' authentic opportunities to connect their learning to the world around them" (IBO, 2017, P. 5). In the PAR project, the community of teachers and students learned to use experiential learning theory as the basis for designing transdisciplinary units of instruction and formative assessments increased the level of understanding in our teachers in designing and implementing a well-supported IB PYP curriculum. As the IB consultation reports indicated, in our second year as a school, we scored well on the IB elements. Figure 16 represents how the learning theories in chapter 2 related to the PAR.

In PAR Cycle One the teachers in the CPR group completed a task designed to gauge how they learn best. Six of eight teachers in the CPR group said that they learn optimally when given theoretical background knowledge along with a hands-on, experiential approach. It is important that the teachers' attitudes and beliefs about education are aligned with the pedagogical approach at our school. Our teachers participated in experiential learning opportunities including IB workshops, grade-level collaboration, in-house professional development, policy writing, planning and facilitating inquiry-based lessons, writing units and the program of inquiry, reflecting on student learning, and making improvements according to student learning. "Making PYP Happen in the Classroom" and "Creating a Concept-Driven Curriculum were professional learning opportunities, designed and facilitated by teacher-leaders, teachers experienced learning and then applied the new learning in their classrooms. In the "Creating a Concept-Driven Curriculum" workshop, teachers developed the theoretical framework of concept-based curriculum experientially and then analyzed the program of inquiry through a conceptual lens. As a result, teachers created units and lessons that focused on conceptual understanding and deepened the thinking of teachers and students alike. In PAR Cycle Three, the question patterns of teachers centered around higher cognitive questioning. In

| Literature: Learning Theory (Dewey, Bruner, Vygotsky) |
| Emergent Findings Experiential and Discovery Learning in CPR Group- PAR Cycle One |

| Deductive Findings: PYP Elements (learner profile, concepts, attitude, action, transdisiciplinary theme) | |
| PAR Cycle One
Some Elements Present | PAR Cycle Three
All elements present |

| IB PYP Curriculum: inquiry based, transdisciplinary, authentic, and concept- based. |
| Experiential, authentic, transdisciplinary approaches to education led to growth in the whole school community (parents, teachers, students, and leaders). |

Figure 16. The learning theories of Vygotsky, Bruner, and Dewey supported our actions in the

PAR.

analyzing nineteen questions from the grade four unit in PAR Cycle Three, ten of the questions were categorized as evaluating questions, five as How do analyzing questions and only two as recalling questions (Anderson & Krathwohl, 2001; Bloom, 1956). The results indicate that the teachers are posing higher cognitive questions. The observations of student work on the Seesaw program indicated that higher levels of thinking were more apparent in instructional practices and student output. The student work on Seesaw duding PAR Cycle Three demonstrated that the PYP elements were present in the curriculum and the students were exhibiting higher level thinking as a result of analyzing student work. As indicated in the evidence in PAR Cycles One and Two, the parents, once they fully understood the inquiry approach, used their knowledge and skills to investigate and advocate for a sounder nutritional program in the school.

In summary, a strong curricular approach coinciding with a theoretical background of knowledge and experiential learning for teachers' models and supports optimal classroom learning. Transdisciplinary learning models authentic and real-life learning. At transitioning schools and small schools, a strong curricular model and clear, incremental goals are critical. The IB PYP provided us with the framework and support to work toward these goals and tools to deepen our teachers and our students thinking; however, teacher leaders and teachers worked to contextualize the IB requirements to Bang Na. Changing our approach to education to include experiential, authentic, transdisciplinary approaches to education led to growth, deeper thinking, and higher academic achievement in the whole school community

Collaborative Environment and Curricular Framework

The second claim is that building a collaborative environment using a strong curricular framework (IB) leads to positive changes in teacher planning that supports student-driven learning. One IB program requirement is time for teacher collaboration. To meet this

requirement, when I designed the teachers' schedules at the start of the IB implementation, each

grade level had increased collaboration time. In addition to following the IB PYP requirements,

the built-in collaboration time aligned with my years of experience working at different

international schools, where I saw that teachers work together better and are more cohesive when

collaboration time is in the schedule. As I have experienced, when collaboration time is not

embedded in the schedule, teachers see it as extra work outside of their normal duties. According

to the IBO (2013), the school is a "community of learners in which students and teachers learn

together and are motivated to learn by the process itself". "In schools where professional

community is strong, teachers work together more effectively and put more effort into creating

and sustaining opportunities for student learning" (Kruse et al., 1994, p. 4). When designing the

PAR and throughout the process of implementing the IB curriculum, I worked with the

leadership team to model the process of inquiry-based learning with our CPR team to make this

characteristic part of our school culture. Figure 17 represents the points involved in creating a

strong inquiry-based transdisciplinary curriculum that are supported by the IB framework.

Collaboration, community, and teacher empowerment led to creating the curriculum that

included the PYP elements and developing a concept-driven transdisciplinary education in which

students drive their own learning.

Teachers developed the curriculum over a three-year period since the opening of Wells

Bang Na Primary campus in Fall 2016. At the early phases of PYP implementation, some

teachers lacked confidence in their abilities to meet the requirements of an IB candidate school.

The collaboration time supported teachers in building the program of inquiry in our first year of

operation and in PAR Cycle One (Fall 2017). In PAR Cycle One, the teachers created units of
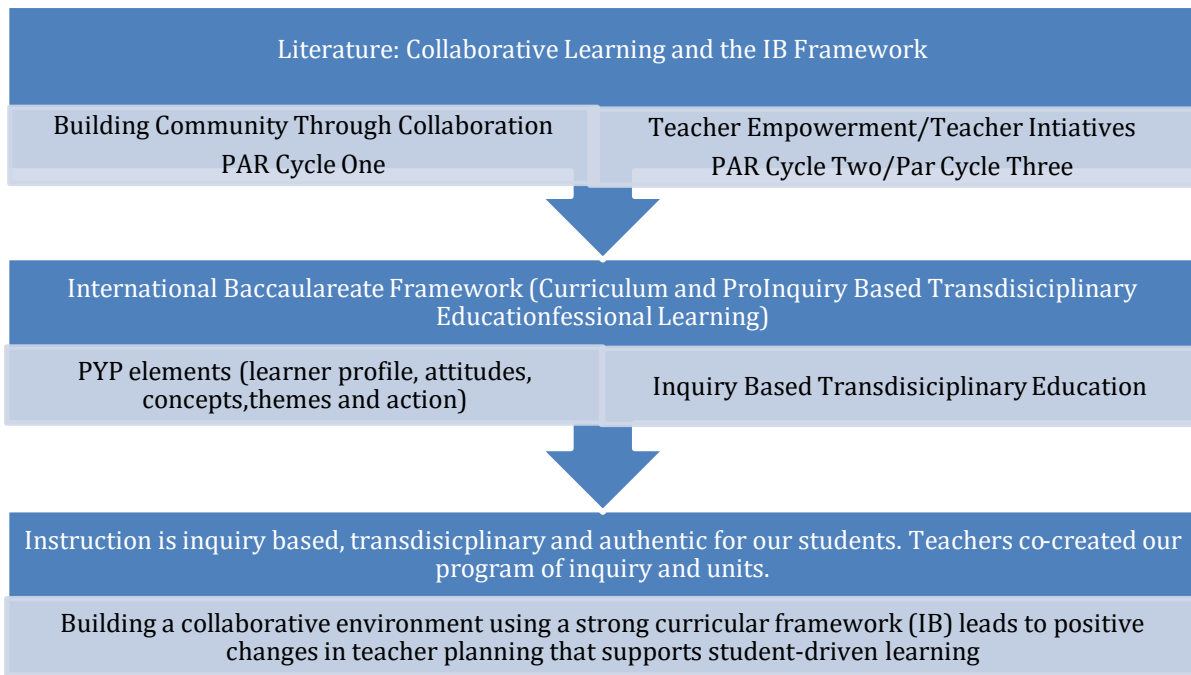
Figure 17. Collaborative environments and the IB framework support cohesion in planning

authentic and relevant curriculum leading to student driven learning.

study for each transdisciplinary theme. The collaboration time provided a platform for brainstorming best practices and sharing what the students were learning in the specialist classes.

In PAR Cycle Two, the teachers continued to meet weekly in order to discuss student learning, what worked, what did not work, and reflect on student work in general. At the end of PAR Cycle Three, Ms. Viki, our early years coordinator, had teachers complete an exit slip, which asked (a) What did you like about grade level collaboration? and (b) How can we make collaboration better? The results indicate that teacher's confidence improved, they found discussions an opportunity to share ideas and that collaboration had improved over time. They requested more collaboration time so that they could continue to improve teacher-to-teacher collaboration and design innovative and challenging units of instruction. Yet, at the beginning of PAR Cycle Two (2017-2018), some teachers expressed that they were not completely comfortable with inquiry-based teaching. To respond, the leadership team facilitated a professional development session to focus on the inquiry cycle and ways to make stronger constructivist lessons. As a result of this workshop, the teachers' lessons strengthened, and by the third PAR Cycle, data collected on teachers' and students' learning showed higher level thinking and questioning. Higher cognitive questioning became more frequent in teacher question patterns, and students posed deeper questions as well. The PYP elements became noticeable in teachers' lessons, in students' work, and in displays in and out of the classroom. Teachers' reports about the students detailed students' behavior in relation to the learner profile and how well they understood the concepts, particularly the affective domain behaviors we look for in elementary children. The collaboration and the IB framework supported the curricular changes needed to make our program stronger for our students. Leadership and trust were key areas that supported school wide cohesion in a collaborative environment as well as being

responsive to teachers' needs. Creating a collaborative environment among teachers not only provided teachers an opportunity to create authentic curriculum for our students, it also provided time for building stronger teams. In a transitioning or growing school, collaboration supported by a robust pedagogical model contributes to a cohesive community of learners.

Leadership Balance

The third claim is about my leadership. Achieving a balance between authoritative and collaborative leadership is tricky. I set the tone of the school and projected the stance of distributed leadership while promoting collaborative leadership possibilities for others. The authoritarian aspect of being a leader was difficult initially and I had to develop in this area.

At the outset of the PAR, I was in my second year as a principal and had had no formal preparation for that role. According to an IB report, "the principal's influence on students is second only to that of the teacher. Successful principals encourage the development of communities of learning, supporting a strong, mutually supportive collective service ethic" (IBO, 2016, p. 1). Lambert, Zimmerman, Gardner (2016) indicate that individual leadership is supported by collaborative inquiry processes and working with the community. I also knew from the literature that I valued collaborative or distributed leadership, and I needed to enact that in a way that did not delegate but drew on the leadership strengths of teachers that were already distributed (Spillane et al., 2001). Throughout the PAR process, I used iterative cycles to inform my practice while learning how to be an effective principal. At the beginning of PAR Cycle One (2017-2018), we established a leadership team including the primary years coordinator (Mr. Brad), the early years coordinator (Ms. Viki), and the Thai director (Ms. Oh). In PAR Cycle One, the prospective coordinator and I facilitated meetings together; however, in the PAR Cycle Two and Three the coordinators had a more central role in the weekly collaboration meetings, and I

supported them when needed. This distributed leadership framework aligned with theory Y, which states that believing in your staff leads to better workplace outcomes (MacGregor, 2006). I discussed that organizational theory in Chapter 7. Figure 18 represents my leadership development in the iterative PAR cycles relating to extant literature. As a novice leader, theoretical knowledge and experiential learning informed my practice. Achieving balance and being authoritarian when needed was difficult for me and this is a leadership area that is developing. I discuss my leadership journey in more detail later in this chapter.

In conclusion, the three claims support that experiential learning modeled by teachers and school leaders can lead to effective teacher planning supporting student driven learning. It is important for teachers to model learning as a community. In addition, a collaborative environment is essential for building a strong school culture and curriculum; this works best when supported by a robust pedagogical approach, structures and networks. Finally, leadership needs to have a vision, demonstrate a positive attitude and set the tone for the school. The leader must support teachers and encourage teacher leaders while maintaining an authoritative leadership when needed. In the next section, I discuss the broader implications and limitations of this research effort. As well, I examine the research questions in light of the claims and implications.

Broader Implications

In this section, I discuss the three claims through the lens of a broader audience and discuss the implications for future research. We recognize that the bridge between research and practice is iterative and must proceed interactively. The PAR process was effective in engaging our community and adjusting our areas of improvement through the iterative evidence and
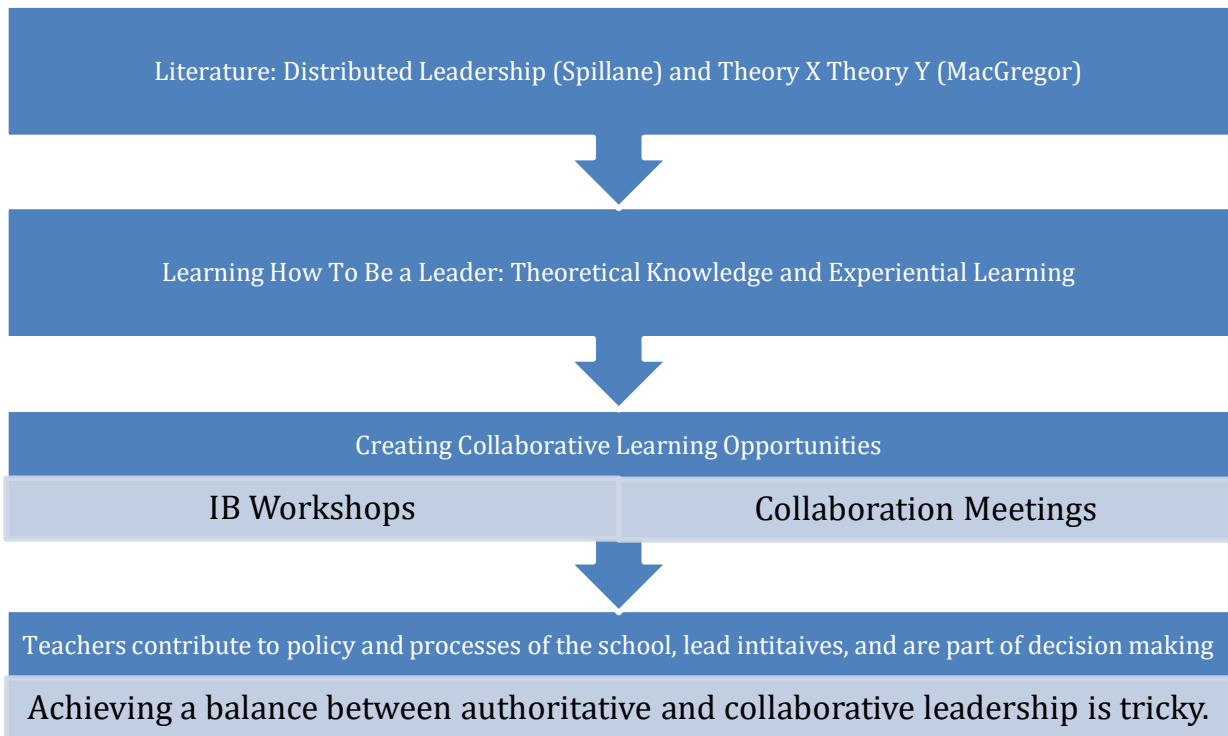
Figure 18. Distributed leadership and Theory X Theory Y along with theoretical knowledge and experiential learning has contributed to my growth as a leader.

findings. As there are relatively few dissertations written using the participatory action research approach with co-practitioner research teams, that are at the school for successive cycles of inquiry and data collect and analysis, schools would greatly benefit from utilizing the PAR approach as it requires a process of theoretically-based experiential learning.

Experiential Learning Beyond Wells

The literature and the findings in the PAR indicate that experiential, authentic, transdisciplinary education allows for optimal learning. The PAR project could inform Thai education as well as other IB schools. Transdisciplinary education is available at international schools in Thailand; however, Thai schools follow a traditional educational model where the students are given knowledge by the teachers. The students in Thai schools usually sit still in their desks and complete their work individually; the learning is largely rote. Thai schools could incorporate experiential learning and replicate teacher inquiry, and, if the results were positive as they were in this study, this could be the first step in changing the Thai system, which follows an outdated educational paradigm. It is especially beneficial for schools to create programs that are interesting and authentic for their learners and not adapting a national curriculum that teaches over broad areas that may not be relevant to the students.

As I have stated throughout the dissertation, adopting the IB PYP has provided Wells Bang Na with guidelines for the process or curriculum changes and the framework to base our units of learning on. The PYP elements are designed to create well-rounded individuals who are not only academic but also internationally minded global citizens. The PYP elements are a framework and schools can create the curricular content to suit the learners. The benefits for my school have been tremendous from teacher cohesion, creating a community of learners; teachers, students and community, to creating a better program using transdisciplinary, inquiry-based

student-centered learning. The findings of this PAR indicate that the IB framework along with our teachers creating an authentic curriculum that is catered to our students does improve critical thinking skills. Particularly in PAR Cycles Two and Three, the analysis of student learning through classroom observations, teacher reflections, unit planners and reports showed that the students are using higher cognitive thought as are teachers in their careful planning and execution of lessons. Schools that are do not have a strong pedagogical background, need support from a wider organization and are ideologically aligned with experiential learning focusing on the whole child would greatly benefit by becoming an IB world school, especially if the school is new and has a novice leader. Another major advantage of being an IB school is the network of collaboration that the IB provides. Sharing our process and findings with other IB schools could be beneficial to more schools as well as boost our ability to be clear about what we do and what we need to improve.

Collaboration Beyond Wells

My second claim (2). Building a collaborative environment using a strong curricular framework (IB) leads to positive changes in teacher planning that supports student-driven learning. Collaboration at our school has strengthened our community and our curriculum. I would argue that every school should have grade level and whole school collaboration time built in to the school schedule. Structured collaboration time leads to more organic unstructured collaboration as evidenced in this PAR. Many IB PYP schools have a late start for the students once a month and utilize the time for whole school, team or focus group meetings. As my findings indicate, teachers like to be part of the process in changing school policy, procedures and curriculum. A broader research base could inform the IB network, and we could collaboratively investigate the benefits of collaboration as a network of IB PYP schools.

The IB network advocates sharing of knowledge and learning in public. As the IBO introduces the enhanced PYP (coming out in 2020); one of the principles that has been added is being a community of learners. With this change, the IB has encouraged stronger collaboration with other IB schools. The IB organization is a strong supportive agency for small schools in that international schools in the same geographic areas are part of a network of schools. This is important for transitioning schools to gain guidance from more established schools. The input from IB was helpful for Wells Bang Na in our early phases of candidacy when we were unsure of implementation of PYP; a few schools in our network were always available for support. The schools invited our teachers to come and observe classes which was effective for our teachers to learn how to use inquiry in the classroom. Collaboration in our own school is a powerful way to create a stronger curriculum and culture at our school. There is not much research on IB networks as platforms for external collaboration among schools located in a geographical area. The Thailand IB network just merged with other networks (2018-2019) in SE Asia, which includes Cambodia, Laos, Vietnam. The idea behind the merge was to strengthen the network, and our research findings could be useful to that network.

A broader implication beyond the IB network is schools outside of the IB PYP collaborating for positive curricular change. There are Bangkok International School network meetings approximately every six months that are focused around topics in the early years, but there are no primary collaboration groups that I am aware of. Starting primary cross-campus collaboration meetings with schools that are pedagogically aligned but not IB PYP schools is something to consider.

Leadership Beyond Wells

As the leader, I set the tone of the school and projected an authoritative stance while promoting collaborative leadership possibilities for others. However, as the evidence indicates, achieving that balance was tricky. In my opinion, the PAR process was instrumental in engaging teachers to work together to successfully change our program to an IB PYP school. A leadership-supported PAR and the activities included provide a baseline for school improvement where all stakeholders have voice and agency. The end goal for the project was improving student learning but to do this we had to start with the teachers. In addition to the PAR process being successful for iterative cycles of improvement, this modeled inquiry-based learning for our students.

At Wells Bang Na, the PAR process has engaged our teachers using an inquiry-based, constructivist, building on their previous knowledge and learning incrementally by way of the zone of proximal development. As a leader, I have encouraged teacher engagement. The project was intended to model IB's pedagogical approach to education. According to Allen (2019), PAR is built on four principles: collaborating by participation, developing knowledge, creating social change, and empowering participants. The PAR at Wells Bang Na incorporated these principles while generating distributed leadership as a part of our collaborative efforts and learning. The activities included provide a base-line for school improvement where all stakeholders have voice and agency. The end goal of all our work is, of course, improving student learning but to do this we had to start with the teachers. Learning to lead with a distributed leadership model while maintaining authority was tricky as the teachers respond to different leadership styles, and some teachers are more accustomed to hierarchical, not distributed, leadership models.

Considering the broader community, schools could benefit from following a distributed leadership model and enabling teachers to become flexible leaders. Distributed leadership

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provides teacher voice and agency and allows teachers to feel that they are contributing to the school. At other schools, it would be beneficial to explore distributed leadership, flexible leaders and believing in people. Although, it was not the focus of this study, I came across some research that stated teachers who work at schools with distributed leadership models are likely to stay at that school longer. I would like to examine the existing research on this topic and research this at our school. IB PYP does encourages a distributed leadership and this is an area to examine more closely. In the next section, I discuss internal and external limitations in the PAR.

Limitations

All research projects face limitations. In this section, I discuss the internal limitations at Wells Bang Na and the external limitations for this study. The main internal limitation in this PAR study at Wells Bang Na was time. We had three action research cycles; however, to make lasting curriculum and cultural changes, it takes longer than two academic years. We need to start tracking student learning after the formal completion of the PAR. Other limitations in the study are high teacher turnover rates every three years due to the cycle of teachers' hiring and leaving. Fortunately, during PAR Cycle One, Two, and Three, our teacher turnover was relatively low. In the future, it is important for Wells International School to make necessary changes in order to keep teachers for longer than three years at our school.

Another limitation in this study at Wells International School Bang Na is the limited existing body of research for small international schools. Every international school in the world is unique in the student body, teaching demographic, geographic location, school culture, outside governing influence, and host country. There is a limited pool of research in international schools and the fact that every school is different, it is also hard to contribute to the research realistically and authentically.

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Discussion

The focus and goal of the project was to create and fully implement a transdisciplinary curriculum that is aligned and supported by the IB PYP learner profile attributes, attitudes, and concepts at Wells Bang Na campus. We were successful is changing our schools' curriculum and taking positive steps towards a distributed leadership model. In this section, I summarize the three main research questions and draw conclusions.

The first research question in the PAR was: How are our teachers naming, practicing, and calibrating the PYP skills, concepts, attitudes, and learner profile attributes to build our curriculum? The PYP elements are prevalent in our school program of inquiry, written, and taught curriculum. The PYP elements are present in our classrooms, in common areas, in articles written by teachers, in student work, on Seesaw and in our student's report cards. In such a short time our school has been extremely effective in creating a curriculum that is supported by the IB PYP elements and learning style. The education that we have co-created and implemented at Wells Bang Na has dramatically improved our ability to enact inquiry-based, higher cognitive and constructivist units of instruction. The IB organization provided a strong curricular framework that aided the changes at our school. Our team of committed teachers and leadership collaborated effectively to develop the program.

The second research question: To what extent are the skills, concepts, attitudes and attributes evident in student learning across all disciplines at grade 3? The PYP elements are strong in grade 3 curriculum as well as in all grade levels. As previously stated, the PAR involved all grade levels -- more than originally planned. The collaboration hours embedded in the schedule allowed for teachers to work together, create, and deliver strong inquiry-based lessons across all disciplines. During the PAR Cycle Three, the teachers analyzed the program of

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inquiry through a conceptual lens to ensure that the key concepts are driving the units allowing for deeper thinking for teachers and students. Currently in our school, the PYP skills, concepts, attitudes and attributes are present at every grade level. The PAR has been successful in its mission to align our curriculum with the IB PYP framework to create a strong inquiry-based transdisciplinary program for our students.

The third research question involved my leadership. I want to know how successfully I could lead with a distributed leadership approach and generate professional learning that connects teachers and teaching to the IB-PYP approaches to learning. Throughout the project, I created opportunities for teachers to learn from each other, from the leadership team and from the IB organization. Teachers collaborated in grade level teams, in flexible focus groups and in whole school professional learning opportunities. The leadership team observed classes and provided instructional leadership in areas that were needed. The teachers contributed to schoolwide development of policies, curriculum and units of learning. Wells had in-house workshops conducted by IB deepening our collective understanding of inquiry-based pedagogies. These learning exchanges transitioned our school to be an IB school and equally as important it created a culture of learning. I discuss this in more detail in the next section.

One principal from an IB PYP school said, "A curriculum is only part of the PYP. It is a mindset, a culture. It's the whole package. Although [the PYP coordinator] will look at the curriculum and make sure that the teachers are ticking the boxes … my job is the bigger vision about the school being an international minded, inquiry-minded place" (IBO, 2016, p. 2, para. 4). In our school, we have co-created a transdisciplinary curriculum reflecting the IB PYP elements, but more importantly we have established a community of learners.

Becoming a Leader

In my early assignments in the ECU program, we examined our beliefs about education by creating education journey lines. When I completed this task, it became apparent that theory and experience simultaneously provided the optimal learning climate for my learning style. The past three years completing a doctorate while learning to be a principal have been pivotal in my knowledge and approach to leadership. As a novice principal, I did not have theoretical knowledge or experience, and Wells International School Bang Na needed major improvements. Having limited formal leadership experience, the strongest assets I brought to Wells were my knowledge of instruction and curriculum, my creativity, my stance on leadership, and my belief that anything is possible. The ECU education doctorate program provided a theoretical framework, leadership content, different leadership models to examine, and more confidence that I wouldn't have had without the program. My professors and cohort have been coaches, mentors, and critical friends who provided guidance and constant support. Creating a community of learners was essential in the PAR process and enabled teachers to contribute to policy and processes of the school, lead initiatives, and be part of decision making.

Creating Collaborative Learning Opportunities

The literature review supports the claim that creating collaborative communities is essential for school growth and development. As I stated in my literature review, there are social implications that enhance professional learning communities. Among these are teachers and staff being open to improvement and a willingness to work as a collaborative team. Teachers must be willing to be risk-takers and experiment with new teaching techniques and design. Teachers need to feel fully supported when initiating new approaches to student learning. Educators must feel honored, respected and trusted in the school, as well as the parent community. Professional

learning communities need to be based on effective teaching which is based on instructional expertise. The research evidenced in the literature review and throughout the dissertation suggests that school leaders must create an environment conducive to collaborative learning. IB workshops and collaboration meetings had a huge impact on the instructional practice at our school which positively affected student- driven, authentic, inquiry-based learning.

IB workshops. I have supported instructional leadership by providing two in-house IB workshops; "Making PYP Happen in the Classroom" and "Concept-Based Learning." After the first in-house workshop, which provided a baseline of inquiry-based, transdisciplinary learning, our teachers collaboratively planned the program of inquiry for our school using the IB standards of practice as a guideline to make sure we were implementing all requirements. In PAR Cycle One during class observations, the leadership team noticed that although the transdisciplinary themes were present in all classes, there was a lack of depth concerning conceptual understanding. The leadership team decided that the second in-house workshop would be "Concept-Based Learning." The workshop, held at the beginning of academic year 2018-2019, increased our understanding of how to connect the concepts across specialty classes and in the transdisciplinary themes. Our program was and continues to be successful due to the theoretical knowledge that the IB workshops provided and the experiential learning of co-constructing our curriculum. The workshops provided our teachers with a common vision to create a cohesive curricular plan. As we have implemented the IB program, teachers have reported positive changes in student learning. The leadership team planned and requested in-house IB workshops based on the needs for improvement in practice.

Collaboration meetings. One of the main changes since PAR Cycle One is fully embedding collaboration in our school. Grade-level collaboration was structured in the schedule

at the beginning of the project. "The collaborative, inquiry-action cycle is grounded in the belief that successful leaders for instructional improvement cannot operate in isolation (Militello et al., 2009, p. 29). Collaboration was brought into our school at grade levels, by departments and school wide and in flexible, interest-based focus groups for policy writing and events.

Grade-level collaboration was structured in the schedule at the beginning of the project and teachers' timetables reflected this change. Each grade-level team met weekly and brainstormed, planned lessons, wrote units of study, and reflected on student learning. The collaboration time was not only to plan but to improve the lessons and students' experience. Whole school collaboration has been part of the PAR for three cycles—particularly developing the program of inquiry, embedding conceptual understanding, and developing scopes and sequences. Wells Bang Na formed flexible focus groups during PAR Cycle Two. IB required that Wells Bang Na have a language policy, an assessment policy, and a special needs policy. Previously, Wells Bang Na did not have any of these documents. Prior to our journey to become a PYP school, Wells did not have a policy that indicated different levels of supports that we can provide for students in need. When we wrote our policy, we stated that we can support students that have learning needs in an inclusive classroom; however, we did not previously support individualized education plans or one-on-one teaching. We changed our policy this year to state that on a case-by-case basis, we can support students with special needs with one-on-one teachers and individualized education plans.

Summary of Leadership Growth

In each cycle, we collaborated and worked together to build the program of inquiry, units of study, and reflect on our practice and the students' learning. In PAR Cycle Two, we wrote policies for IB including a language policy, an assessment policy, and a special educational

needs policy. I tried to instill a distributed leadership model and supported teacher leaders to take control of certain initiatives. In the PAR Cycles Two and Three many teachers led different initiatives. For example, as teachers took responsibility for displays, they felt empowered to make positive changes in our school. However, we needed to develop stronger collaborative guidelines for the process. There is a fine line between empowering teachers while maintaining authority. Towards the end of the PAR, I felt more confident having difficult conversations and holding teachers accountable when needed.

One major realization that developed over the course of this PAR is that leadership is a balance between empowering teachers to lead in some instances but knowing when to be authoritative; toggling between the two approaches is a challenge for a school leader. In Chapter 6, I argued that McGregor's theory X and theory Y has an impact on how managers see their employees; according to theory Y, if managers believe that their staff can make their own decisions and empower and revere employees, then the employees rise to the occasion and work with passion and integrity. This has been partially evident at Wells International School Bang Na; however, it is important in the hiring process to make sure that new teachers are self-starters who work hard and always put students at the center of their work to make positive changes at school. For small schools that are growing, transitioning, or building a culture and curriculum, it is important to hire teachers who are aligned pedagogically with the approach to education, are confident being leaders in different capacities, and accept change. If a teacher is not passionate about student learning, then McGregor's theory Y does not fully apply.

Finally, I learned that a principal's mental state contributes to the school culture. At the end of PAR Cycle Three, when I broke my ankle, the tone of the entire school changed. The school principal is the person who sets the tone for the school and models' acceptance of change,

a willingness to learn, and a belief in possibilities; however, teachers also must have these characteristics for positive change.

The PAR at Wells International School was successful in creating a cohesive community of learners. The efforts the teachers have put forth to collaboratively build our program have improved classroom instruction and instilled a sense of community. Our teachers, students, and parents are satisfied with the implementation of the IB PYP program which has led to curricular cohesion and increased enrollment. I have learned to achieve a balance of knowing when to use a distributed leadership and when to be authoritative. Using a distributed leadership model encouraged teachers to adopt leadership roles in their areas of expertise. The process of implementing IB involved all the members of our community and we were all active participants. As a result of our hard work our school is thriving and growing.

Conclusion

The culmination of our teachers' and leaders' efforts in co- creating our curriculum and program while transitioning to the IB PYP education model was on January 28th and 29th of 2019 when the IB verification team visited our school. The IB authorization team assessed our school practices, standards, policies, pedagogical beliefs, collaboration processes, and student learning. They conducted interviews with students, parents, teachers, the leadership team and the school owners. They observed student learning and instructional practices of teachers. The preliminary findings included commendations and recommendations for our school. They found that IB set a tone and direction for development resulting with a strong curriculum. Wells had strong professional development (internal and external). Collaboration was present in our program; however, one recommendation was to have a more structured model for collaboration. They found that our parents deeply appreciate our teachers and have sound knowledge about the IB

PYP due to parent education. Our parents noticed a change in their children regarding inquisitiveness and questioning the world around them. Students said they were happy at our school, and the learner profile was evident in our curriculum. However, the IB team shared their findings of growth areas that need to be addressed: collaboration and attention to inquiry-based instruction need to be more effective, intentional and structured; assessment policy should be more clearly defined and aligned; stronger inclusion of mother tongue is required; and enough resources to implement the IB curriculum need attention.

Revisiting my initial overarching question: How does inquiry-based pedagogy inform teacher practice? like the cycle of inquiry, the PAR cycles are generative with continuous improvement as the goal. The PAR project verified that inquiring into our practice as teachers, facilitating as leaders, and our co-creation of knowledge as a community is an iterative process for improvement. Our CPR team, teachers, students, parents and community became active members in the process of improving our school collaboratively through inquiry-based pedagogy. Through this process, our community has embraced the concept of lifelong learning. The IB verification visit and the PAR offer a guidepost in the road to inform a learning journey that is far from over.

REFERENCES

Aguilar, E. (2017). *The art of coaching teams*. San Francisco: Jossey-Bass.

Ausubel, L. M. (2004). An efficient ascending-bid auction for multiple objects." *American Economic Review*, *94*(5), 1452-1475.

Anderson, L. W., Krathwohl, D. R., & et al. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.

Babin, R., & Roades, L. (2015). International baccalaureate primary years programme category 3S: Inquiry in the primary years programme IBO.

Benjamin, S. (1989). An ideascape for education: What futurists recommend. *Educational Leadership*, *47*(1).

Bolman, L. G., & Deal, T. E. (2017). *Reframing organizations: Artistry, choice, and leadership*. Hoboken: John Wiley & Sons Inc.

Bose, B., Ancin, D., Frank, J., & Malik, A. (2017). Teaching transformative life skills to students: A comprehensive dynamic mindfulness curriculum. Evidence-based lessons in stress resilience, self-awareness, emotion regulation, and healthy relationships.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn brain, mind, experience, and school.* Washington DC: National Academy Press.

Bruner, J. (1971). *The relevance of education*. New York, NY: Norton & Co.

Bruner, J. (1977). *The process of education*. Cambridge, MA: Harvard University Press.

Bryk, A. S., Gomez, L., Grunow, A., & LeMahieu, P. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard University Press.

Canter, M., & Brunar, C. (2011). Transdisciplinary niches fostering lifelong learning. *Procedia-Social and Behavioral Sciences*, *28*, 636-639

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA, US: Sage Publications, Inc.

Creswell, J. (2014). *Research design*. Thousand Oaks, CA: Sage Publications, Inc.

Day, C., Townsend, A., Knight, R., & Richardson, K. (2016). *Research summary- school leadership in the primary years programme*. The University of Nottingham: International Baccalaureate Organization. Retrieved from https://www.ibo.org/contentassets/af50aa7dc14a4ce4bcc4381dd706c415/pyp-leadership-summary-eng.pdf

Dewey, J. (1938). *Experience and education*. New York, NY: Macmillan.

Drago-Severson, E. (2009). *Leading adult learning: Supporting adult development in our schools.* Thousand Oaks, CA: Corwin.

Education World. (2017). Curriculum mapping. In *Professional Development, Virtual Workshop*. Retrieved from http://www.educationworld.com/a_curr/virtualwkshp/curriculum_mapping.shtml

Freire, P. (1970). *Pedagogy of the oppressed* (18th ed.). Harvard Press.

Gibbs, G. (2002). *Qualitative data analysis*. Los Angeles, CA: Sage.

Goldstein, D. (2014). *The teacher wars: A history of America's most embattled profession*. New York, NY: Penguin Random House

Grissom, J. A., Loeb, S., & Master, B. (2013). Effective instructional time use for school leaders: Longitudinal evidence from observations of principals. *Educational Researcher, 42*(8), 433–444. Retrieved from https://doi.org/10.3102/0013189X13510020

Halverson, R. (2003). Systems of practice: How leaders use artifacts to create professional

      community in schools. *Education Policy Analysis Archives*, *11*(37). Retrieved from

      http://dx.doi.org/10.14507/epaa.v11n37.2003

Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every*

      school. New York: Teachers College Press.

Hargreaves, A., & Shirley, D. (2009). *The fourth way*. Moorabbin, Vic.: Hawker Brownlow

      Education.

Hemelt, S. (2014). The impact of International Baccalaureate's Primary Years Program (PYP) on

      student performance from Michigan and North Carolina (Primary Years Program

      Studies). Retrieved from http://www.ibo.org/en/about-the-ib/research/research-

      resources/. University of Chapel Hill.

hunter, l., emerald, e., & Martin, G. (2013). *Participatory action research in a globalized world.*

      Social change through the cultural professions. Dordrecht: Springer.

International Baccalaureate. (n.d.). *Benefits of IB for students*. Retrieved from

      http://www.ibo.org/benefits/benefits-for-students/

International Baccalaureate. (2012). *Developing a transdisciplinary programme of inquiry.*

      Cardiff, Wales: UK. Retrieved from

      https://mtpyph.weebly.com/uploads/9/0/6/9/9069240/developing_a_td_poi.pdf

International Baccalaureate. (2013). *History of the primary years programme*. Cardiff, Wales:

      UK.

International Baccalaureate. (2017). *What is an IB education?* Cardiff, Wales: UK.

International Baccalaureate. (2018). Retrieved from

    http://blogs.ibo.org/sharingpyp/files/2017/09/FINAL-TEXT-Preparing-for-the-enhanced-

    PYP.pd

Jacobs, H. H. (1997). *Mapping the big picture: Integrating curriculum and assessment K-12*.

    Alexandria, Virgo: Association for Supervision and Curriculum Development

Jennings, P. A., Frank, J. L., Snowberg, K. E., Coccia, M. A., & Greenberg, M. T. (2013).

    Improving classroom learning environments by cultivating awareness and resilience in

    education (CARE): Results of a randomized controlled trial. *School Psychology*

    Quarterly, 28(4), 374–390.

Kaufman, D. (2003). ABC of learning and teaching in medicine: Applying educational theory in

    practice. *BMJ*, *326*(7382), 213-216. Retrieved from

    http://dx.doi.org/10.1136/bmj.326.7382.213

Kitsantas, A., & Miller, A. (2015). *Characteristics and context of primary years program*

    students' self-efficacy and self-regulatory development. George Mason University,

    College of Education and Human Development

Knowles, M. (1980). *The modern practice of adult education*. New York, NY: The Adult

    Education Co.

Koppang, A. (2004). Curriculum mapping: Building collaboration and communication.

    Intervention in School and Clinic, *39*(3), 154-161. Retrieved from

    http://dx.doi.org/10.1177/105345120

Louis, K. S., Marks, H. M., Kruse, S. D., & Educational Resources Information Center (U.S.). (1994). *Teachers' professional community in restricting schools*. Washington, DC: U.S. Dept. of Education, Office of Educational Research and Improvement, Educational Resources Information Center.

Louis, K. S., Kruse, S. D., & Bryk, A. (1994). *Professionalism and community: Perspectives on reform in urban schools*. Wisconsin Center for Education Research, & Wisconsin Center for Education Research.

Lieberman, A. (1995). Practices that support teacher development: Transforming conceptions of professional learning. *Phi Delta Kappan, 76,* 591-596.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

Little, J. W., & National Education Association of the United States. (2006). *Professional community and professional development in the learning-centered school*. Washington, DC: National Education Association.

MacGregor, D. (2006). *The human side of enterprise-annotated version*. McGraw- Hill Education.

MacDonald, J. P. (1996). *Redesigning school: Lessons for the 21st century*. San Francisco: Jossey-Bass.

Maslow, A. H. (2015). *A theory of human motivation*. United States: BN Publishing.

Militello, M., Rallis, S., & Goldring, E. (2010). *Leading with inquiry & action*. Moorabbin, Vic.: Hawker Brownlow Education.

Mills, M. S. (2001). Ensuring the viability of curriculum mapping in a school improvement plan. Retrieved from https://www.mindfulschools.org/about-mindfulness/research/

Mishra, P., Koehler, M., & Henriksen, D. (2011). The seven trans-disciplinary habits of mind: Extending the TPACK framework towards 21st century learning. *Educational Technology, 51*(2), 22-28. Retrieved from http://www.jstor.org/stable/44429913

Sachs, J. (2000, January 1). The activist professional. *Journal of Educational Change, 1*(1), 77-94.

Schwartz, M. (2015). Mind, brain and education: A decade of evolution. *Mind, Brain, and Education, 9*, 64-71. doi:10.1111/mbe.12074

Sillisano, J. R. & et al. (2010). *Evaluation of International Baccalaureate Programmes in Texas schools.* College Station, Texas: State of Texas Education Research Center.

Skerrett, A. (2010). There's going to be community. There's going to be knowledge: Designs for learning in a standardized age. *Teaching and Teacher Education*, *26*(3), 648-655. Retrieved from http://dx.doi.org/10.1016/j.tate.2009.09.017

Spillane, J. P. (2012). *Distributed leadership*. Hoboken: Wiley.

Spillane, J., & Coldren, A. (2011). *Diagnosis and design for school improvement*. New York, NY: Teachers College Press.

Spillane, J. P., & Diamond, J. B. (2007). *Distributed leadership in practice*. New York: Teachers College Press.

Spillane, J. P., Halverson, R., & Diamond, J. B. (2001). Investigating school leadership practice: A distributed perspective. *Educational Researcher*, *30*(3), 23–28.

Stringer, E. (2014). *Action research*. Los Angeles, CA: Sage.

Tyack, D., & Cuban, L. (2001). *Tinkering toward utopia: A century of public school reform*. Cambridge, MA: Harvard University Press.

Velasco, C. (2009). *Tracking, tethering and transfer: The expedition of a second grade team* (master's theses). University of California, Berkeley.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* Cambridge, MA: Harvard University Press.

Warde, W. (1960). John Dewey's theories of education. *International Socialists Review, 21*. Retrieved from https://www.marxists.org/archive/novack/works/1960/x03.htm

Whitford, B., & Wood, D. (2010). *Teachers learning in community*. Albany, NY: SUNY Press.

APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office 252-744-2914 @ · Fax 252-744-2284 @ · www.ecu.edu/ORIC/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Kristin Halligan
CC:
         Matthew Militello
Date: 9/7/2017
Re: UMCIRB 17-001475
         TRANSDISCIPLINARY INQUIRY: COLLABORATIVE CURRICULUM DEVELOPMENT AND IMPLEMENTATION

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 9/6/2017 to 9/5/2018. The research study is eligible for review under expedited category #6, 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Adult Consent Form	Consent Forms
Approval for Research Study (1).pdf	Additional Items
Child Assent Form	Consent Forms
Focus Group Students	Interview/Focus Group Scripts/Questions
Focus Group Teachers	Interview/Focus Group Scripts/Questions
Parental Permission for Child Consent form	Consent Forms
TRANSDISCIPLINARY INQUIRY: COLLABORATIVE CURRICULUM DEVELOPMENT AND IMPLEMENTATION	Study Protocol or Grant Application

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: SCHOOL APPROVAL LETTER

Wells International School

June 20, 2017

To Whom It May Concern:

Wells International School recognizes the benefits of participating in relevant, well-designed research studies proposed by qualified individuals. Approval for conducting such studies is based primarily on the extent to which substantial benefits can be shown for Wells International School and its mission of educating students. The purpose of this letter is to notify you of the approval to use conduct your dissertation study titled, "Improving Student Learning through Inquiry" with participants in our schools. We also give permission to utilize the following spaces at Wells International School to collect data and conduct interviews for her dissertation project: Improving Student Learning through Inquiry

The project meets all of our school/district guidelines, procedures, and safeguards for conducting research on our campus. Moreover, there is ample space for Kristin Halligan to conduct her study and her project will not interfere with any functions of Wells International School. Finally, the following conditions must be met, as agreed upon by the researchers and Wells International School:

➢ Participant data only includes information captured from the state data collection strategies.

➢ Participation is voluntary.

➢ Participants can choose to leave the study without penalty at any time.

➢ Any issues with participation in the study are reported to the school administration in a timely manner.

➢ An executive summary of your findings is shared with the school administration once the study is complete.

In addition to these conditions, the study must follow all of the East Carolina University IRB guidelines. We are excited to support this important work.

Respectfully,

Dr. Chang Yao-Lang

Chairman, Wells International School

APPENDIX C: ADULT CONSENT FORM

East Carolina University	Transdisciplinary Inquiry: Collaborative Curriculum Development and Implementation

Principal Investigator: Kristin Halligan under the guidance of Dr. Matthew Militello
Dr. Militello: Institution, Department or Division: College of Education
Address: 220 Ragsdale, ECU, Greenville, NC 27858
Telephone #: (919) 518.4008

Why am I being invited to take part in this research?

The purpose of this research is to align our curricular development and teaching practices with the International Baccalaureate learner profile attributes, attitudes, concepts, and skills; document and analyze the evidence from each cycle of inquiry to adjust our implementation; and share the results of the third grade focused study with teachers as the entire school including teachers, staff and students can benefit as we implement a transdisciplinary inquiry based curriculum at Wells International School Bang Na.

Are there reasons I should not take part in this research?

There are no known reasons for why you should not participate in this research study.

What other choices do I have if I do not take part in this research?

You can choose not to participate.

Where is the research going to take place and how long will it last?

The research will be conducted at your school. The amount of time you will be asked to volunteer will be included in school hours.

What will I be asked to do?

If you agree to participate in this study, you may be asked to participate in interviews and a focus group. If you want to participate in an interview but do not want to be audio recorded, the interviewer will turn off the audio recorder. Interview questions will focus on the process of developing curriculum at grade 3 level as a collaborative team.

What might I experience if I take part in the research?

We do not know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We do not know if you will benefit from taking part in this study. There may not be any personal benefit to you, but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?

We will not be able to pay you for the time you volunteer while being in this study.

Will it cost me to take part in this research?

It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

ECU and the people and organizations listed below may know that you took part in this research

and may see information about you that is normally kept private. With your permission, these

people may use your private information to do this research:

●   Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
●   The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.

How will you keep the information you collect about me secure? How long will you keep it?

The information in the study will be kept confidential to the full extent allowed by law. Confidentiality will be maintained throughout the data collection and data analysis process. Consent forms and data from interviews and focus groups will be maintained in a secure, locked

location and will be stored for a minimum of three years after completion of the study. No reference will be made in oral or written reports that could link you to the study.

What if I decide I do not want to continue in this research?
You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions? The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator.

Kristin Halligan
kristinhalligan@gmail.com
(66) 0809649105
If you have questions about your rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2941 (days, 8:00 am – 5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC at 252-744-1971.

I have decided I want to take part in this research. What should I do now?
The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:
● I have read (or had read to me) all the above information.
● I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
● I know that I can stop taking part in this study at any time.
● By signing this informed consent form, I am not giving up any of my rights.
● I have been given a copy of this consent document, and it is mine to keep.

Participant's Name (PRINT)   **Signature**   **Date**

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above and answered all of the person's questions about the research.

Person Obtaining Consent (PRINT)   **Signature**   **Date**

APPENDIX D: CHILD CONSENT FORM

East

Carolina University

Parental/Legal Guardian Permission to Allow Your Child to Take Part in Research
Information to consider before allowing your child to take part in research that has no more than minimal risk.

Transdisciplinary Inquiry: Collaborative Curriculum Development and Implementation

Principal Investigator: Kristin Halligan under the guidance of Dr. Matthew Militello
Dr. Militello: Institution, Department or Division: College of Education
Address: 220 Ragsdale, ECU, Greenville, NC 27858
Telephone #: (919) 518.4008

Participant Full Name: _____Date of Birth: _____

Researchers at East Carolina University (ECU) study issues related to society,

health problems, environmental problems, behavior problems and the human condition.

To do this, we need the help of volunteers who are willing to take part in research.

Why is my child being invited to take part in this research?

The purpose of this research is to align our curricular development and teaching practices with the International Baccalaureate learner profile attributes, attitudes, concepts, and skills; document and analyze the evidence from each cycle of inquiry to adjust our implementation; and share the results of the third grade focused study with teachers so that the entire school can benefit from implementation the IB PYP program at Wells International School Bang Na.

Are there reasons my child should not take part in this research?

There are no known reasons for why you should not participate in this research study.

What other choices do I have if my child does not take part in this research?
Your child can choose not to participate.

Where is the research going to take place and how long will it last?
The research will be conducted at your child's school during the school day. Students will create digital portfolios in order to display student work. Students will also be asked interview questions in a group setting. These interviews will take approximately 30 minutes in the students' classroom three times within the school year.

What will my child be asked to do?
Your child will be asked to do the following:

If you agree to participate in this study, you may be asked to participate in one or more surveys, interviews and focus groups. Interviews and focus groups will be audio/video recorded. If you want to participate in an interview but do not want to be audio recorded, the interviewer will turn off the audio recorder. If you want to participate in a focus group but do not want to be video recorded, you will be able to sit out of field of view of the video camera and still be audio recorded. Survey, interview, and focus group questions will focus on the leadership of teaching and learning as it relates to instructional practices using transdisciplinary inquiry-based curriculum in the classroom.
These sessions will be audio recorded. The recordings will be stored using students' ID numbers only in order to maintain confidentiality. Electronic files will be password-protected. You can choose to opt out of any audio recording.

Data collected in hard copy form will be stored in locked filing cabinets. All data will be accessible to the research team exclusively.

What might I experience if I take part in the research?
We do not know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We do not know if you will benefit from taking part in this study. There may not be any personal benefit to you, but the information gained by doing this research may help others in the future.

Will my child be paid for taking part in this research?
We will not be able to pay you or your child for the time you volunteer while being in this study.

Will it cost me anything for my child to take part in this research?
It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

ECU and the people and organizations listed below may know that your child took part in this research and may see information about your child that is normally kept private. With your permission, these people may use your child's private information to do this research:

The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your child's welfare during this research and may need to see research records that identify your child.

How will you keep the information you collect about my child secure? How long will you keep it?
The information in the study will be kept confidential to the full extent allowed by law. Confidentiality will be maintained throughout the data collection and data analysis process. Information gathered from the interview will be maintained in a secure, locked location and will be destroyed upon successful completion of the study. No reference will be made in oral or written reports that could link you to the study.

What if my child decides he/she doesn't want to continue in this research?

Your child can stop at any time after it has already started. There will be no consequences if he/she stops and he/she will not be criticized. Your child will not lose any benefits that he/she would normally receive.

Who should I contact if I have questions?

The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator- Kristin Halligan at 66-0809649105 or kristinhalligan@gmail.com

If you have questions about your child's rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971.

I have decided my child can take part in this research. What should I do now?
The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

● I have read (or had read to me) all of the above information.
● I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
● I know that my child can stop taking part in this study at any time.
● By signing this informed consent form, my child is not giving up any of his/her rights.
● I have been given a copy of this consent document, and it is mine to keep.

_____ _____
Parent's Name (PRINT) Signature   Date

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above and answered all of the person's questions about the research.

_____
Person Obtaining Consent (PRINT) Signature Date

Transdisciplinary Inquiry:
Collaborative Curriculum Development and Implementation
Focus Group Protocol

Introduction

Thank you for taking time from your busy schedules to meet with me today. I appreciate your willingness to participate in this focus group interview and will limit the time to one hour.

My name is Kristin Halligan. I will serve as the moderator for the interview with assistance from who will record notes. I am conducting research as a doctoral student at East Carolina University. The purpose of this research is to align our curricular development and teaching practices with the International Baccalaureate learner profile attributes, attitudes, concepts, and skills; document and analyze the evidence from each cycle of inquiry to adjust our implementation; and share the results of the third grade focused study with teachers as the entire school including teachers, staff and students can benefit as we implement a transdisciplinary inquiry based curriculum at Wells International School Bang Na.

Disclosures:
● Your participation in the study is <u>voluntary.</u> It is your decision whether or not to participate and you may elect to stop participating in the interview at any time.
● The interview will be <u>digitally recorded</u> in order to capture a comprehensive record of our conversation. All information collected will be kept <u>confidential.</u> Any information collected during the session that may identify any participant will only be disclosed with your prior permission. A coding system will be used in the management and analysis of the focus group data with no names or school identifiers associated with any of the recorded discussion.
● The interview will be conducted using a semi-structured and informal format. Several questions will be asked about both the individual knowledge and skills gained, and the organization practices used. It is our hope that everyone will contribute to the conversation.
● The interview will last <u>approximately one hour.</u>

Interview Questions

TURN RECORDER ON AND STATE THE FOLLOWING:
"This is *(Your Name),* **interviewing** *(School Name)* **on** *(Date)* **for the Evaluation Capacity Building Problem of Practice Study.**

Focus Group:

       To begin the conversation, please introduce yourself and describe your role on the leadership team and involvement in implementing the digital learning project at your school. Start with first person to the right and continue left till all participants have introduced themselves.

Question #1 – What new information or curriculum development skills did you learn or improve upon while participating in the project?

Question #2 – How did your participation as a collaborator in creating new curriculum inform your classroom teaching practice?

Question #3 – How did your participation in the process of curriculum development aid in classroom implementation of the transdisciplinary program?

Questions #4 – What programmatic improvements were made during the project as a result of your evaluation findings?

Question #5 – How was the curriculum used to improve instructional practice? What value does that add to your school?

Question #6 – In what ways did the principal/leadership support you in the process of curriculum development?

APPENDIX F: FOCUS GROUP PROTOCOL STUDENT

Transdisciplinary Inquiry:
Collaborative Curriculum Development and Implementation
Focus Group Protocol Student

Thank you for taking time from your busy schedules to meet with me today. I appreciate your willingness to participate in this focus group interview and will limit the time to one hour.

My name is Kristin Halligan. I will serve as the moderator for the interview. I am conducting research as a doctoral student at East Carolina University. The purpose of this research is to align our curricular development and teaching practices with the International Baccalaureate learner profile attributes, attitudes, concepts, and skills; document and analyze the evidence from each cycle of inquiry to adjust our implementation; and share the results of the third grade focused study with teachers as the entire school including teachers, staff and students can benefit as we implement a transdisciplinary inquiry based curriculum at Wells International School Bang Na.

Disclosures:
- Your participation in the study is <u>voluntary.</u> It is your decision whether or not to participate and you may elect to stop participating in the interview at any time.
- The interview will be <u>digitally recorded</u> in order to capture a comprehensive record of our conversation. All information collected will be kept <u>confidential.</u> Any information collected during the session that may identify any participant will only be disclosed with your prior permission. A coding system will be used in the management and analysis of the focus group data with no names or school identifiers associated with any of the recorded discussion.
- The interview will be conducted using a semi-structured and informal format. Several questions will be asked about both the individual knowledge and skills gained, and the organization practices used. It is our hope that everyone will contribute to the conversation.
- The interview will last <u>approximately one hour.</u>

Interview Questions

TURN RECORDER ON AND STATE THE FOLLOWING:
    "This is *(Your Name),* **interviewing** *(School Name)* **on** *(Date)* **for the Evaluation Capacity Building Problem of Practice Study.**

Focus Group:

To begin the conversation, please introduce yourself and describe your role on the leadership team and involvement in implementing the digital learning project at your school. Start with first person to the right and continue left till all participants have introduced themselves.

Question #1 – How did the process of creating a digital portfolio enhance your learning?

Question #2 – What do the highlights of your learning experience this semester?

Question #3 – What was your favorite unit of learning this semester? Why?

Question #4- What primary years programme learner profile attributes and attitudes do you think are important? Why?

APPENDIX G: FOUR SQUARE REFLECTION

Kristin Halligan

Four Square Reflection Tool

What happened?	How do I feel?
reflections Ms Kal being part of the meetings very useful. to tie in their classes. Kids are benefiting from the collaboration program.	positive about the process, however would like to be more intentional about the learning outcomes embed LP, Skills, Attitude, concepts by stating it on the board
Ideas?	**Questions?**
Set an agenda each week and send it out. (grade team)	How do we make our collab. time more meaningful? what mini goals can we focus on each week?

APPENDIX H: EDUCATION JOURNEY LINES FROM CPR GROUP INDICATE LEARNING STYLES AND PEDAGOGICAL BELIEFS OF THE GROUP

Andri's

Experience and Education Journey Line

In your life you have engaged as a learner...from your earliest moments you have come to know new things and been exposed to information and ideas...from formal schooling to informal learning...from kindergarten to university you have learned many different subjects in many different styles...think of the times in your life when you have learned deeply...

What are the experiences in formal education and informal education experiences that have been most important in your professional and personal learning and growth?

- Chart these on the graph below (formal chart on top/informal on bottom).
- Choose one experience about which you tell a story to a partner.
- Why was this experience important to your learning?

Formal Education Experiences	*I remember one of my elementary teacher saw a textbook she actually was working on a sad part of the book*		*Group activities*	*I am learning a lot teaching my classes and teaching different grade levels.* Kinesthetic
Informal or Out of School Experiences (i.e., travel, organizations)	*a lot of extra curricular activities by watching and participating in early sports and activities*	*lots of hands on learning and during my internship. I was able to learn most during my internship than classes because mostly teach give feedback*		*writing notes on my phone* technology
Time of Life	K-5	6-12	Bachelor Degree	Graduate	Professional Experience

APPENDIX I: SIMPLE RECORDING CHART FOR PYP ELEMENTS

Topic	Color code
Learner Profile	
Key Concepts	
Transdisciplinary Themes (Content)	
Skills	
Attitudes	
Assessment	

Date		Color code
9/20/2017	In the 3rd grade collaboration meeting today we focused on the key concepts that were coming up in the next unit. In order to help the specialist teachers, develop a deeper understanding of these concepts we did a think-pair- share on them. The concepts were Form, Change, and Causation. We used a basketball as an example. Teacher first wrote down as much as they could about the form of a basketball. Then they wrote down how a basketball can change. For causation they referred to both the change and the form and wrote down the cause(s) of that change or form. Teachers then shared what they wrote. After we discussed how there were so many different examples of the form of a basketball when it is a fairly simple object. Also, we talked about how the key concepts are such an integral part of student learning and our units of inquiry.	

APPENDIX J: PHOTOGRAPHS OF PARENT MEETINGS