# An Analysis of the Primary Years Programme as a Socio-constructivist Curriculum Model

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Abstract

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The purpose of the study was to determine whether the PYP curriculum contains the elements of an authentic socio-constructivist pedagogical model. Vygotsky's historical-sociocultural research became the principal work through which the related principles of learning and teaching were identified. The theories that guided this study focused on the development of the child as a member of a learning community, the role of the teacher as a conduit for cognitive and metacognitive development, and the pedagogical elements of the classroom environment that contribute to developmentally appropriate practice (DAP). In order to undertake this research, the senior kindergarten (K2) level of Uptown Primary School was selected as the setting. In order to ascertain the PYP's compatibility with socio-constructivism, several procedures were done that included a Comparison Chart of Perspectives (CCP), a Micro-analysis of a K2 Unit of Inquiry planner, and the assessment of the participants' educational values and beliefs, in addition, to their perceptions of teacher practices. Findings from this study suggest that the PYP's pedagogical framework is structured according to the philosophy and practices of an authentic socio-constructivist model, one that is based on the holistic development of the child, a child-centered and interactive pedagogy, and learning as a sociocultural endeavour.

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## Thesis Statement

As an individual who has been involved in education for the past thirty years and who has had the opportunity to experience first-hand many of the reforms that have shaped education in Quebec, I was interested in learning about the theories and practices that were the driving force behind the educational evolution, those of "constructivism" and "socio-constructivism".

My primary motivation for doing so was to refine my role as a partner in the learning process by acquiring a more profound understanding of the elements that contribute to the cognitive and metacognitive growth of the individual. It was, and still is, my commitment to hone my skills as a guide in the learning environment, to become adept at supporting my students' needs and their learning styles, and to create a stimulating milieu in which they can flourish. Moreover, this goal led me to the main concern of this thesis. If socio-constructivism is the modus operandi for the most significant educational reforms to date in Quebec, what are the pedagogical elements that comprise it? Which model of education exemplifies socio-constructivist beliefs and practices?

As I reflected on these questions, I wondered whether my teaching experience at the Primary Years level in an International Baccalaureate (IB) school in the Middle East could provide some of the answers. The Primary Years Programme (PYP) constitutes part of the IB model of education that forms a coherent sequence of education from pre-kindergarten through the pre-university levels. It is comprised of a curriculum for children enrolled in grades one through five specifically and includes two early childhood levels, K1 and K2. Two other programmes form part of the IB: the Middle Years

Programme (MYP), which consists of a curriculum for students in grades six through ten, as well as, the Diploma Programme for students between the ages of 16 and 19.

According to proponents of the IB model of education, the IB programme is designed to promote the values and theoretical tenets of constructivism (*Making the PYP happen*, 2007, p. 6). It is grounded in the belief that all learners must construct knowledge in an active and developmentally appropriate manner. After two years of professional development and teaching at the primary level in an IB setting, I questioned whether, in fact, the IB curriculum model also upholds the philosophy of socio-constructivism through its pedagogical content and teaching practices. As one of the goals of this thesis, this assertion will be investigated.

With this in mind, the purpose of this study is to examine the following guiding questions: What socio-constructivist theoretical tenets contribute to teaching and learning theories? Of these, which ones have been applied to the International Baccalaureate Primary Years Programme? And, more specifically, which principle tenets of socio-constructivism have been implemented at the kindergarten (K2) level of the Primary Years Programme at Uptown Primary School?

For the purpose of simplicity, both the teacher and the child will be referred to in the feminine gender throughout the thesis.

## Socio-constructivism: A Theoretical Framework

In order to fully comprehend the term "socio-constructivism", one must examine the theoretical tenets and the conceptual framework that define it. This will enable one to better understand the requisite practices for structuring and implementing a socio-constructivist classroom environment. While many researchers share the opinion that there is a lack of a central approach which identifies socio-constructivism, its influence has been pervasive. From instructional design, teaching techniques, to assessment forms, it has had far reaching effects in curricula where authentic learning takes place and is valued.

The socio-constructivist approach to teaching and learning is firmly grounded in specific psychological foundations that espouse theories about how the individual acquires, refines, and consolidates her knowledge and understanding of the world. Its contemporary pedagogical form has evolved from a diversity of principles rooted in the Vygotskian socio-historical-cultural paradigm of learning (Daniels 2001; Kozulin, 1998; Wertsch, 1985). Social constructivist theorists are concerned with the effects of the social context on the individual's construction of knowledge. From their perspective, learning is a socially mediated experience through which individuals construct knowledge within their own cultural environment (Jaramillo, 1996; Kozulin & Presseisen, 1995; Oxford, 1997; Reynolds, Sinatra, & Jetton, 1996; Rice & Wilson, 1999; Vygotsky, 1978).

Primarily, the socio-constructivist theoretical paradigm provides educators and others with a basis for understanding how the individual constructs knowledge and develops from all of its referents: affective, cognitive, intellectual, moral and social. Each of these domains is essential to the growth of the individual as a learner and a valued

member of a community. Socio-constructivist theories assist educators with the creation of a learning environment in which both the student and teacher work in tandem to facilitate the construction of knowledge and the development of metacognitive skills. The ideological premise of socio-constructivism is manifested in classrooms where children actively engage in learning through observation, questioning, documenting, and reflecting (Branscombe, Castle, Dorsey, Surbeck, & Taylor, 2000; Olsen, 1999). Within these settings, the teacher is reflective about her role in the classroom, one in which learning is viewed as "construction and teaching as a facilitating process to enhance and enrich development" (Fosnot, 1989. p. xi).

The central purpose of socio-constructivist principles, therefore, is to assist educators in generating and refining teaching strategies that will help transform the learning environment from a teacher-centered one to a learner-centered one. Education, once relegated to the teaching of discipline-specific knowledge, has become enhanced with multiple perspectives of learning and an interdisciplinary approach to curriculum development. Rote learning has been replaced with the promotion of higher-order thinking skills, self-efficacy, and responsibility for one's learning. Through a problem-centered approach of broad concepts and interdisciplinary themes, the learner actively engages in learning and experiences cognitive growth (Liaw, 2001).

From the socio-constructivist perspective, several principles of knowledge construction are taken into account. To begin with, knowledge must be mediated by real life experiences. Individuals must construct their knowledge by drawing from personal experiences during their interactions with the external world (Liaw, 2001; Packer & Goicoechea, 2000). In so doing, the student's past experiences come to the fore as she is

encouraged to actively participate with peers. It is the learner's personal experiences that enable her to refine her existing knowledge. For learning to take place, moreover, it must also be meaningful rather than comprise a mere collection of de-contextualized facts that have no bearing on the child's interests and abilities (Short & Burke, 1991). Furthermore, it must enable the child to explore and come to an understanding of the concepts without being given the correct answer. It must dispel the idea that all questions have one answer, a correct one, or that all problems can be solved in the same manner. In addition, for students to construct knowledge, they must be exposed to multiple views of a concept or an issue. Most importantly, it is essential that knowledge be constructed in an active manner in order to be meaningful to the child (Bodrova & Leong, 1996; Marlowe & Page, 2005; Newman, Griffin, & Cole, 1989; Vygotsky, 1986).

When considering these tenets, it is important to take note of another perspective that is pertinent to socio-constructivism, that of the "constructivist teaching fallacy" (Mayer, Akamatsu, & Stewart, 2002). That is, it should not be assumed that the only way to provide effective learning is exclusively through hands-on, active engagement on the part of the student. Authentic learning does not necessitate active methods of teaching alone. Rather, it posits a combination and varied selection of instructional methods and activities as well. Thus, as Mayer and colleagues (2002) state: "A challenge facing educational researchers is to discover instructional methods that promote appropriate processing in learners rather than methods that promote hands-on activity or group discussion as ends in themselves" (p.15).

**Socio-constructivism: A Theory of Development**

A more complete understanding of knowledge construction from the socio-constructivist theoretical perspective necessitates an examination of the theories of cognitive development that shape it. To get to the root of how the individual constructs knowledge necessitates an elaboration of Vygotsky's views of development.

Vygotskian theory takes into account not only that all learning is socially mediated but that it is affected by the child's present and past experiences as an active member of society. From the sociocultural constructivist school of thought, this perspective involves a micro-level of analysis in which the "subject of study is the contextualized individual, embedded within a society and formed through a dialectical relationship with a cultural milieu" (Vadeboncoeur, 1997, p. 27). The social context gives shape to the child's cognitive processes, both in content and process. The child not only acquires knowledge but the manner in which she does is influenced by the culture in which she lives. From Vygotsky's perspective, learning does not occur independently of the social context because the learning experience is not culture-free (Bodrova & Leong 1996; Brooks, 2004; Penuel & Wertsch, 1995; Reynolds, Sinatra, & Jetton, 1996). Rather, development is spurred on by "culturally generated knowledge" through a socially shared process.

According to Palincsar (1998), "…from a Vygotskian perspective, cognitive development is studied by examining the processes that one participates in when engaged in shared endeavors and how this engagement influences engagement in other activities" (p. 353). Vygotsky proposed a dialogical relationship between the individual and the society of which she is a member (Daniels, 2001)**.** That is, all cognitive development is attained in relation to the various social levels in which she participates, such as family,

school, community, and others. Development, which is spurred on through the child's direct forms of adaptation and encounters with the environment, becomes enhanced through psychological means that are socioculturally mediated. Vygotsky (1978) elaborated on these theories in the "general genetic law of cultural development" in which he states, "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, *between* people (*interpsychological*), and then *inside* the child (*intrapsychological*) (p. 57).

During the process of intellectual restructuring of mental schemas, therefore, the child experiences the transformations twice. That is, the individual undergoes cognitive transformations during the reconstruction of external operations from the interpersonal to the intrapersonal level. The first time relates to the interpersonal level as the child interacts with others in a social-cultural context. The child's understanding is shaped as a result of interactions within her specific social context (Vygotsky, 1978). The second time, the intrapersonal level, involves a radical shift inwards during which the child finds herself capable of figuring things out (Vygotsky, 1978). However, it is due to the shared activity at the interpersonal level that the child is provided with a means of facilitating the internalization of mental processes. More specifically, the child uses her acquired mental processes independently after she has participated in learning experiences on a socially shared level.

**Cognitive development and the use of semiotic tools.** Related to Vygotsky's theories of cognitive development was the role of "tools", "signs", and other "semiotic" mechanisms in the development of higher mental functioning (Bodrova & Leong, 1996; Daniels, 2001; Karpov & Haywood, 1998; Tappan, 1998). Although Vygotsky's view of

cognitive development is centered upon the mediation of participants in the individual's social group, embedded in his view of intellectual development is the child's acquisition of tools, both material and psychological. Material tools, such as paper and writing instruments, are tangible; they can be used to assist the individual in carrying out tasks. Psychological tools, on the other hand, include language and related writing techniques or conventions, mathematical systems and symbols, signs, art, maps and others (Vygotsky, 1978). Daniels (2001) interprets the distinction between the two types in the following, "…technical tools are used to bring about changes in other objects. Rather than changing objects in the environment, psychological tools are devices for influencing the mind and behavior of oneself or another" (p.15).

According to Vygotsky, maturation is of major importance for cognitive development. However, it is not the sole determining factor for it; he considered it to be secondary in relation to it. Vygotsky contended that the child can, in fact, acquire knowledge and skills long before development or qualitative changes occur. According to Bodrova and Leong (1996), Vygotsky took into account not only the maturation and experiences of the individual but "the appropriation of mental tools through formal and informal instruction" (p. 17). In this view, the child's biological development and her ability to use tools are of equal importance for the child's learning system to develop. However, in order to acquire higher mental functions, the child must have already assimilated basic culturally transmitted mental tools such as reading and writing. Researchers Karpov and Haywood (1998) elaborated on Vygotsky's concept by stating that, "Adults teach these tools to children in the course of their joint activity, the children

internalize them, and these tools then function as mediators of the children's more advanced psychological processes" (p. 1).

Vygotsky (1978) believed that the internalization of both tool and sign systems such as language and number systems creates "behavioral transformations and forms the bridge between early and later forms of individual development" (p. 7). He considered language to be one of the most culturally significant examples of a universal semiotic tool that is instrumental for learning. Of this, he stated, "the most significant moment in the course of intellectual development, which gives birth to purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge" (Vygotsky, 1978, p. 24).

From the very earliest stages of development, the child learns that the use of semiotic means such as language will greatly assist her in adapting to the environment (Vygotsky, 1978). The child discovers, through her own accord, that the use of signs and tools will enable her to solve tasks, to control and alter the behavior of those around her, as well as, to have an effect upon her immediate environment. As speech and other signs become incorporated with increasing complexity into her repertoire of actions, the child experiences new organizations of behavior. However, prior to mastering her own behavior, the child comes to terms with mastering her environment through the use of speech (Vygotsky, 1978). Practical tasks are accomplished as the child, through the use of both internal and external speech, thinks about how to approach a problem, plans the execution of the task at hand, and then follows through on her intended goal. The child appropriates the use of signs and tools through the combination of speech and action for problem solving and more complex operations over time. A child's speech, posited

Vygotsky (1978), is as important for the attainment of goals as the action itself (p. 25). Thus, the greater in complexity the task, the greater is the function of speech.

Addressing this concept, Vygotsky (1978) stated, "A child not only speaks about what they are doing, their speech and action are part of one and the same complex psychological function, directed toward the solution of the problem at hand" (p. 25). Language is one of the most essential tools because it is used to appropriate higher order mental tools. It assists the individual in restructuring lower order mental functions, a process necessary for the development of higher order mental ones to occur. While at first, language and other mediated signs and tools are used by the child in a social context for purposes of communicating and interacting with the environment, their function becomes extended to include more sophisticated cognitive activity and self-regulatory behavior. Vygotsky's view of the child's use of speech and action is that they consist of a dynamic relationship which alters the course of the child's behavior. From the onset of the child's early days, even when the child's language capacity is limited, Vygotsky's research demonstrated that language still plays a fundamental role in the outcome of the solution of tasks. He acknowledged that "the system of signs restructures the whole psychological process and enables the child to master her movement. It reconstructs the choice process on a totally new basis" (Vygotsky, 1978, p. 35).

**Socio-constructivism: Pedagogical Implications in the Classroom**

Having examined the theoretical tenets and ideological basis of socio-constructivism, the application of its pedagogical theories to classroom practices will now be delved into more fully. Without question, socio-constructivist theories equate learning with constructing, by doing. This is posited in Vygotskian theoretical perspectives that

view the child as the central agent in the act of learning (Bodrova & Leong, 1996: Marlowe & Page, 2005; Wink & Putney, 2002). Vygotsky's sociocultural context has enabled psychologists, researchers, and educators to fine-tune their understanding of what constitutes an authentic learner-centered environment.

Vygotsky's theories provide pedagogical benchmarks with which to comprehend how children construct their knowledge, how they learn in the classroom environment, and which characteristics of the learning environment are conducive to optimizing educational progress**.** According to Bodrova and Leong (1996), Vygotskian theory is a "framework for understanding learning and teaching" and provides "...insights about the child's growth and development" (p. 6). Werstch (1985) shares their view and maintains that we should not think of Vygotsky's work as an approach but as a plethora of theories to better understand cognitive development and its unfolding in the school setting. Kozulin and Presseisen (1995) also describe Vygotsky's psychological theories (e.g., zone of proximal development) as engendering a number of significant educational applications.

To begin with, in Vygotsky's (1978) view, the child's learning commences long before the start of school (p. 84). From his perspective, although distinct in process, learning and development are integrally related in all aspects of the child's life. He recognized the potential in development to impact learning and in learning to impact development (Vygotsky, 1978). His theories of development take into account the child's participatory role in the social-cultural context, the reciprocity of learning between the child and environment, and the simultaneity of learning in the child-child and child-adult interaction (Branscombe et al., 2000). For Vygotsky, as previously mentioned, the crux

of learning starts with language. He recognized its importance not only as a conduit for communication but as a powerful tool for learning in the school setting because it sets in motion children's discourses in the classroom about their objects of study. It facilitates the acquisition of new information, that is, its content and process. School learning, however, introduces something new to the child; it introduces formal knowledge. Manifested in signs and symbols, formal knowledge enters the learning situation as tools and affects cognitive development through the activity engaged in by the learner (Richardson, 1997). Tools, such as reading, writing, and numeracy skills enable the child to adapt to the environment by extending her capacity to control her physical, cognitive, and emotional behaviors (Bodrova & Leong, 1996).

Vygotsky contributed another theoretical construct that concerned the construction of knowledge, the "zone of proximal development". Simply stated, the zone of proximal development is "the distance between the 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 capable peers" (Vygotsky, 1978, p. 86). The actual developmental level, that is, the child's independent performance, concerns what is already known or mastered by the child when unassisted. The other level, the assisted performance, takes into account the child's emerging skills as she interacts with peers and others (Bodrova & Leong, 1996; Daiute & Dalton, 1993; Daniels, 2001; Palincsar, 1998; Vygotsky, 1978).

This construct challenged the theory of development that proposed fixed stages of development and focused on what the child could accomplish independently. In Vygotsky's (1978) view, such an analysis of cognitive development did not provide an

authentic developmental approach, that is, one that undertook "the reconstruction of all parts in the given structure" (p. 64). Neither did it acknowledge the role that more experienced individuals play in the internalization process (Jaramillo, 1996; Reynolds, Sinatra, & Jetton, 1996). The zone of proximal development, on the other hand, took into account a different type of sequence, a continuum of behaviors or degrees of maturation (Bodrova & Leong, 1996; Vygotsky, 1978). It highlighted the fact that the zone is not only different for each individual but contains various indexes of development as well.

The zone of proximal development focuses on the learning dyad and the interaction between the child and others in her immediate environment. The teacher, other significant adults, and classroom peers all play a significant role in its unfolding (Daniels, 2001). With the assistance of others, the child actively engages in the acquisition of knowledge. During her daily interactions with others, the child will examine, create, transform and make cognitive adjustments that are required for a better understanding of the world (Vygotsky, 1978). As the child's higher order mental functions are formed, the zone of proximal development is continuously adjusted with each new skill, strategy, or behavior through a process referred to as "scaffolding". In his discussion of the origins of this pedagogical metaphor, Daniels (2001) elaborates that scaffolding was perceived in the following terms:

> …the adult controlled those elements of the task that were initially beyond the learner's capacity, thus allowing the learner to complete those that were within existing capabilities. The overall emphasis here is on the creation of a pedagogic context in which combined effort results in a successful outcome (p. 107).

Within the context of the classroom, the learner is scaffolded by a more experienced peer or adult. In turn, this learning evolves when the child becomes the more expert party in a new learning dyad with peers. This is the case when more challenging problems arise such as those related to the formation of logico-mathematical concepts. At this time, knowledge becomes constructed as a dynamic process between individuals rather than a mere transmission of facts by the teacher.

Whatever form scaffolding undertakes in the classroom, it is never devoid of the sociocultural influences that are transmitted through practices, values, and beliefs. Meaning is created and knowledge constructed within the parameters of a socially and culturally derived classroom community. In Vygotsky's (1978) view, "culture influences the development of cognitive forms by providing regulative information that falls within the zone of proximal development" (p. 28).

Vygotsky (1978) also contended that when gauging the child's zone of proximal development, it is essential for the adult not to exceed the maximum level that the child is capable of performing with assistance. More precisely, it was important that the activities structured for learning should target the higher levels of the child's zone of proximal development or "beyond what the child could do on his own but within what the child can do with assistance" (Bodrova & Leong, 1996, p. 41, Vygotsky, 1978). The inclusion of assisted tasks, Vygotsky (1978) maintained, would enable teachers to hone their pedagogical practices and enhance their ability to target children's abilities more accurately.

This stance was Vygotsky's critique against challenging children with tasks that went beyond their ability. Asking children questions that are out of their range of

proximal development undermines the influence of their previous experiences and stultifies their learning process (Vygotsky, 1978). It is imperative, therefore, that learning match the child's developmental level. Providing children with developmentally appropriate questions and tasks serves to propel learning. That is, presenting the child with cues to assist her in problem solving tasks that are just slightly out of her range enhances her development and acquisition of higher order thinking skills. Teachers, therefore, should be expected to work collaboratively with the learner by taking in to account her specific learning potential within the zone of proximal development (Jaramillo, 1996; Kozulin & Presseisen, 1995).

**Socio-constructivism: teacher beliefs and practices in the classroom.** Traditionally, theorists and researchers, who were concerned with the need for pedagogical reform in European and North American education, referred to constructivist theory as a starting point for attaining this goal (Marlowe & Page, 2005). In general, a Piagetian perspective was considered to be the basis for comprehending how to embody constructivist theory in the classroom. Initiatives for change took into account not only the activities involved in the constructivist classroom but the values imbued in its philosophy. The same philosophy and values that manifested themselves in constructivist classrooms are pertinent to and can be extended to the application of socio-constructivist practices.

To begin with, the teacher is a firm believer in her students' abilities (Bodrova & Leong, 1996; Brooks & Brooks, 1993; Marlowe & Page, 2005; Selley, 1999; Short & Burke, 1991). The teacher no longer sees herself as the figure of authority, as a dispenser of knowledge. In the socio-constructivist classroom, the role of the teacher is as part of

the learning dyad, one that is based on reciprocal communication. The teacher is no longer perceived as a classroom manager but as a co-creator of knowledge. With the students, the teacher forms part of the team, the learning core that replaces the traditional transmission-based teaching model through which information and facts are disseminated from teacher to learner. Student-teacher exchange involves a reciprocal dialogue that values intellectual curiosity, risk-taking, and collaborative learning. The teacher is instrumental in designing the classroom environment so that it becomes a conduit for thinking, rich with an array of materials and experiences that assist the learner in making cognitive leaps.

Secondly, the learning environment becomes intentionally structured so as to promote self-reliance and self-directed inquiry, two pivotal elements in today's educational reform. The teacher must optimize conditions in the environment that will stimulate new directions of thinking by challenging children to "reassess their present mental structures" (DeVries & Kohlberg, 1987, p. 189). They must nurture thinking by valuing the thinking process rather than merely seeking correct answers (Airasian & Walsh, 1997). They must not attempt to direct the discovery of certain solutions but help children "clarify, focus and communicate their thoughts" (DeVries & Kohlberg, 1987, p. 191). This entails teaching for depth rather than coverage, through the use of "as many self-evident principles as possible" (Bruner, 1960, p. xii; Wiggins & McTighe, 1998). All interventions on the teacher's part must be done sparingly and only to extend the child's learning. Objects and events must be presented to the child that are of interest to her and that can be " acted upon, modified, molded and changed as the child wishes" (Copple, Sigel, & Saunders, 1984, p. 114; Woodhead & Faulkner, 2000). Children must be

provided with items that will stimulate and challenge them to think from as many vantage points as possible.

Thirdly, it is important for teachers to engage the child in learning through the use of a questioning style that challenges her to think about concepts. Teachers must ask questions that are open-ended and encourage risk-taking without going beyond the child's ability. The socio-constructivist teacher must also use student questions and experiences to drive the learning and guide the lessons. Teachers, therefore, must provoke questions rather than merely ask them (Forman & Kuschner, 1977). Related to this view is that of King's (1995) who presents an inquiry-based approach to learning as one that highlights the characteristics of critical thinking. She simply states that "good thinkers are good questioners" (King, 1995, p. 1).

Questions must stimulate the making of those "right" connections by inducing the child to build on her knowledge between the stages of cognitive development. Asking the right questions on the part of both the teacher and the learner, as well as encouraging risk taking, are essential components of a sound learning environment (Short & Burke, 1991). However, reflecting Vygotsky's critique against presenting educational material that is too difficult for the child, Saunders and Bingham-Neuman (1984) caution that a "good question is only good when appropriately matched to the child's intellectual structure and to the child's developmental level" (p. 131). Open-ended questions enhance the child's metacognitive ability and her tendency to reflect on her own mental processes (Copple, Sigel, & Saunders, 1984).

In an authentic learning environment, children do not merely seek to learn answers, they "solve problems, resolve contradictions, and eventually construct the understanding

that enabled them to give the expected answers" (Saunders & Bingham-Newman, 1984, p. 206). Questioning will help the teacher gather information, construct knowledge, and build theories about her own learning and teaching approaches. In other words, learning to ask questions pertaining to her own learning, as well as, the children's is of crucial importance as it contributes to the simultaneity of learning. Asking the right questions not only encourages interaction and the exchange of ideas, it sets the tone for intellectual curiosity and "an experimental attitude in a community" of learners (DeVries & Kohlberg, 1987, p. 209).

Doing so, however, also requires learning through error on the child's part. Most socio-constructivist theorists are of the opinion that the child's errors form a crucial part of her construction of knowledge. In order to make sense of the world, the logico-mathematical in particular, they contend that the child must have opportunities to test and amend her ideas, many of which are erroneous at first (DeVries & Kohlberg, 1987; Karpov & Haywood, 1998). Through developmentally appropriate practices, the teacher can facilitate the child's acts of inquiry and discovery as she attempts to derive the correct conclusions and attain new skills. In this manner, the child feels that she has the ability to make mistakes but also recognizes how she can learn from them. The emphasis, therefore, is on reasoning and the reflective process rather than on the end result and getting the right answer. Most importantly, through questioning techniques, the teacher is able to assess the student's current understanding of a concept, as well as, any misconceptions that may have arisen in the process.

Yager (1991) delineates a list of teaching techniques that contains crucial elements for setting developmentally appropriate practices in motion. These concentrate on

specific techniques that are pertinent to constructivist principles of learning. They are, however, also referents for socio-constructivist classroom practices. Of these, seeking student's prior knowledge and understanding, the encouragement of the student's elaboration, the formulation of cause and effect relationships during problem solving, the ability to predict consequences, as well as, the facilitation of the reformulation of ideas in light of new experiences and evidence define, in part, what the socio-constructivist teacher seeks to accomplish in the classroom at any given time.

**Additional features of the socio-constructivist classroom.** In their attempt to explain how children gain knowledge and how they use it in a constructivist classroom, Saunders and Bingham-Newman (1984) have underscored three major elements of the classroom environment which, by design, should foster each child's natural propensity to reach out for the world and adapt to its demands. These elements, however, are applicable to the socio-constructivist inspired classroom.

In addition to nurturing active involvement in the physical and social environment, *change*, *diversity*, and *intellectual honesty* are valued. These components, Saunders and Bingham-Newman (1984) contend, will produce an environment that will make appropriate demands on the changing individuals who use it, meet the needs and interests of the diverse learners, and accommodate their developmental levels. In Bruner's (1960) view, they also support the members of a community of learners as they mutually help each other to develop skills while, at the same time, become self-reliant.

Of these elements, Saunders and Bingham-Newman (1984) state that change is crucial because a static environment does not encourage active exploration of previous ideas and the incorporation of new ones. Developmental change comes from adapting to

the demands of both the physical and social aspects of the classroom in accordance with the needs of those who use it. This includes not only the physical arrangement of the classroom but the material and rules for the community who participate in it daily. Furniture and activity centers can be rearranged on an ongoing basis in order to stimulate and surprise the child's natural curiosity about her environment. The inclusion of good verbal and pictorial labels for items in the classroom will enhance the child's ability to differentiate and describe the items that comprise her learning environment (Copple et al., 1984). The more accurate, elaborate, and well organized the information is presented to the child in developmentally appropriate ways, the better structured the logical-mathematical framework will be.

Another manner in which the need for change is addressed involves manual manipulation and visual exploration, two important modalities for the child to make use of in the building of her repertoire of knowledge and related skills (Copple et al., 1984). This can be accomplished through the inclusion of "visible thinking" activities such as art and block building (Copple et al., 1984, p. 46). These activities will assist the child to develop competence in problem-solving and other requisite skills. In addition, the introduction of intriguing problems and novel activities that the children have not seen before are also ways of shaping an environment that is conducive to learning. Researchers Kamii and DeVries (1980), for example, provide a myriad of examples of games whereby instruction and activities stimulate and support the child's natural constructive process. In their opinion, group games, in particular, if developmentally appropriate, will enhance the child's logico-mathematical and spatial-temporal skills. According to their analysis, which was done from a developmentally appropriate practice

framework, suitable group games also foster two more important characteristics in the child: autonomy and self-regulatory behavior. Rather than encourage competition and heteronomy, group games promote cooperative behavior.

In short, three essential objectives of early childhood education can be met by incorporating group games. However, these objectives can also be extended to older children as well. To begin with, games provide children with the opportunity to be "alert, curious, critical and confident in their ability to figure things out and say what they honestly thought" (Kamii & DeVries, 1980, p. 203). Secondly, it assists the child with coordinating different points of view during exchanges with peers (Kamii & De Vries, 1980). This is a critical skill that needs to be developed in order for the child to assimilate the multi-perspectives of peers in the construction of knowledge. Finally, adult power could be reduced as much as possible thereby promoting the child's autonomous relationship with adults. Furthermore, group games reflect the Vygotskian approach to learning which regards shared activity as a natural conduit for the mediation of concepts, skills, and strategies among children (Vygotsky, 1978). Games, along with other shared activities, should be structured by the teacher so that peer interactions result in scaffolded learning situations. That is, through the act of children helping each other to think through a problem, the individual child's intrapersonal level of understanding is acted on (Bodrova & Leong, 1996).

Richardson (1997) prescribes the inclusion of another feature that can be applied to the socio-constructivist classroom, that of cognitive dissonance. This concept refers to the conflictual mental state that the child experiences as new ideas, objects, or activities are presented to her that do not match her present conceptual schemas. By intentionally

introducing materials "with uncertain status and multiple solutions" in the classroom, the teacher is encouraging the provocation of more complex levels of understanding through the inducement of cognitive conflict (Richardson, 1997, p.6; Palincsar, 1998; Woodhead & Faulkner, 2000). Constructivist theorists and researchers concur that some type of disequilibrium is necessary to provoke learning. Branscombe et al. (2000) state that children accrue knowledge by "experiencing disequilibrium through puzzlement and conflict in order to assimilate and accommodate new information" (p. 173). It is only when the child becomes aware of some kind of inconsistency in the materials she is manipulating or the problem presented, that cognitive growth becomes evident. Students accomplish this goal more readily through active involvement in classroom tasks that stimulate and challenge them to rebuild their present schemata.

Students bring to class different levels of understanding and perspectives of the way they see the world in which they live. According to Richardson (1997), those understandings need to be adjusted, added, or completely altered through the participation in tasks that challenge the student with cognitive dilemmas. The teacher must assist students to filter their ideas and hypotheses by enabling them to critically examine their cognitive structures. In order for students to make adjustments to their views, they must test them, break them down, and rebuild them. A child's interactions within such an environment will provide the requisite structural changes for facilitating cognitive growth. Fosnot (1993) suggests that learning does not involve discovering more but interpreting through a different scheme or structure. Forman and Kuschner (1977) concur with this notion regarding the importance of conflict inducement as a catalyst to learning. According to them, when the teacher employs this strategy, rather than "shape

the child's behavior, s/he is given the opportunity to sense conflict and experience the joy of reducing conflict by making a discovery and inventing a solution" (Forman & Kuschner, 1977, p. 14).

Another equally important component concerning the element of change that relates to the socio-constructivist classroom involves the collaborative process between teacher and child as both contribute to the ongoing decisions concerning the learning environment. That is, as the teacher becomes increasingly aware of the child's thoughts and needs, the child can follow her line of interest and experience opportunities for cognitive growth while making choices about which classroom activities to pursue (Brown, 2003; Copple et al., 1984). Such involvement on the child's part will enhance her sense of self-efficacy. Without change in the environment, the learner habituates to it and cognitive growth is stultified.

The next element, diversity, which has been highlighted as a pivotal element in the socio-constructivist learning environment, refers to the range of developmental levels, experiences, and interests among the participants in the classroom (Brown, 2003; Saunders & Bingham-Newman, 1984). Not only should there be evidence of different activities within the classroom which share common objectives but an awareness of the relationships between these activities as well. According to Branscombe and her co-authors (2000), much of what we learn is the "result of the relationships we create among objects, experiences, and ideas over time" (p. 7). With this in mind, the teacher can select activities such as the melting of ice or the study of shadows that will challenge the child to focus on transformations that are observable and rapid. Doing so will expose the child to activities and objects that require solutions which can be derived through differentiated

means. For example, the phenomenon of shadows can be explored by the child as she examines the outline of her body as it is magnified by the sun. Such an activity will present the child with materials that are not outside of her zone of proximal development while her problem solving skills are augmenting.

Another related concept that is paramount to the essence of a true socio-constructivist spirit within the classroom pertains to a different connotation of diversity, one that does not merely reflect differences. Rather, it is based on the premise that "all individuals have the right to arrive at their own beliefs" and resonates in the belief that "one's social inheritance of one's ideas and values is not only unavoidable but instrumental in supporting that right" (Saunders & Bingham-Newman, 1984, p. 72). This view supports Bruner's contention that all mental activity is shaped by the culture in which we participate. "Mental life", he states, "is lived with others, is shaped to be communicated, and unfolds with the aid of cultural codes, traditions and the like" (Bruner, 1960, p. xi). The classroom not only fosters the development of the individual's self-concept, it transmits the values and skills which are ingrained in the culture. From this perspective, the teacher's role is to safeguard that right by ensuring that a mutuality of respect permeates the classroom environment at all levels. This pertains not only to the individual's sense of self-respect but to the reciprocity of respect between peers, as well as, between child and adult.

Finally, the last characteristic deemed critical for a healthy classroom environment by researchers and educators is that of intellectual honesty (Saunders & Bingham-Newman, 1984). This is a crucial variable in the construction of knowledge because it nurtures an atmosphere wherein the child is encouraged to generate and test her own

hypothesis, to observe the outcomes, and to incorporate these outcomes into new ideas (Saunders & Bingham-Newman, 1984). The teacher must create this atmosphere by offering materials and provoking discussions that will enable the child to observe the actual consequences of her ideas in action. This requires that the environment be at once structured and receptive to the child's emotional and intellectual levels so that she feels secure enough to express her views and take risks in the search for solutions without feeling pressured to discover the correct answer. Teachers must cultivate an environment wherein students actively search for meaning, appreciate uncertainty, and inquire responsibly (Brown, 2003). Richardson (1997) refers to this type of classroom ambiance as one that provides a non-threatening atmosphere in which individual students may examine and test their own beliefs. Such educational environments foster a spirit of collegiality among students and teachers. They also nurture the student's intrinsic motivation to become responsible for her learning.

During experimentation activities, in particular, it is important for the teacher to encourage children to explain what they are learning to their peers. This not only enhances the child's metacognitive skills as she reflects upon her learning but promotes cooperation skills during the sharing of knowledge. Palincsar's (1998) research on classroom practices reveals how the teacher's role is critical for creating a classroom where the children are validators of one another's ideas. According to her, this is accomplished by establishing norms such as persisting in the solution of personally challenging problems, explaining personal solutions to one's partner, listening to and making sense of the partner's explanation, and attempting to achieve consensus about the answer and a solution process (Palincsar, 1998, p. 89).

Vygotsky particularly acknowledged the merit of educational dialogues between the learner and the teacher, as well as, the learner and her peers. He recognized their potential to serve another crucial function in the learning process. That is, they enable the teacher to gain insight into the child's understanding and determine the type and amount of scaffolding required by the child according to her zone of proximal development. Of this, Saunders and Bingham-Newman (1984) state:

> The child needs the careful structured inquiry of the teacher to provide guidance to evolve his strategies, to help him focus attention, to engage in reflective abstractions, to learn the rules of the problem identification, to search for solutions and ways of generating them until the desired one emerges (p. 125).

Similarly, Brooks (2004) contends that through teacher-to-student and student-to student discourse, the teacher can assess whether the academic demands made on the student are consonant with her cognitive abilities. However, in order to accomplish these goals successfully, one other contributing factor must be in place, that of assessment. The pivotal role of assessment strategies within the socio-constructivist model must be given serious consideration in the learning process, both in content and form. If assessment is to serve as an accurate gauge of the student's level of comprehension, particularly in the formation and development of higher-order thinking skills, it must be a continuous, long-term, yet flexible undertaking. Therefore, there should be no more "teaching to the test". In order for assessment to be valid, it must be authentic and measure the process of student thinking rather than isolated facts of information. Most importantly, it should be interwoven in the teaching-learning continuum thereby reflecting understanding rather than recall. This difference between the two types of assessment, referred to as "the

discrepancy between perceived and actual success", has been compared to "the difference between learning and performance" (Brooks & Brooks, 1993, p. 68; Katz, 1999).

Most socio-constructivists oppose traditional approaches to assessment that the focus on testing through quizzes and multiple-choice exams. They contend that these approaches, based on short-term recall, do not provide the teacher with insight into the student's learning. Rather, socio-constructivists advocate meaningful, in-progress modes of verifying the student's process of knowledge construction that reflect a dynamic form of assessment. The ongoing examination of the learning process during its transitional stages, rather than as a finished product, provides teachers with a more accurate account of the individual's understanding.

The methods and formats for inquiring about the learner's progress may be undertaken in myriad forms. These may involve observations, listening to learner's ideas, student portfolios, student exhibitions, and presentations (Brooks, 2004). Authentic assessment tasks such as these enable the teacher to observe whether the student is successfully making the connection between prior knowledge and newly formed schemata. At no point do authentic assessment strategies involve isolation between the acts of learning and the learner or between the student and teacher. Such assessment tools help to reaffirm the teacher-learner link by putting into effect Vygotsky's zone of proximal development, one in which the individual's "potential realm" of learning is shaped and defined with the assistance of others under the most optimal conditions.

Brooks and Brooks (1993) elaborate on the effects of assessment in the assertion that "…like learning, it occurs mostly naturally and lastingly when in a meaningful context and when it relates to authentic concerns and problems faced by students" (p. 96).

True assessment takes into account the metamorphosis of thoughts and concepts as they emerge during various transition periods. In keeping with socio-constructivist theories of assessment, the teacher must be non-judgmental and stay clear of traditional modes of correctness, that is, absolute notions of what a correct answer is and what an incorrect one is.

## The International Baccalaureate Programme: An Overview of the PYP

Having examined the pedagogical implications of socio-constructivism in the classroom, this section provided an overview of the Primary Years Programme (PYP) and its approach to teaching and learning. The ideological tenets and principles that underlie the PYP's application of socio-constructivist practices were examined. Its key components, the written, taught, and learned curricula were evaluated. These included its core teaching format, the unit of inquiry (UOI), as well as, its assessment criteria and methods.

First and foremost, the IBO has identified the PYP as a pedagogical model for international primary education. Aimed at learners from three to 12 years of age, it hinges on a particular set of beliefs about children and the manner in which they construct knowledge. Drawn from the works of authors such as Bruner (1996), whose premise is that children are intrepid explorers from birth, the PYP image of the learner is that of a competent individual. In this regard, the PYP states, "Children from birth are full of curiosity and the PYP provides the framework that gives crucial support for them to be active inquirers and lifelong learners" (*Making the PYP happen*, 2007, p. 7). They are encouraged to be thinkers, intellectually curious, and to interact with their environment in developmentally appropriate ways at all times. From the IBO's perspective, "practices

are developmentally appropriate when the knowledge that may be constructed from them is related to the students' first-hand experience" (*Making the PYP happen*, 2007, p. 30).

**The PYP Pedagogical Philosophy**

IBO proponents contend that the influence of the school curriculum on the overall development of the child is extensive. From their perspective, its effects should be felt in all aspects of the school environment including student activities, both academic and non-academic. In the attempt to create a curriculum framework through which student learning occurs at its best, the curriculum developers modeled the PYP framework according to referents of teaching and learning that are reflective of socio-constructivist theories.

To begin with, according to the PYP, all learning experiences should be meaningful and relevant to life. From this perspective, knowledge and understanding is best derived when authentically related to the learner's world rather than "contrived and then imposed" (*Making the PYP happen*, 2007, p.7). Learning is to be provoked through challenging and stimulating experiences.

Secondly, teaching and learning should occur in a transdisciplinary manner so that the student's learning is not relegated to traditional subjects only but to their enrichment and exploration (*Making the PYP happen*, 2007, p. 11). In the PYP, this goal is expected to be accomplished through structured inquiry, a method that combines teacher-and student-initiated exploration of broad themes. By working in collaboration on a sequence of activities and experiences, students can build and challenge their perceptions (Murdoch, 1998). This can be done specifically while students are engaged in the cycle of inquiry (COI) which serves to connect prior knowledge with current understanding. As

will be more fully explained in the UOI planner section, the COI is a semiotic tool that involves a sequence of stages and activities which assist students to construct knowledge.

Thirdly, learning should not be done in isolation. While knowledge building may be a solitary act, the development of understanding is a product of students working together in dyads or larger groups. According to the PYP, students should accrue knowledge by continually "constructing, testing, and confirming or revising" their ideas with peers and adults (*Making the PYP happen*, 2007, p. 6). PYP teachers, therefore, must scaffold learners as they test their understanding and develop cognitively.

Finally, in keeping with Vygotskian pedagogical theories, the PYP has an inclusive philosophy that proposes that all students should be engaged in learning in a developmentally appropriate manner. In this respect, the PYP states, "Although development usually occurs in recognizable and predictable directions, it is unique in each child, occurring at varying rates from child to child, and inconsistently for each child" (*Making the PYP happen*, 2007, p. 7). Part of the IBO mandate is to ensure that the individual needs of all learners be addressed.

**The PYP Curriculum Model Framework**

Unlike other curriculum models that end with assessment, the PYP curriculum is based on an iterative model that consists of three interrelated components which work in tandem and are equally valued: the *written*, *taught*, and *learned curriculum* (*Making the PYP happen*, 2007, p. 8).

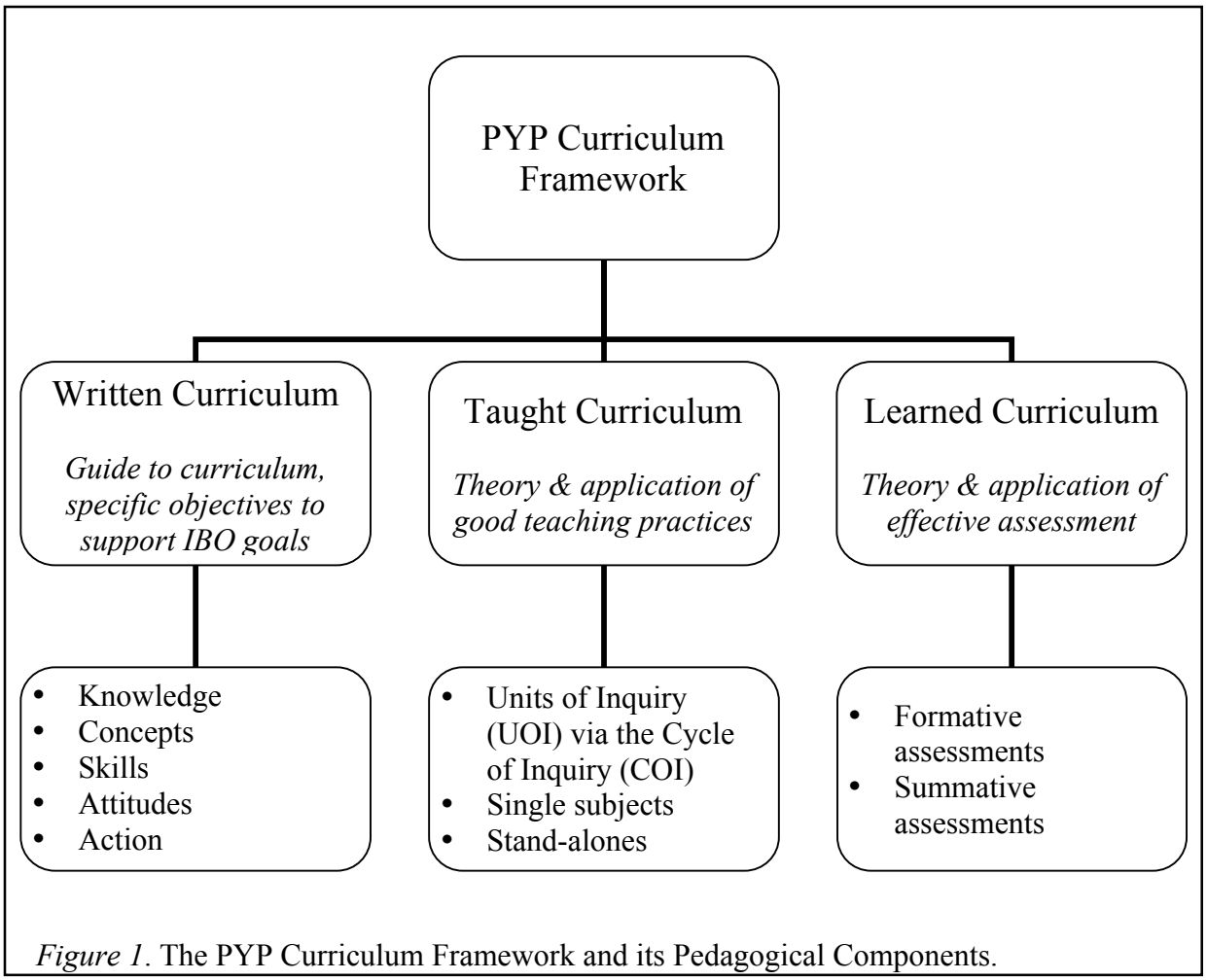


*Figure 1*. The PYP Curriculum Framework and its Pedagogical Components.

Firstly, they are to serve as a guide to the curriculum with specific written objectives that support IBO goals. Secondly, they are to provide educators with the theoretical tenets that sustain good teaching practices. Thirdly, they are to take into account the inclusion of appropriate assessment in order to ensure an effective portal into the student's ongoing learning.

**The written curriculum.** In order to design a curriculum deemed worth knowing by the IBO, five essential elements are incorporated into the written curriculum: *knowledge*, *concepts*, *skills*, *attitudes*, and *action.* Throughout the PYP curriculum

framework, a balance is sought between the "acquisition of essential knowledge and skills, development of conceptual understanding, demonstration of positive attitudes and taking responsible action" (*Making the PYP happen*, 2007, p. 10).

***Knowledge.*** Highlighting key socio-constructivist tenets, the first one, knowledge, pertains to significant and relevant content that the IBO expects students to explore by taking prior experiences and understanding into account (*Making the PYP happen*, 2007, p. 10). The knowledge component supports the IBO mandate to promote international-mindedness. Regarding this, Boyer (1995), one of the IBO's proponent thinkers, proposed that the curriculum should consist of a set of themes that represented shared human experiences, "core commonalities that have global significance for all students in all cultures*" (Making the PYP happen*, 2007, p. 11). His work led to the selection of six transdisciplinary themes, known as Units of Inquiry (UOI), which contributed to the commonalities that exist between all PYP schools.

These themes are not only supported by knowledge, concepts, and skills from traditional subject areas but transcend the boundaries of these subjects. They are intended to provide the learners and teachers with myriad opportunities to share educational dialogues of local and global significance. They cover a broad range of topics from an inquiry into the self to universal concerns about collective rights and responsibilities. Each theme is formulated into a UOI that begins with one of the following inquiries: Who we are, Where we are in place and time, How we express ourselves, How the world works, How we organize ourselves, and Sharing the planet.

The PYP curriculum was designed as a spiral model of cognitive development rather than a linear one (*Making the PYP happen*, 2007). Reflecting the Vygotskian

perspective of learning, it was designed for the purpose of facilitating the acquisition of cognitive and metacognitive skills on two levels: at first, on an intrapersonal level as the children engage in the UOI discussions and activities with adults and peers and then, on an intrapersonal level, as understanding becomes internalized.

***Concepts.*** The second essential element consists of a set of eight concepts, significant universal ideas, which structure the inquiries of the units and have relevance within each subject area. They are: form, function, causation, perspective, responsibility, change, connection, and reflection. Each one lies at the core of what the IBO wants its students to know by promoting real understanding and challenging them to engage in learning from a range of perspectives (*Making the PYP happen*, 2007, p. 15). During the process of structured inquiry, as teachers and students plan and explore the UOI, these eight concepts are presented as open-ended key questions that are intended to improve critical thinking. To IBO proponents, these concepts are semiotic tools, research devices that are to stimulate cognitive and metacognitive abilities and bolster student inquiry.

***Skills.*** Regarded as a set of transdisciplinary tools of inquiry, the skills pertain to personal, social, cognitive, and metacognitive abilities that enable students to construct meaning (*Making the PYP happen*, 2007, p. 21). Throughout the UOI, the learner is to acquire skill sets that contribute to her holistic development as a lifelong learner and global citizen. These include social skills, communication skills, research, and self-management skills.

***Attitudes.*** Referred to as "habits of mind", attitudes form part of the desired set of traits promoted by the PYP curriculum. These include: appreciation, commitment, respect, tolerance, confidence, cooperation, creativity, curiosity, empathy, enthusiasm,

independence, and integrity (*Making the PYP happen*, 2007, p. 24, Figure 9). They reflect what the IBO expects students to "feel, value, and demonstrate" in their daily experiences at school (*Making the PYP happen*, 2007, p. 24). In tandem with the IB Learner Profile (LP) traits, the attitudes are the medium for teachers and students to shape the learning environment through positive interactions. The PYP teachers are to model the attitudes and raise awareness of their impact in the classroom.

***Action.*** Defined as the "voluntary demonstration of a student's empowerment in the context of expectations laid down in the programme", every PYP student is expected to take responsible and appropriate action based on her learning experiences throughout each academic year (*Making the PYP happen*, 2007, p. 25). For some, this may involve simple acts within the classroom or at home such as initiating a recycling program. For others, the level of involvement may extend to the whole school, the community, or beyond such as raising funds for a worthy cause.

**The taught curriculum.** According to the PYP curriculum developers**,** the design of the curriculum should take into account the theory and application of good classroom practices (*Making the PYP happen*, 2007). The taught curriculum is considered to be the written curriculum in action. Based on an inquiry approach, it should enable students to become "involved in their own learning and take responsibility for that learning" (*Making the PYP happen*, 2007, p. 29). The PYP teachers strive to attain this goal through a process of collaborative and transdisciplinary planning. For this purpose, the IBO has developed implementation standards and a list of required practices to support them in their mandate to provide a comprehensive and coherent international education.

In terms of good teaching practices, the PYP curriculum should reflect another socio-constructivist tenet, that is, the active construction of meaning (*Making the PYP happen*, 2007, pp. 28- 29). For students' learning to be purposeful, the PYP teacher is expected to structure the inquiries based upon the UOI, central idea, and lines of inquiry so that they provide a rich testing ground for student hypothesis, experimentation, analysis, and reflection. According to the IBO, this "implies a pedagogy that is significantly… dependent on students' inquiry, where the planning incorporates a range of experiences that acknowledges the diversity of students' prior knowledge" (*Making the PYP happen*, 2007, p. 29).

Throughout the UOI, both teachers and peers are expected to scaffold the learner as she enhances her level of conceptual understanding. In Vygotskian (1978) terms, this is referred to as moving through the zone of proximal development whereby more expert participants facilitate the construction of knowledge for the novice.

**The learned curriculum.** Effective assessment is considered to be the crux of this component of the PYP curriculum framework. According to Vygotsky (1978), assessment provides insight into the learner's cognitive and metacognitive development. From his perspective, it involves the child's current level of understanding, as well as, her prospective level (Vygotsky, 1978). The PYP takes these two levels into account through the use of the formative and summative modes of assessment. Unlike traditional curriculum models that relegate assessment planning to the final stage of teaching, the PYP model considers the desired learning outcomes of the UOI from the onset of the curriculum planning, that is, by examining student development as a continuum of personal, social, and academic growth. Students, therefore, are evaluated while engaged

in tasks with a range of experiences and knowledge, as well as, when demonstrating the attributes and characteristics of the LP.

***Formative assessment.*** Formative assessment consists of a variety of media and includes student feedback such as questions, anecdotal comments, individual task performances, as well as, the documentation of learning processes in groups or alone. Through a detailed documentation of students' learning, formative assessment tracks the "increase in the substance and depth of their inquiries" on an ongoing basis (*Making the PYP happen*, 2007, p. 44).

***Summative assessment.*** While formative assessment is instrumental in providing information for each stage of the inquiry process, summative assessment concentrates on the products of inquiry such as student-initiated work or performance that demonstrates the learner's understanding of the central idea (*Making the PYP happen*, 2007, p. 45).

In conclusion, effective assessments, both formative and summative, are a vital pedagogical tool and should be an essential component of the PYP curriculum for teachers, students, parents, and the educational community. They enable teachers to gather evidence about the teaching and learning process on an ongoing basis and to adjust their planning as needed. Assessments are also an important resource for students as they engage in the process of analyzing "their learning and understanding what needs to be improved" (*Making the PYP happen*, 2007, p. 46). Finally, assessments provide parents with the opportunity to become informed about their child's learning and development.

## Statement of Problem

The present study was guided by an interest in socio-constructivism and the goal of identifying an authentic socio-constructivist model of education. The purpose of the study

was to determine whether the IB model of education applied socio-constructivist theories and principles of teaching and learning to its curriculum design.

In order to examine socio-constructivist beliefs and practices and their interpretation in praxis in the IBO model of education, a clarification and consolidation of the views that contribute to the socio-constructivist paradigm was undertaken. Due to the fact that previous research on socio-constructivism did not prescribe specific methods or training for the individual to pursue in order to become a bona fide socio-constructivist teacher, it was important to identify a framework for an authentic socio-constructivist model of education.

Moreover, IBO proponents do not refer to its design as a socio-constructivist model. They have identified it as "constructivist" in approach (*Making the PYP happen*, 2007, p. 6). However, while teaching at the pre-kindergarten level (K2) in an IBO school, it became apparent to me that there was a connection between the research that I was doing on socio-constructivism and the pedagogical model with which I was becoming familiar. The design and content of the IB programme at the Primary Years level presented a model of education that appeared to support the philosophical tenets and theoretical principles of socio-constructivism.

The terrain for testing this assumption, Uptown Primary School, is an IBO school in Dubai where I taught between August 2006 and June 2008. During the study, the school, which provided an English curriculum, was comprised of an international community with an enrollment of 576 students in the Primary Years Programme. The student population consisted of 42 nationalities. The teaching staff, composed of both local and foreign teachers, had a representation of 22 nationalities.

In order to evaluate whether the PYP supported the learner and teacher throughout the educational process from a socio-constructivist perspective, several factors were taken into consideration. First of all, it was necessary to establish a link between the theoretical tenets of socio-constructivism and its practices in the IB model at the PYP level. The Comparison Chart of Perspectives (CCP) was created that included the pedagogical principles of socio-constructivism, their theoretical application in the IBO model, and their specific referents in the K2 curriculum content. Each of these components was vital to understanding how, in theory and practice, socio-constructivism was defined in the PYP.

Secondly, through a micro-analysis of the K2 UOI planner, the content of the PYP was examined in order to determine whether the K2 curriculum incorporated the use of authentic and meaningful teaching and learning experiences within a shared, child-centered learning environment as per the principles and tenets of socio-constructivism.

Lastly, while I had my own ideas concerning the PYP's compatibility with socio-constructivist theory, it was important to ascertain whether individuals, who were familiar with the PYP curriculum of the IB level at Uptown Primary School, shared my perspective. It was my intention to analyze how teachers in this programme described their philosophy and practices, how such practices were manifested in the curriculum, and how members of the administration and parents of the children at the K2 level perceived this philosophy and its inculcation through teacher practices in the classroom.

To this end, a series of questionnaires and surveys were designed for the purpose of tapping the perceptions of various participants at the K2 level of Uptown Primary School according to their educational values, beliefs, and views of both the teachers' practices

and the educational environment. The content of the ECE Rating of Teacher Practices in the K2 Classroom survey, Teacher Belief and Teacher Practice Rating Scales, Teacher Chart: Connecting Beliefs with Classroom Practices, and Parent Survey were guided by several socio-constructivist concepts such as a learner-centered education, the co-construction of knowledge by a community of learners, the enhancement of personal and social development, the incorporation of DAP, and a curriculum driven by open-ended inquiry.

In brief, in the attempt to answer the research questions and determine the extent to which the PYP's pedagogical theories and practices were compatible with the provisos and theoretical principles of socio-constructivism, the following chart and instruments were used to conduct the research:

1. A Comparison Chart of Perspectives (CCP)
2. A Micro-analysis of a K2 UOI PYP planner
3. Uptown Primary School K2 participant surveys and questionnaires

**A Comparison Chart of Perspectives (CCP)**

Henson (2003) stated, "For educational systems to serve the needs of the learner, it is essential for every instructional decision to focus on the individual learner with an understanding of the learning process" (p. 2). The main purpose of this comparison chart was to ascertain whether the PYP curriculum was based on an understanding of the cognitive and metacognitive processes involved in learning and whether it met learner needs. With this goal in mind, parallels were drawn between the DAP methods associated with socio-constructivist pedagogical tenets and principles, the philosophy of the IBO, and the teachers' practices at the K2 level of Uptown Primary School.

Wink and Putney's (2002) Comparison Chart of Perspectives was adapted for the purpose of this study (pp. 33-34). Representing various indices of teaching and learning, eight constructs were selected that highlight fundamental pedagogical concepts pertaining to knowledge, the manner in which it is developed and acted upon, and the agents of learning. Through the analysis of these constructs, different facets related to knowledge construction were consolidated.

**The CCP Constructs**

**Knowledge.** Knowledge is the first construct examined and the one upon which all else is based. From a socio-constructivist perspective and that of the PYP curriculum model, it is identified as meaningful content that is constructed in a collaborative process. Presented as part of a continuum, its focus is on the active participation of the learner and the exploration of significant ideas. From the perspective of the PYP, the leaner is engaged in pedagogical content that is relevant and worthy of investigation (see Appendix A, p. 147).

**Learning.** This construct takes into account two components related to learning: its content and process. As the learner restructures her thinking to a deeper level of conceptual understanding, socially and culturally defined knowledge and values are assimilated and/or accommodated. According to the PYP, this takes place through a transdisciplinary curriculum based on structured inquiry via central themes such as *Let's Play*. It involves linking the learner's prior experiences and knowledge to her current understanding through active exploration. Based on the information provided by the K2 teachers, these pedagogical elements were incorporated through pre-assessment activities

such as brainstorming, mind maps, and a host of transdisciplinary activities during the inquiry cycle (see Appendix A, p. 148).

**Teaching.** The socio-constructivist teacher is presented as one who "co-constructs knowledge with students by sharing expertise and understanding" (Wink & Putney, 2002, p. 33). From this perspective, teaching involves helping the learner make connections between formal knowledge that is acquired in school and experiential learning that occurs in the real world. It takes into account the range of student skills and abilities, the multiple perspectives of learning, and the use of a variety of tools to enhance and assess learning. From the IBO perspective, these goals are facilitated by the PYP teacher while students are actively engaged in open-ended inquiry and real-life investigations (*Making the PYP happen*, 2007, p. 7). They are accomplished by acknowledging the fact that students have different needs and abilities through the use of various teaching strategies and resources.

In terms of the K2 level, these goals were attained through the incorporation of myriad games and weekly activity centers, discussions related to toy safety and cooperative skills, and differentiated learning experiences including the use of math and reading groups according to student ability (see Appendix A, p. 148). In addition, assessment practices were incorporated to ascertain the learner's ongoing understanding. The assessments were done individually such as through the use of journal reflections or with peers as in the case of self-evaluations with buddies and rubrics.

**Role of teacher.** Wink and Putney (2002) selected the terms "mediator, mentor, actuator" to depict the teacher's role in the educational process (p. 33). In keeping with socio-constructivist theories, from the perspective of the PYP curriculum developers, the

teacher is considered to be a mediator and co-constructor of knowledge (*Making the PYP happen*, 2007, pp. 5, 7, 30). She is responsible for creating a stimulating environment, providing the learner with resources to engage in student-led inquiry, promoting the holistic development of the child, and facilitating global citizenry (*Making the PYP happen*, 2007, p. 42). In addition, the PYP teacher is expected to be a reflective practitioner, one who values the spirit of collegiality.

The K2 teacher practices suggested that knowledge was formulated and transmitted with the support of the teacher. Acknowledging the importance of play, they used semiotic tools such as audio-visual materials (e.g., stories, songs, videos, guest speakers, and computer software) to enhance the children's learning experiences (see Appendix A, pp. 148-149). While the teachers assessed the learner's development of higher order thinking skills, ongoing opportunities were provided for the learners to revisit their ideas and concepts. Highlighting the LP traits, they attempted to create a secure learning environment in which the children felt at ease to express themselves. Through school-wide celebrations (e.g., National Day) and teacher classroom initiatives, multiculturalism was promoted. In addition, the teachers evaluated their own practices as they planned the UOI with the ECE coordinator and the other K2 teachers during weekly sessions.

**Role of peers.** From the socio-constructivist perspective, the peer is perceived as a collaborator and active co-constructor of knowledge. According to the PYP, her role is to provide multiple perspectives of understanding, values, and beliefs while interacting with others during joint meaning-making and assessment activities (*Making the PYP happen*, 2007, p. 42). This collaboration was made visible in the K2 classroom during activities

such as brainstorming, student dialogues, game playing and role rotation, and self-reflection with buddies and the play video assessment (see Appendix A, p. 150).

**Role of student.** Taking into account that socio-constructivist principles of learning center upon activity and reflection, the PYP's perception of the learner is that of an "active and critical thinker, assessor, explainer, inquirer, interpreter, negotiator, social participator, and global citizen" (*Making PYP happen*, 2007, pp. 29, 42). The K2 teachers cited examples of classroom activities intended to encourage the learners to formulate their own questions, design their own inquiries, share perspectives, and master a range of transdisciplinary skills (see Appendix A, pp. 150-151). In addition to the weekly learning centers, the activities included a game day during which the children taught one another how to play games, the adaptation of games, the creation of toys, the use of various computer software. Moreover, the PYP student is also expected to demonstrate an understanding of the UOI theme by taking up "voluntary action" in a relevant and authentic manner (*Making PYP happen*, 2007, p. 25). This goal was accomplished through extended learning opportunities such as the exploration of colours and the adaptation of a treasure hunt (see Appendix A, p. 151).

**Student view of self.** The learner's self-image is greatly affected by the perceptions that others hold of her within the community of learners (Short & Burke, 1991). From a socio-constructivist perspective, this image should be that of a sense-maker, problem-solver, and socially appropriate member of the collective (Wink & Putney, 2002, p. 34). According to proponents of the IBO, in order for the learner to be perceived as a competent individual, she must be empowered to value her learning and to take responsibility for it. In the PYP, this goal is manifested through the modeling and

demonstration of the desired learner traits and attributes of the LP (*Making the PYP happen*, 2007, p. 4, Figure 1). It was promoted in the K2 classrooms through activities such as the class "charter of rights", discussions concerning conflict resolution and cooperation, game playing, and self-evaluations throughout the ongoing stages of the inquiry cycle (see Appendix A, p. 151).

**Evidence of learning.** The socio-constructivist teacher is expected to assess the manner in which students plan, organize, share, and self-evaluate their learning on an ongoing basis (*Making the PYP happen*, 2007, p. 31). In keeping with Vygotskian theoretical tenets concerning the child's actual and potential levels of understanding, the PYP has structured pre-assessment, formative, and summative assessments based on specific learning outcomes and overall expectations outlined for each subject in the *scope and sequence* documents (*Making the PYP happen*, 2007, p.11). Taking into account the multiple perspectives of the learner, peer, and teacher, the K2 teachers used observation, child interviews, venn diagrams, rubrics, and self-reflection journals in addition to several other practices as a means of ascertaining the development of the learner's conceptual understanding (see Appendix A, p. 152).

## Methodology

### Participants

The members of the Uptown Primary School community who participated in this study included the principal, ECE coordinator, teachers, and parents of children at the senior kindergarten (K2) level. Their participation occurred in different ways. With the permission of the principal, the data for the K2 section of the CCP and the micro-analysis of the UOI planner were made available by the ECE coordinator. The K2 UOI planner

was prepared collaboratively by the K2 teacher team, and it was a synthesis of teacher feedback throughout the term.

With respect to the last section of the methodology, the survey questionnaires, two members of the administration, four K2 teachers, and 78 parents of the four K2 classes at Uptown Primary School were sent information packages concerning the survey project. The total number of respondents who agreed to participate in the survey was 14 and included the principal, ECE coordinator, two K2 teachers, and 10 parents of the children who attended the K2 classes. Parental participation was as follows: five from the Blue group, two from the Green group, two from the Yellow group, and one from the Red group.

Of the participants' nationalities, six ethnic origins were represented:

- A= Australian
- B= Canadian
- C= Canadian/American
- D= European
- E= Middle Eastern
- F= New Zealand/Maori

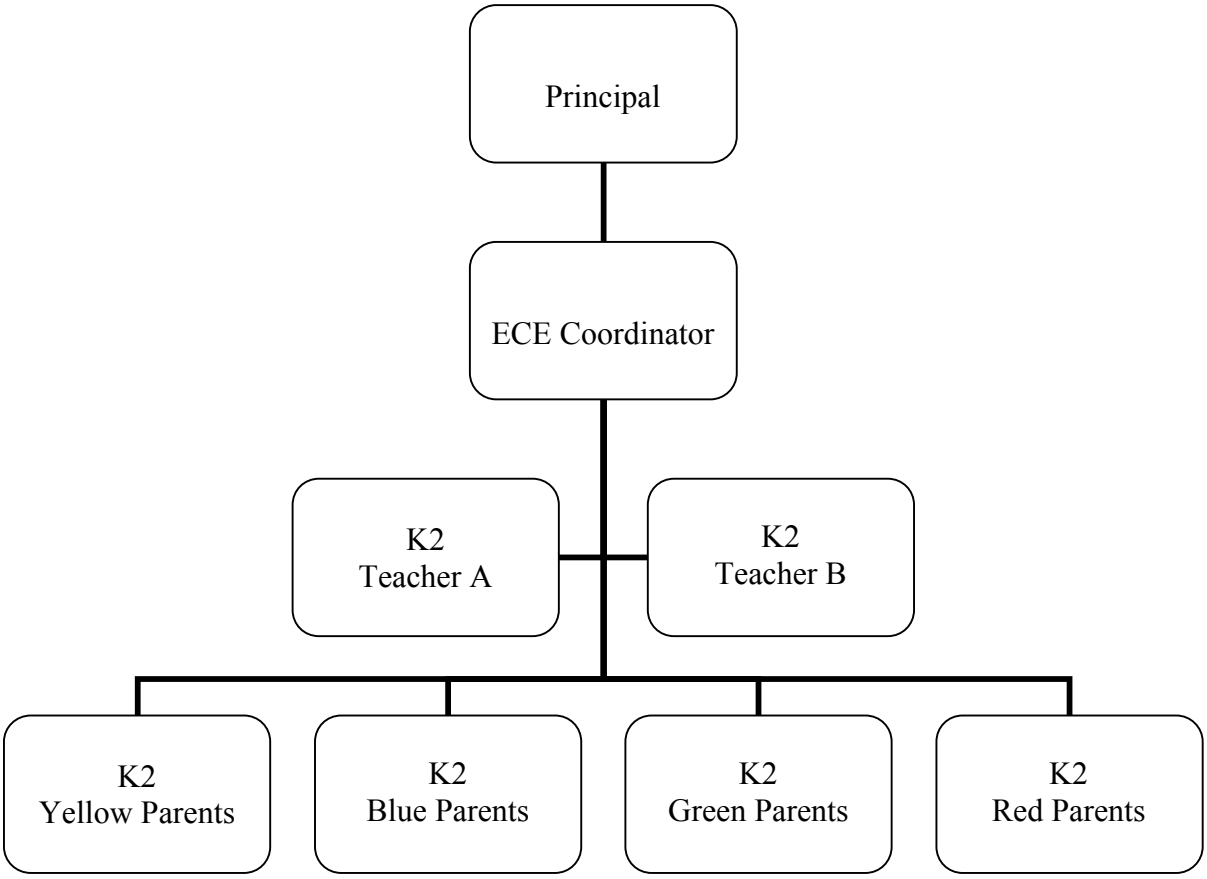


*Figure 2*. An Organizational Chart of the Participant Groups in the Survey.

**Setting**

Uptown Primary School, an elementary school located in Dubai, United Arab Emirates, was selected as the setting for the thesis project for several reasons. To begin with, the researcher had taught there between August 2006 and July 2008 and was familiar with its community. Secondly, as the school was accorded IBO status while the researcher was teaching there at the K2 level of the PYP, she had become very informed about its curriculum. Thus, the preschool setting appeared to be an interesting site for carrying out the study**.**

In addition to English as the core language of instruction, students were taught the host language, Arabic, as well as French or German. While a minority of the student population was Emirati, most of the parents were ex-patriots living in Dubai for work related purposes. A majority of them had emigrated from Eastern Europe and Australia, while others came from other parts of the Middle East.

**Uptown Primary School management.** The hierarchy of managerial positions in the school is represented as follows:

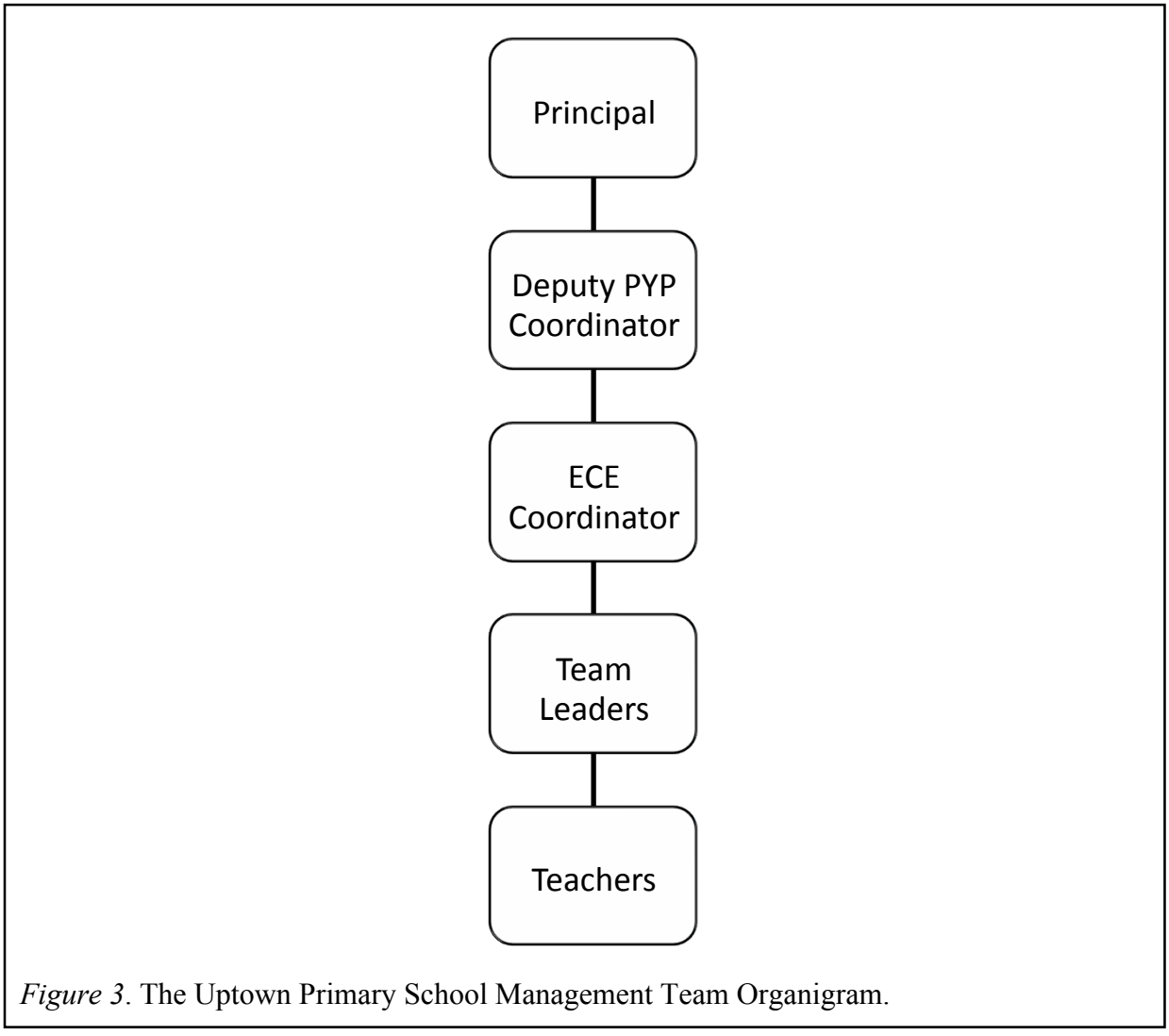


*Figure 3*. The Uptown Primary School Management Team Organigram.

## Procedure

The principal of Uptown Primary School was contacted by email in early October 2009 with the details of the study and a request for the following: a sample K2 UOI planner and permission to contact various members of the K2 school community as potential participants for the sample population of this study.

The ECE coordinator agreed to oversee the project. The first draft of the Parent Survey was reviewed by the ECE coordinator, a parent whose child attended K1 at the school, and a parent whose child attended K2 at an IBO school in Toronto. The initial feedback was mixed, however, they were of the opinion that it was too early in the year to be able to evaluate the statements. The survey was revised and resent to the Toronto parent for a second review of its content and form. Subsequently, the instrument was deemed to be conducive to providing reliable responses.

**Information package.** An information package was mailed to potential participants that included a letter of information about the project (see Appendices B, C, D, E) and a letter of consent (see Appendices F, G, H, I). The envelopes and consent forms were coded to ensure confidentiality. A second coded envelope was provided for the return of the consent letter. The packages were sealed in a coded envelope in order to further ensure confidentiality. The coding for the teachers of the four kindergarten classes was done numerically according to their designated class colour code (i.e., K2 Blue, Green, Yellow, Red). The parent's information package was coded numerically in alphabetical order according to the child's family name. Both the principal and ECE coordinator's information packages were numerically coded.

The packages were mailed to the principal of Uptown Primary School in Dubai and distributed to all participants via the children's daily communication folder. As per the instructions in the letter of information, they were to be returned within a period of two weeks. However, they were forwarded to Concordia University within seven weeks.

**Survey package.** At the end of December 2009, respondents were sent a second package that contained a letter of thank you (see Appendices J, K, L, M), a demographic survey (see Appendices N, O, P, Q), an open-ended questionnaire (see Appendices R, S, T, U), and one or several rating scales (see Appendices V, W, X, Y, Z). Prior to being sent, the surveys were prepared, coded, and sealed in coded envelopes to ensure confidentiality. A second coded envelope was provided for the return of the completed forms. The coding of the principal, coordinator, and two K2 teacher questionnaires was done according to the same numerical code that had been given to the previous information package. The parent questionnaires were coded numerically according to the alphabetical order of the child's family name.

The questionnaires were mailed to the principal of Uptown Primary School and distributed to all participants. Once again, the ECE coordinator agreed to oversee the distribution, collection, and return of all of the questionnaires. Parent questionnaires were sent home via the children's daily communication folder. As stipulated in the accompanying letter of information, a period of two weeks was allotted for the return of the surveys. After approximately one month, a second request was sent to parents to complete and return the surveys. The ECE coordinator and the parents' surveys were returned in sealed, coded envelopes within an eight-week period, however, the principal's and teachers' questionnaires had been misplaced at the school in Dubai. The principal

and teacher copies were forwarded to Dubai once more and returned by mail in mid-March.

**Instruments**

With the exception of the K2 UOI planner, several instruments were designed for the purpose of this study.

**A micro-analysis of the K2 UOI planner.** The K2 UOI planner was used to analyze the application of socio-constructivist beliefs and practices by the teachers and their operationalization in the PYP curriculum at the K2 level (see Appendix AA). The descriptive data provided in the planner was based on the K2 teachers' comments and reflections and their documentation of the transdisciplinary activities and tasks throughout the unit.

**Surveys.** The surveys were sent to the principal, ECE coordinator, teachers, and parents of the Uptown Primary School K2 classes (see Appendices N, O, P, Q). They consisted of a demographic form, adapted from the Concordia Parent Questionnaire (Jacobs, Vukelich, & Howe, 2006), regarding each participant's personal status and work-related experiences (e.g., education, years in school, occupation, and work experience). Additional parental demographic information was obtained concerning the parent's age, marital status, ethnic background, and yearly household income. Parents were also asked to complete pertinent information regarding their child's current and previous school experience (e.g., adult responsible for pick-up, home-school communication, and nursery school attendance).

**Questionnaires.** These were sent to all participants and contained a series of open-ended questions pertaining to their pedagogical beliefs and values as well as their

understanding of the PYP curriculum (see Appendices R, S, T, U). Parents were also asked to indicate how satisfied they were with the K2 PYP curriculum.

**Rating scales.** Five different scales were designed to tap into the perceptions of participants regarding the PYP as an authentic socio-constructivist curriculum model (see Appendices V, W, X, Y, Z). With the exception of the Parent Survey, the scales consisted of 30 items that pertained to six pre-set themes. These themes were determined according to the theoretical tenets and philosophies associated with socio-constructivist referents of teaching and learning according to the following criteria:

1. Perception of the learner as a member of a community of learners
2. Learner Profile (LP) traits and attributes espoused in the IBO curriculum
3. Developmentally appropriate practice in the IBO curriculum design
4. Curriculum content to enhance cognitive and metacognitive development
5. Transdisciplinary curriculum that follows learner interests
6. Use of semiotic tools to advance learning

***Teacher belief rating scale.*** This scale consisted of an evaluation of the K2 teachers' perceptions of their pedagogical beliefs and values (see Appendix V, see Table 4). Based on a 4-point Likert-type rating scale that ranged from 1 (*do not agree*) to 4 (*agree all of the time*), the teachers were asked to rate 30 statements (e.g., the classroom as a community of learners, the use of an interactive pedagogy).

***Teacher practice rating scale.*** Based on a 4 point Likert-type rating scale that ranged from 1 (*does not occur*) to 4 (*occurs always*), the teachers were asked to evaluate 30 statements according to the extent which they perceived these practices were

implemented successfully in their classroom (e.g., the use of significant themes, the inquiry cycle) (see Appendix W).

***Teacher chart: connecting beliefs with classroom practices.*** This instrument was adapted from a constructivist chart by Jacobs, Vukelich, and Howe (2006). It was designed for the purpose of ascertaining the relationship between teacher beliefs, values, and pedagogical practices (see Appendix X). Through the teachers' descriptive data regarding specific pedagogical activities, tasks, and strategies, the attempt was made to determine whether their perceptions of socio-constructivist theoretical tenets translated into authentic learning experiences in their classrooms. It is important to point out, however, that the teachers were asked for their perceptions of their classroom functioning and that a site visit, for the purpose of validating teacher self-reports, was not conducted. As in the case of the other two teacher rating scales, the design of this instrument took into account an overview of theoretical tenets related to socio-constructivism and was based on 30 statements pertaining to six interrelated themes.

***ECE coordinator rating of teacher practices in the K2 classroom scale.*** This scale consisted of an evaluation of the K2 teachers' classroom practices according to the ECE coordinator's perception (see Appendix Y). Based on a 4-point Likert-type rating scale that ranged from 1 (*does not occur*) to 4 (*occurs always*), the coordinator evaluated 30 statements according to the extent which she perceived certain practices were implemented in the K2 classroom (e.g., the use of hands-on activities and scaffolding).

***Parent survey.*** This questionnaire was designed for the purpose of providing insight into the parent's perception of the K2 teachers' practices and their child's learning environment (see Appendix Z). Based on a 5-point Likert-type rating scale that ranged

from 1 (*strongly disagree*) to 5 (*strongly agree*), the parents were asked to evaluate 12 statements that referred to socio-constructivist pedagogical features (e.g., promotion of autonomy and experiential learning). Similar to the teacher scales, it was based on five pre-set themes. However, the theme, Curriculum content based on cognitive development, was not included as it would have been difficult for parents to access the extent to which related teacher practices were incorporated in the classroom particularly at the beginning of the year. The themes included the following:

1. Perception of the learner as a member of a community of learners
2. Learner Profile traits and attributes espoused in the IBO curriculum
3. Developmentally appropriate practice in the IBO curriculum design
4. Transdisciplinary curriculum that follows learner interests
5. Use of semiotic tools to advance learning

**A Micro-analysis of the K2 UOI Planner**

This year, *Let's Play*, was selected as the UOI for the first term of the 2009-2010 session at the K2 level. The duration of the unit was six weeks. The unit was composed of a central idea that is of global significance to children and families around the world. It was a study of "how people play to learn, explore and have fun" (see Appendix AA, pp. 222-225). This unit was a transdisciplinary themed inquiry that took into account the work of theorists such as Vygotsky (1978, 1986), Bronfenbrenner (1994) and Bruner (1996) through its emphasis on the "whole child" and the cultural influences that contribute to her development. It was structured according to the works of Murdoch (1998), Wiggins and Mc Tighe (1998) whose research on pedagogy influenced the design and content of the PYP curriculum framework.

Its central idea consisted of several lines of inquiry that were provoked by teacher questions that took into account the following concepts: what is play, why do we play, the social elements of play, different kinds of toys and games, and the connection between playing and learning (see Appendix AA, p. 222).

The application of several socio-constructivist theories were examined throughout the course of the unit that concerned the following principles of learning:

1. It is an act that involves the learner and her environment
2. It incorporates culturally defined knowledge
3. It is a collaborative process between the teacher, learner, and peers
4. It enables the learner to relate prior understanding and experiences
5. It is provoked through good open-ended teacher and learner questions
6. It is enhanced through an interactive pedagogy

**Concepts**

Each unit of inquiry contains a number of key concepts, significant ideas, that are essential units of human thought and of universal interest to man (*Making the PYP happen*, 2007, p. 15). For this particular unit, the K2 teachers selected the following three: (1) form, (2) function, and (3) responsibility. Presented as questions, they impose no limitations upon student thinking. Rather, they encourage critical reflection (*Making the PYP happen*, 2007, p. 17). Concepts are learned best when they are encountered in a variety of contexts and expressed in a variety of ways.

**Form.** Focusing on the question, "What is it like?" (*Making the PYP happen*, 2007, p.18, Figure 7), the learner was expected to examine both the "everyday" and "scientific" notions that define what a game or toy is, that is, the ones that are discovered

spontaneously and those that are learnt in school through systematic observation and categorization (Vygotsky, 1986). In the PYP, form was selected based on the fact that that the individual's "ability to observe, identify, describe and categorize is fundamental to human learning within and across all disciplines" (*Making the PYP happen*, 2007, p.18, Figure 7). In the *Let's Play* UOI, form was explored in terms of the observable features and properties of games and toys through the interactive pedagogy of game playing and game invention (see Appendix AA, p. 223).

**Function.** By considering the question, "How does it work?", the child had the opportunity to extend her " understanding that everything has a purpose, a role or a way of behaving that can be investigated" (*Making the PYP happen*, 2007, p. 18, Figure 7). In the K2 classrooms, the children played different types of games, discussed rules and procedures, changed roles within the group, invented their own games, and built their own toys (see Appendix AA, p. 3). These activities were intended to engage the children in developmentally appropriate experiences that would enable them to test their ideas.

**Responsibility.** The focus of the unit shifted with the third concept. By presenting the learner with the question, "What is our responsibility?", an important IBO proviso was addressed, that of "taking socially responsible action" (*Making the PYP happen*, 2007, p. 20, Figure 7). While the intended goal of the unit was about learning how to play, it was also for the child to become introspective and reflect upon her own beliefs and values and their interconnectedness. As the learner interacted with peers during game playing, she learned rules and applied them. In tandem, the LP attributes, such as cooperation and self-regulation, were promoted (see Appendix AA, p. 224).

**The Cycle of Inquiry (COI)**

According to the PYP, student-led inquiry is to be structured through the cycle of inquiry (COI). As a semiotic pedagogical tool, the purpose of the COI is to consolidate the different stages of knowledge formation that occur during peer-mediated experiences as learners explain, evaluate, and share one another's perspectives. Modelled on Murdoch's (1998) framework for inquiry planning, it is composed of six distinct yet interrelated stages through which the learner constructs knowledge and shares meaning with others. According to Murdoch (1998), through this planning model, "a sequence of activities and experiences is developed to build on and challenge student perceptions" (p. 5).

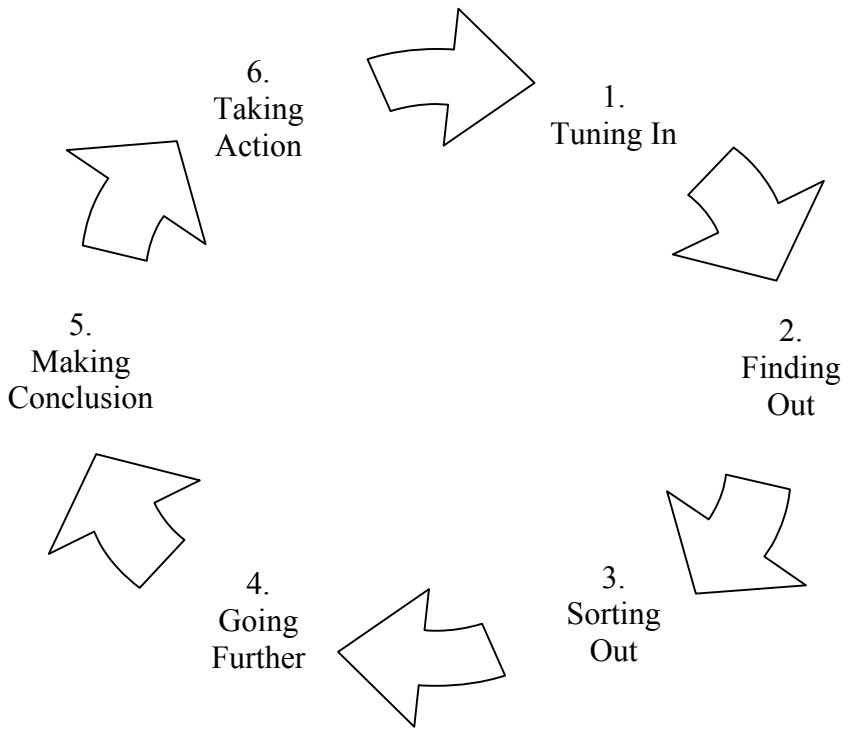


*Figure 4*. The Stages of the Cycle of Inquiry (COI)

**Tuning in.** At the onset of the cycle, the children are to contribute to the lines of inquiry by relating their prior knowledge about the theme (Murdoch, 1998, p. 11). In order to ascertain the students' understanding, pre-assessment activities were conducted such as individual child interviews and brainstorming that focused upon the questions: "What is play?" and "Why do we play?". During small group discussions, as the students shared ideas and considered what they wanted to learn about play, the teachers documented their responses. This process, referred to as "mind mapping", is a cognitive and metacognitive semiotic tool that is used to graphically represent student feedback (see Appendix AA, pp. 222-223). Murdoch (1998) describes "mind mapping" as being "a very useful way to help students organize their ideas about a topic. It can help generate questions and establish misconceptions. It is also a useful gauge of the depth of understanding a student brings to a topic" (p. 20).

**Finding out.** During this phase, the learner's intellectual curiosity should be peaked as more questions are raised and new information is gathered for potential exploration (Murdoch, 1998, p. 43). At this point, theoretically, the knowledge is first acquired while the learner interacts with peers and adults and then, as concepts and ideas are internalized. During this period, the use of semiotic tools should be rich and varied with students having access to artifacts, tools, signs, symbols, and technology to amass new information. Ideally, emergent writing and reading skills should be developed at this time so that learners can expand and develop their burgeoning research skills. The teacher is to use information gathered from student work in order to hone skills and address problems or misconceptions with which the student is having difficulty.

According to the section entitled, “How best might we learn?”, the teachers documented the use of various semiotic tools such as transdisciplinary games, discussions, books, photos, and videos to accomplish this goal. In addition, learning experiences that further promoted the LP traits were recorded in the planner (see Appendix AA, p. 223).

**Sorting out.** During this stage, the children are expected to test their hypothesis, revisit their thoughts about the central idea as a group, and/or reaffirm their original ideas (Murdoch, 1998, p. 66, Wiggins & McTighe, 1998). At this time, children should be provided with myriad opportunities for cognitive structural change. It should afford opportunities for the scaffolding of learners by both teacher and peer within the children’s zones of proximal development. Armed with more information, the learner is to review her findings with the members of her group and is encouraged to apply the information to a new range of tasks and contexts. According to Wiggins and McTighe (1998), during this period, the learner’s **“**understanding [is] revealed through performances and products that clearly, thoroughly, and instructively explain how things work, what they imply, where they connect, and why they happened” (p. 46).

In this third stage, the K2 teachers provided students with various means of processing and representing the ideas that had arisen from the Finding Out stage. With the goal of enhancing the children’s neophyte skills in print and phonological awareness, the teachers encouraged the learners to document their thoughts in their journals after each outing (see Appendix AA, p. 223). However, according to the section entitled, “To what extent did we achieve our purpose?”, procedural writing was not successful given the age of the children when the unit was first introduced (see Appendix AA, p. 224).

Moreover, the children elaborated their points of view during ongoing class discussions on skills, attitudes, and the social elements of play (see Appendix AA, p. 223). In addition, through the use of self-reflection exercises with peers, *Show and Tell* presentations, role-play, transdisciplinary games, and computer programs such as *Kidpix* and *kidsgames.org*, they were able to establish further connections with the lines of inquiry (see Appendix AA, p. 223)

**Going further.** While the teacher addresses specific learner interests which have emerged during the unit, the students are expected to continue developing their independent research skills (Murdoch, 1998, p. 89). Engaged in on-going research activities and projects, both individually or in a group, each child is to participate in the inquiry process by reassessing her current understanding. With a broader range of information, learners should hone their critical thinking skills.

Through the ongoing use of media related to play, the K2 teachers continued to develop the concepts of form, function, and responsibility. Shared cognition and multiple perspectives were acknowledged as teachers stimulated learner interests through an interactive pedagogy based on board games, musical instruments, technology, outdoor play and sports equipment (see Appendix AA, p. 223). The learning environment was further enriched by members of the local community who taught the children about toy safety (see Appendix AA, p. 224). Moreover, the attitudes and attributes of the LP were focused upon and reinforced continuously in tangible ways.

**Making conclusions.** By the fifth stage, teachers are to assist students with forming conclusions about the topic. They are to encourage learners to reflect upon their own learning (Murdoch, 1998, p. 96). At this point, the following question is raised, "To what

extent did we achieve our purpose?" (see Appendix AA, p. 224). In the attempt to answer this question, teachers are to consider the outcome of the UOI and look for evidence of student understanding of the central idea.

Regarding this stage, many open-ended questions were raised by both the K2 teachers and children throughout the course of the unit that extended the lines of inquiry (see Appendix AA, p. 224). These questions helped the teachers to inform further planning. Moreover, assessment was also used to ascertain whether links had been made between the central idea and the transdisciplinary themes. In order to do so, the teachers continually evaluated the learner's acquisition of knowledge and skills through formative assessments such as verbal questioning, journal reflections, and Show and Tell (see Appendix AA, pp. 222-223). Summative assessments were conducted at the end of the unit through the children's self-evaluation of videos of themselves playing and child-centered rubrics. According to teacher comments, "The children were surprisingly honest on [*sic*] their reflections" and provided fairly accurate evaluations of their understanding of the central idea (see Appendix AA, p. 224).

**Taking action.** The final stage represents the culmination of the UOI, the point at which theory is bridged with practice (Murdoch, 1998, p. 122). In other words, at this stage, students are to merge their understanding of the inquiry with their experiential world. At this point, student-initiated actions, both individual and in group, demonstrate the ability of the learner to "reflect, choose, and act" (*Making the PYP happen*, p. 26, Figure 10). The K2 teachers interpreted this stage differently and experienced different levels of success. In the K2 Blue group, discussions about the teacher's house flood led to colour exploration (see Appendix AA, p. 225). Evidence of the LP attributes was

recorded and posted on an "action window" in the classroom (see Appendix AA, p. 224). The K2 Red group also focused on daily attitudes and the children were awarded certificates as they demonstrated particular attributes of the LP (see Appendix AA, p. 224). The K2 Red class created treasure maps and changed the rules of the hunt (see Appendix AA, p. 225). The K2 Green class adapted the game, "What Time is it, Mr. Wolf?" and created their own base for safety (see Appendix AA, p. 225). Finally, it was noted that the most effective teacher provocation that drove the inquiry went back to the original question, "What do the games teach us?" (see Appendix AA, p. 225).

By the end of the COI, the children should have had the opportunity to co-create knowledge, individually and collectively, pursue their interests and inquiries, and deepen their level of understanding while narrowing the range of their proximal development. At times, they should have been scaffolded by their peers while, at other times, they were to have been mentors. In the process, they were to have honed their research, literacy, self-efficacy, and self- regulatory skills.

## Results

### Demographics

**Principal.** The principal of Uptown Primary School had 30 years of administrative and teaching experience in both the British National Curriculum and the IBO model of education. With a total number of 20 years of education, she had two graduate degrees at the masters level. At the time of the study, she was 57 years of age, married, and a resident of the U.A.E. She had been head of the school since its inception in 2005 and was responsible for spearheading its development from an IBO candidate school to a fully accredited IBO school in 2008. In her capacity as head of the school, she was

responsible for overseeing the Deputy PYP coordinator, the Early Years coordinator, grade level team leaders, and the teachers.

**ECE coordinator.** The ECE coordinator was familiar with both the British National Curriculum and the IBO program and had six years of teaching experience in IBO schools. With a total of 16 years of education, her specialization was in nursery education. At the time of the study, she was 32 years of age, married, and of British origin.

As ECE coordinator, she oversaw the operation of the kindergarten section of the campus (5 K1 & 4 K2 classes). In addition to her tasks as coordinator, she taught pre-kindergarten (K1) full time. At the onset of her career, she had taught pre-kindergarten, K1, and K2 in the U.K. Since then, she spent seven years in the U.A.E teaching both kindergarten levels.

**Teacher A.** Teacher A was of British origin, 33 years of age, and a single parent. According to the demographic survey, at the time of the study, she had been teaching for 10 years, the last five of which were at the K1 and K2 levels of Uptown Primary School. She had spent the first five years in non-IBO schools. This teacher completed 18 years of education and had two graduate diplomas to her credit.

**Teacher B.** The second participant, teacher B, was newly engaged at Uptown Primary and was a novice teacher (2 years). At the time of the study, she was 36 years of age, married, and a parent of two children at the school. All of her teaching experience had been in IBO school settings. With a total of 21 years of education, she earned a Masters of Science degree.

**Parents.** The parent population consisted of 10 participants whose children were enrolled in four K2 classes. In total, there were six male and four female children whose parents responded to the survey. With the exception of two children, all were born in 2004. Only one child had not attended K1 at Uptown Primary School last year but had attended nursery school in the U.K.

***Age of participants.*** The ages of the mothers ranged from 36 years to 48 years with a mean age of 38.8 years. The fathers' ages ranged between 35 to 53 years with a mean age of 40.5 years. With one exception (divorced), the parents were married, and the children were living with both parents.

***Country of origin.*** The country of origin of the parents was European ($n$ = 4), Australian ($n$ = 4), New Zealand- Maori ($n$ = 1), Middle Eastern ($n$ = 3), Canadian ($n$ = 3), and Canadian-American ($n$ = 1). Two parents ($n$ = 2) reported Caucasian for this category while two ($n$ = 2) were not reported.

***Languages spoken.*** In all cases, the language spoken at home by the parents and with the children was English, with the exception of two parents who spoke Parsee and Arabic as well.

***Education.*** The mothers' educational levels were reported as follows: high school diploma or less ($n$ = 1), some college experience ($n$ = 6), graduate level degrees ($n$ = 3). The fathers' educational levels were reported as: high school diploma or less ($n$ = 1), military training with no college education ($n$ = 1), college experience ($n$ = 5), and graduate degrees ($n$ = 3).

***Professions.*** As far as employment was concerned, of the mothers who completed the questionnaire, 7 held professional positions, 2 indicated "housewife", and 1 was not

reported. The professions included teacher (*n* = 3), librarian (*n* = 1), artist (*n* = 1), coordinator (*n* = 1), finance (*n* = 1). With respect to the fathers, with the exception of one case (unreported), all were employed (*n* = 9). The fathers' professions included law (*n* = 2), engineering (*n* = 1), managerial positions related to various disciplines (*n* = 4), military/industry training (*n* = 1), and project director (*n* = 1).

***Family income.*** The range of household income included the following categories: $ 20,000 - $ 40,000 (*n* = 1), $ 60,000 - $ 80,000 (*n* = 1), $ 80,000 - $100,000 (*n* = 1), $140,000 and above (*n* = 6), and unreported (*n* = 1).

***School pick-up.*** In four of the participating families, the mother had sole responsibility for picking up the child at school. In one family, the mother, husband, or nanny was responsible for picking up the child. Another respondent identified either parent or the use of a taxi service for the pick-up arrangement. The remaining four surveys indicated husband, helper, friend, or sister as the designated person for pick-up.

**Values and Beliefs**

In order to ascertain the values and beliefs of participants that concerned their perceptions of socio-constructivist principles of teaching and learning, with the exception of the principal, all of the Uptown Primary School participants were given open-ended questionnaires and/or rating scales regarding the content and design of a learner-centered curriculum**.** The principal was given only an open-ended questionnaire.

**Principal.** Both administrators were asked questions regarding their educational values and beliefs and how these influenced their selection of the IBO model of education (see Appendix R). In her desire to spearhead educational reform at Uptown Primary School, the principal expressed an interest in a system that reconceptualized learning as

meaningful to the individual and the classroom experience as positive and relevant to life. In her perception, “The IB is a relevant curriculum preparing students for the future. It is realistic, provoking, and highly motivating”. Her views were in keeping with the socio-constructivist pedagogical philosophy that views schooling from a holistic perspective rather than as a disjointed set of activities.

The principal referred to another issue related to her selection of the IB curriculum, that is, the teaching of the LP attributes. According to her, “It [the IB] is the only curriculum that teaches attitudes”. The role of teachers is “to espouse the attributes of the Learner Profile”. As role models, they were expected to model these attributes and nurture their development in each child.

**ECE coordinator.** The coordinator shared similar educational values and beliefs as the principal (see Appendix S). According to the ECEC, education should involve, “child-centered learning, learning for life”. For children to be lifelong learners, “education should be meaningful”.

In reference to the educational values and beliefs inherent in the IBO model that motivated her to select this system, the coordinator cited the importance of the Learner Profile (LP). Similarly to the principal, the ECE coordinator referred to the importance of the attitudes and the LP in the IBO model in her statement, “The LP not only reflects what a student should be but also what a teacher/manager should be with their team and community”.

**Teachers.** In order to tap teacher perceptions of a potential socio-constructivist learning environment, teachers were asked to respond to the Teacher Belief Rating Scale

based on their educational values and beliefs (see Appendix V). As stated in the Instruments section, the scale consisted of the following six pre-set themes:

1. Perception of the learner as a member of a community of learners (Statements 1, 2, 3, 4, 5)
2. Learner Profile traits and attributes espoused in the IB curriculum (Statements 6, 7, 8, 9, 10)
3. Developmentally appropriate practice in the IB curriculum (Statements 11, 12, 13, 14, 15, 16, 29, 3O)
4. Curriculum content to enhance cognitive and metacognitive development (Statements 17, 18, 19)
5. Transdisciplinary curriculum that follows learner interests (Statements 20, 21, 22)
6. Use of semiotic tools to advance learning (Statements 23, 24, 25, 26, 27, 28)

Overall survey results were indicative of high ratings with scores of 3 (*agree most of the time*) and 4 (*agree all of the time*), however, a difference between the teachers' ratings was apparent (see Appendix V, Table 4). While teacher A assigned 21 scores of 4, four scores of 3, and five scores of 2 (*agree sometimes*), teacher B assigned 14 scores of 4 and 16 scores of 3. In addition, neither teacher assigned a score of 1 (*do not agree*) to any of the statements, indicating that they did not disagree with any of the socio-constructivist referents.

***Teacher A.*** The high incidence of ratings of 4 was an indication of teacher A's perception that specific socio-constructivist referents should be manifested in the

classroom environment at all times. These referents included the view of the learner as a member of a community, the desired IB learner traits, and the content of the curriculum.

With regard to her perception of the learner as a co-constructor of knowledge, a valued member of the classroom community, the importance of leaner confidence and peer interaction, teacher A's scores of 3 indicated that she believed, to a slightly lesser degree, that these elements were important to learner success.

Teacher A's ratings of 2 were related to two themes that pertained to the structure of the learning environment and the use of semiotic tools for learning enhancement (statements 12, 13, 25, 27, 28). In her opinion, incorporating socio-constructivist elements such as appropriate themes and concepts, as well as, ongoing assessment strategies were important but to a lesser degree than other classroom practices.

***Teacher B.*** Teacher B's ratings of all of the themes consisted of 14 statements with which she *agreed all of the time* and 16 statements with which she *agreed most of the time.* Her ratings of 3's and 4's indicated that her perception of the learner, as well as, the content and design of the curriculum were consistent with a socio-constructivist perspective.

***Similarities and differences.*** The following table represents a comparison between teacher A's and teacher B's results on the *Belief* scale. As discussed in the Instruments section, the ratings were analyzed according to six pre-set themes that pertained to the theoretical tenets and philosophies associated with socio-constructivists referents of teaching and learning.

Table 1

*A Comparison of the Teacher Belief Rating Scale Results*

| | Rating of 2 | Rating of 3 | Rating of 4 |
|---|---|---|---|
| Teacher A | 5 | 4 | 21 |
| Teacher B | | 16 | 14 |

*Note*. 1 = do not agree; 2 = agree sometimes; 3 = agree most of the time; 4 = agree all of the time

*Perception of the learner.* The first theme focused on the image of the learner from a sociocultural perspective, that is, as a member of a learning community. It took into account the Vygotskian perspective that learning is done in concert with others rather than in isolation (Vygotsky 1978). The child's learning experiences, therefore, are considered to be a result of daily interactions with peers and adults. According to the ratings, both teachers, to slight degree of difference of +/-1, shared the perception that the social context influences the individual's cognitive development. Their shared belief was highlighted by high ratings of 3's and 4's and the perception of the classroom as a learning community at all times (statement 3).

*Learner profile.* The desired learner traits and attributes that were identified in the LP were considered for this theme. These pertained to the socio-constructivist perspective of the child as a young inquirer and thinker (Making the PYP happen, 2007). While the teachers' ratings indicated that traits such as autonomy and competence were crucial to learner success, it was apparent that the image of the child as an independent learner was

perceived a little differently by both teachers (statements 6, 7). That is, teacher A's ratings of 4 indicated the perception of the child as a capable and confident learner, whereas teacher B's ratings of 3 indicated that, in her perception, the child requires encouragement to take the initiative to do tasks on her own.

*DAP.* In order to evaluate developmentally appropriate practices, the third theme provided teachers with tangible referents of socio-constructivist teaching practices such as inquiry-based learning and interactive pedagogy. Overall ratings were diverse for the two teachers. While teacher B's ratings were high with 3's and 4's, indicating a high level of agreement with socio-constructivist practices, teacher A's results consisted of mixed ratings of 2's and 4's. The difference between the teachers' ratings was evident particularly with statements 12 and 13. While there were differences of +/-1 throughout the survey, the ratings for these two statements were on the low side of the scale, especially for teacher A with ratings of 2. Ratings for statement 13 highlighted a greater variance between teacher perceptions of appropriate classroom practices. It would seem that teacher B, to a greater degree than teacher A, perceived the incorporation of DAP concepts and ideas to be important at all times. From this perspective, teacher A's perceptions might seem less consistent with both the IBO philosophy and socio-constructivist tenets.

*Curriculum content.* In considering the development of the learner's conceptual understanding, this theme highlighted the influence of the curriculum content. Socio-constructivist theoretical principles of learning take into account the importance of problem-solving, the enhancement of language skills, and student interaction (e.g., groupings) (Vygotsky, 1978). Mutual high ratings of 4 for statements 17, 18, 19 indicated

that both teachers perceived the inclusion of each of these elements to be important for successfully enhancing the learner's cognitive and metacognitive development.

*Transdisciplinary curriculum.* The implementation of meaningful, hands-on learning experiences that are pertinent to real life is considered to be a pedagogical practice that is fundamental to learner success (Bodrova & Leong, 1996; Brooks & Brooks, 1993; Marlowe & Page, 2005). For this theme, the incorporation of such practices was evaluated from the perspective of a transdisciplinary curriculum (statements 20, 21, 22). Overall teacher ratings were high, with a slight degree of difference, particularly with regard to bridging formal knowledge with life experience and following learner interest (statements 21, 22). Teacher agreement was most evident with the shared perception of the importance of incorporating non-traditional content in the curriculum (statement 20).

*Semiotic tools.* Acknowledging the diversity of student potential, this theme concerned specific resources and teacher strategies that advance learning. According to socio-constructivist tenets, the learner has a range of interests and potential abilities that correspond with varying zones of proximal development (Vygotsky, 1978; Daniels, 2001). Each of these should be targeted by the teacher through the use of semiotic tools (Vygotsky, 1978). According to the results, both teachers perceived that the use of a stratified learning environment supports the diversity of learner needs (statements 23, 24, 26). However, similar to theme 3, there was variance between the teacher ratings with a range of 2's and 4's for teacher A and 3's and 4's for teacher B. While the differences between teacher ratings were 1 point, being on the low side of the scale, they may actually represent fundamental differences in their perceptions regarding the use of

semiotic tools. Once again, teacher A's ratings of 2 for statements 25, 27, and 28 might appear contradictory to the beliefs espoused by the IBO, whereas teacher B's ratings would be in keeping with the IBO's pedagogical philosophy concerning the use of the COI as a mechanism for teaching and learning, the importance of keeping parents informed through authentic assessment practices, and targeting learner potential.

Teacher B, on the other hand, did not rate any statements with scores of 2 (agree sometimes). It would appear that teacher B, who had less teaching experience than teacher A, might have been less discriminating in her ratings due to her inexperience or a desire to be perceived in a positive light.

**Parents.** In the open-ended questionnaire, parents were asked, "What beliefs and values about education influenced your decision to select the PYP as the model for your child's education?" (see Appendix U). Of the 10 parents, all except one (90% ; $n = 9$) expressed their educational values and beliefs in relation to the selection of the PYP. Common themes emerged from their responses pertaining to specific content and design features of the PYP curriculum. These included the following:

1. a positive approach to teaching and learning
2. a holistic method of education
3. an alternative to traditional schooling

***A positive approach to teaching and learning.*** Nine parents attributed their selection of the Uptown Primary School to its positive approach to education and meeting their child's needs. In regard to this theme**,** two parents stated that they liked the fact that the PYP involved "inquiry- based, and project approach" and learning through play (participants 6, 7).

***A holistic method of education.*** The parents expressed an interest in an approach that concentrated on the education of the whole child. Four parents selected Uptown Primary School because they felt that the PYP curriculum enabled their child to develop socially and academically. This was also reflected by one parent in regard to her child who had special needs (participant 3). According to participant 2's perception, the PYP enabled children "to think as global citizens who are open-minded". Participant 8's reason, on the other hand, took in to account the next theme, that is, she found the holistic nature of the PYP to be an appealing alternative to the traditional academic curriculum.

***An alternative to traditional schooling.*** Parents reported being drawn to the PYP due to its approach in dealing with both the child's cognitive and metacognitive development. Participant 8 expressed a preference for "a direct and interactive way of learning" rather than the rote method. She had selected the PYP based on her desire to have her child taught "how to question and reflect" upon her learning. Participant 2 shared this perspective in the statement, "They [children] need to know how to access information and knowledge. They will need to be able to evaluate this information and decide how to use it".

Two parents stated that they were interested in the PYP model because it provided meaningful learning experiences. In this regard, participant 1 stated, "I bought into the teaching concept which stimulates them [children] to be creative. A new teaching [way that is] away from traditional teaching methods". Sharing this perspective, participant 9 added, "It [PYP] provides a broad base for learning and the flexibility necessary for a transient lifestyle. We value experience over classroom learning and this is appreciated in the PYP".

## Teacher Practices

In order to ascertain whether the teachers' perceptions of their classroom practices were in keeping with their pedagogical values and beliefs, the teachers were asked to evaluate their own classroom practices in the Teacher Practice Rating Scale (see Appendix W, Table 5). As stated in the Instrument section, the analysis was done according to six pre-set themes related to socio-constructivist theories.

According to the responses on the questionnaire, teacher B had more variance in her ratings than teacher A. However, teacher A's self-evaluation of her teaching practices appeared to be more consistent with her beliefs. In addition, due to the fact that no score of 1 was assigned to any of the statements, overall ratings would suggest that both teachers perceived themselves to be effectively implementing practices that were based on socio-constructivist referents.

**Teacher A.** With one exception (statement 27), teacher A's overall ratings were scored almost evenly with 3's and 4's. While there was a higher incidence of 3's for themes related to the use of developmentally appropriate content and strategies, scores of 4 were assigned consistently to the theme pertaining to a transdisciplinary curriculum. In general, teacher A's scores reflected her perception of her classroom as one in which the learner felt a sense of community, experienced personal, social, and cognitive growth, and was engaged in meaningful learning experiences.

**Teacher B.** Teacher B had a higher frequency of ratings of 3 and more ratings of 2 than teacher A. Teacher B's ratings indicated her perception that the majority of the socio-constructivist elements were implemented in her classroom practices frequently rather than always. This was evident particularly in her self-assessment of teacher skills

pertaining to the promotion of learner self-regulation (theme 2) and transdisciplinary curriculum planning (theme 5).

**Similarities and differences.** The following table represents a comparison between teacher A's and teacher B's results on the *Practice* scale.

Table 2

*A Comparison of the Teacher Practice Rating Scale Results*

| | Rating of 2 | Rating of 3 | Rating of 4 |
|---|---|---|---|
| Teacher A | 1 | 15 | 14 |
| Teacher B | 3 | 20 | 7 |

*Note*. 1 = does not occur; 2 = occurs sometimes; 3 = occurs frequently; 4 = occurs always

***Perception of the learner.*** In assessing the extent to which their classroom represented a community of learners, the teachers considered how the individual was situated within it. According to the results, Teacher A and B were in agreement that the learner was a valued member of the class and that she *frequently* or *always* engaged in meaningful experiential learning activities. The high ratings, therefore, were indicative of the teachers' perceptions that they were effectively promoting the IB philosophy and its socio-constructivist perspective of learning as a social act.

***Learner profile.*** The learner traits and attributes that were deemed desirable for the overall development of the learner were highlighted in this theme. The ratings, mostly in the high range with scores of 3 and 4, were indicative of the teachers' perceptions that traits such as self-regulation and learner confidence were being instilled successfully in

their students. However, statement 7, "The learner is encouraged to take the initiative to do tasks on her/his own", presented the greatest degree of variability with scores of 4 for teacher A and 2 for teacher B. This rating may reflect the fact that teacher A, who had more teaching experience, perceived herself to be more adept at promoting self-efficacy in her students than teacher B.

***DAP.*** In regard to the structure and quality of the learning environment, both teachers perceived their classrooms to be functioning similarly. Their ratings, mostly scores of 3 were indicative of their perception of being skilled at implementing socio-constructivist features such as an interactive pedagogy and a stimulating environment (statements 14, 30). However, their perceptions differed in the degree to which their students were learning appropriate and interesting concepts (statement 13). Teacher B's rating of *occurs sometimes* may have reflected the fact that due to a limited amount of teacher experience, it was more difficult to attain this goal.

***Curriculum content.*** In assessing the appropriate curriculum content for the promotion of cognitive and metacognitive development in the learner, teachers took into account problem-solving, the development of language skills, and the organization of student grouping in classroom activities (statements 17, 18, 19). Based on their high ratings, to a slight degree of difference, it would appear that both teachers had the perception that their students' levels of conceptual understanding were enhanced successfully through effective and appropriate planning and structure of the curriculum.

***Transdisciplinary curriculum.*** Socio-constructivist principles pertaining to the content of a transdisciplinary curriculum that extended traditional academic learning, connected home and school, and followed learner interest were the focus of this theme

(statements 20, 21, 22). The difference in teacher perception was evident with teacher A's ratings of 4's and teacher B's ratings of 2's and 3's. While teacher A's ratings indicated her perception that these pedagogical goals were incorporated successfully through the curriculum, teacher B's ratings indicated otherwise. This was particularly evident regarding the implementation of a transdisciplinary curriculum that focused on learner interest (statement 22). In teacher B's perception, this goal was not accomplished successfully in her classroom.

***Semiotic tools.*** The last theme, which linked teacher practices with learner needs, concerned the use of semiotic tools such as the COI, scaffolding, and assessment (statements 25, 26, 27). While both teachers assigned mostly scores of 3 and 4, teacher A's ratings had more variance with the addition of one score of 2. Although their overall ratings for this theme highlighted a perception that they effectively addressed the need for differentiated learning through the inclusion of activities, specific skills, and semiotic tools (statements 23, 24, 25, 26, 28), their views differed regarding the use of ongoing assessment (statement 27).

**A Comparison of Teacher Beliefs and Practices**

As indicated in the table below, this section presents a comparison between the results of both scales for both teachers. As discussed in the Instruments section, the similarities and differences were analyzed according to six pre-set themes that pertained to the theoretical tenets and philosophies associated with socio-constructivists referents of teaching and learning.

Table 3

*A Comparison Between the Teacher Belief and Practice Rating Scale Results*

| | Teacher A | | Teacher B | |
|---|---|---|---|---|
| Rating | Teacher Belief Rating Scale | Teacher Practice Rating Scale | Teacher Belief Rating Scale | Teacher Practice Rating Scale |
| 4 | 21 | 14 | 14 | 7 |
| 3 | 4 | 15 | 16 | 20 |
| 2 | 5 | 1 | | 3 |

*Note*. For Teacher Practice Rating Scale: 1 = does not occur; 2 = occurs sometimes; 3 = occurs frequently; 4 = occurs always. For Teacher Belief Rating Scale: 1 = do not agree; 2 = agree sometimes; 3 = agree most of the time; 4 = agree all of the time.

**Teacher A.** According to the results of this chart, there appeared to be inconsistencies between what both teachers believe in and what they do in their classrooms. It was evident from the results that the variance in the scales was greater for teacher A. In the comparison of ratings between the two scales, 16 ratings remained the same, one rating differed by +2, four ratings differed by +1, and nine ratings differed by -1. These ratings reflected the discrepancies across all of the themes with the exception of the fourth one that pertained to structuring the curriculum content for the enhancement of cognitive and metacognitive development.

Although her ratings were high for both scales, the variance between the two scales was most evident with the five ratings of 2 in the *Belief* scale versus one rating for practices. As in the case of targeting the learner's potential (statement 28), it would

appear that although teacher A did not agree with certain pedagogical beliefs, she implemented them in her teaching practices. This also proved to be the case with four ratings of 3 in the *Belief* scale versus 15 ratings of 3 for practices. The higher frequency in her ratings of 3 (*occurs frequently*) for practices versus beliefs thereby indicated that many classroom practices were implemented in her classroom although she did not always believe in them.

Conversely, while there were 21 ratings of 4 in the *Belief* scale, there were 14 ratings in the *Practice* scale thereby indicating that several pedagogical beliefs were not incorporated with the frequency that one would have expected. The most notable difference in the ratings appeared for statement 12 which concerned inquiry-based learning through the use of significant themes. While teacher A expressed agreement in the *Belief* scale that the incorporation of significant themes was *sometimes* important, her rating of 4 in the *Practice* scale indicated that, in her perception, they were always incorporated in her curriculum planning. Teacher A's rating may be reflective of the fact that the use of themes per se was done in accordance with the provisos of the IB curriculum rather than her pedagogical beliefs**.**

**Teacher B.** In general, teacher B's overall high ratings reflected her perception that the majority of her teaching practices and strategies were in keeping with her pedagogical values and beliefs. In the comparison of ratings between the two scales, 12 ratings were the same, four ratings differed by +1, 13 ratings differed by -1, and one rating differed by -2. However, there was more variance in her ratings of the *Practice* scale versus the *Belief* scale suggesting that teacher B has ideals which, in some cases, were more difficult to put into practise while others were implemented more successfully.

With a higher frequency of 3's and a lower frequency of 4's in the *Practice* scale, teacher B's ratings indicated that, as a novice teacher, she had difficulty incorporating *all* of the socio-constructivist tenets in her teaching practices. With a variance of 16 ratings of 3 for beliefs versus 20 ratings for practices, this discrepancy might also suggest that, in some cases, she incorporated practices that did not support her beliefs.

This trend also appeared to be the case for her ratings of 2 which appeared across three themes pertaining to the perception of the learner, DAP, and the transdisciplinary curriculum. Her three ratings of 2 for practices versus none for beliefs might be indicative of the fact that some beliefs were more difficult to implement as practices such as the presentation of interesting concepts to the learner (statement 13).

In the case of the ratings of 4, it would seem that although her pedagogical beliefs and values may have guided many of her teaching principles, not *all* of them were manifested in the classroom to the extent that one would expect such as in the use of problem solving and scaffolding (statements 17, 26). In other words, teacher B's ideals did not always correspond to her practices.

***Perception of the learner.*** With regard to the perception of the learner from a sociocultural context, the teachers' ratings for both scales were high with 3's and 4's within a slight degree of difference of +/-1 thereby suggesting that their beliefs were supported by their practices. This was evident, in particular, with their mutual ratings of 4 regarding their perception of the classroom as a community of learners. In other words, both teachers perceived their classrooms as fostering the spirit of socio-constructivism through a sense of community.

***Learner profile.*** While there was a high level of correspondence between teacher A's ratings of the two scales, the majority of teacher B's ratings differed by a slight degree of +/-1. Although both teachers agreed that it was important to encourage competence, self-regulation, and confidence in the learner, teacher A's ratings seemed to suggest that she perceived herself to be more adept at instilling these traits than teacher B. According to A's perception, her teaching practices effectively supported the learner's personal and social development. It would appear that for teacher B, on the other hand, these goals were not attained at the level (3) that one would have expected given her beliefs. This was evident in the ratings for statement 7 in the *Practice* scale which pertained to learner self-efficacy. While teacher A's rating was 4, teacher B's was 2.

***DAP.*** For this theme, both teacher ratings showed variance between the results of the two scales. Teacher A's lower ratings of 3 in the *Practice* scale might reflect her perception of herself as being less effective at implementing certain classroom practices such as the incorporation of prior knowledge and hands-on activities (statement 11, 16). Conversely, a higher frequency in her ratings for statements 12 and 13 in the *Practice* scale indicated that she incorporated some practices despite the fact that she did not believe in them as strongly.

Most of teacher B's ratings, in comparison, seemed to indicate that her beliefs were supported by her curriculum planning and practices such as the incorporation of prior knowledge and an interactive pedagogy (statements 11, 14). Unlike teacher A, however, her rating of 2 regarding the incorporation of appropriate and interesting concepts (statement 13) indicated that not all of her beliefs manifested themselves in successful classroom practices.

***Curriculum content.*** The fourth theme, which concentrated on specific content and strategies to enhance cognitive and metacognitive skills, resulted in similar ratings for both teachers. That is, both teachers' high ratings of 4 regarding the effectiveness of problem-solving and language skills in the *Belief* scale differed to a slight degree of -1 in the *Practice* scale thereby indicating that they perceived themselves to be less effective at implementing these practices than one would expect (statements 17, 18). However, in the case of the effective use of student grouping for learner enhancement, their mutual ratings of 4 in both scales indicated a correspondence between their perceptions of their beliefs and their practices (statement 19).

***Transdisciplinary curriculum.*** This theme took into account the teachers' perceptions of a non-traditional curriculum, the home and school connection, and the structure of a transdisciplinary curriculum (statement 20, 21, 22). Teacher ratings were indicative of mixed results. That is, teacher A's ratings were high with 4's for both scales thereby indicating a correspondence between her perception of beliefs and practices.

Teacher B's ratings, on the other hand, showed variance with a range of ratings from 2 to 4 between the two scales. While her rating of 3 regarding experiential learning (statement 21) showed correspondence between her beliefs and practices, her ratings for statements 20 and 22 indicated otherwise. In other words, although teacher B appeared to espouse a firm belief in non-traditional learning, this was not supported by her practices to the extent one would expect (statement 20). The inconsistency between teacher B's beliefs and practices, however, was even greater with ratings on the low side of the scale regarding the content of the transdisciplinary curriculum (statement 22). That is, her ratings of 2 for practices and 3 for beliefs might be indicative of her perception of herself

as being less skilled at implementing tenets that she believes in such as a curriculum that follows learner interest.

***Semiotic tools.*** The last theme presented teachers with a specific context with which to identify and assess their use of semiotic tools in the classroom. While teacher A appeared to be more discriminating with a wider range of scores for both scales, there was a concurrence between her beliefs and practices with the exception of statements 25 and 28. Her ratings of 2 for beliefs versus 3 for practices for these two statements might indicate that she implemented the use of the COI and attempted to target the learning potential of all of her students even though she disagreed with these practices. Regarding her perception of the use of assessment (statement 27), however, her low rating of 2 corresponded between both scales thereby indicating that she practised what she believed despite the demands of the IBO.

Most of teacher B's perceptions of her classroom practices corresponded with those of her beliefs with ratings of 3's and 4's for both scales. With the exception of statements 23, 27, and 28, her ratings differed slightly by +/-1 thereby indicating that most of her practices supported her pedagogical beliefs. According to her perception, she was highly skilled at incorporating certain semiotic tools such as differentiated learning activities and the COI (statements 23, 25). Unlike teacher A, teacher B perceived the COI to be an effective learning tool and was incorporating it successfully in the classroom. Her ratings of statements 24 and 26, on the other hand, indicated that she perceived herself to be less skilled at supporting learner needs through the use of specific teaching techniques and scaffolding.

**ECE Coordinator Rating of Teacher Practices in the K2 Classroom Scale**

The main purpose of the ECE Rating of Teacher Practices in the K2 Classroom survey was to tap the ECE coordinator's perceptions of the K2 teachers' practices from a socio-constructivist perspective (see Appendix Y). The same six pre-set themes as the teacher scales were used for this analysis.

With the exception of one rating of 2 (*occurs sometimes*), the ECE coordinator assigned high ratings of 3 (*occurs frequently*) and 4 (*occurs always*) (see Appendix Y, Table 6). Of these two categories, 19 responses were rated as *occurring frequently* while 10 were rated as *occurring always* thereby indicating her perception that teacher practices adhered to the philosophy of the IB curriculum, that is, one which implemented socio-constructivist principles of teaching and learning.

In the comparison of teacher ratings on the Teacher Practice Rating Scale and the ECE coordinator's ratings on the ECEC Rating scale, out of 30 statements, 23 items were rated similarly to both or one teacher's responses and seven items differed. Of these seven statements, the ECE coordinator rated three statements higher and four statements lower. Similar to the teachers, none of the statements was rated a 1 (*does not occur*). These similarities and differences were examined in each of the following themes.

**Perception of the learner.** In the first theme, the ECE coordinator evaluated the extent to which the K2 teachers incorporated activities that highlighted the importance of mediated learning within a community of learners. Similar to the teachers, her high ratings were indicative of her perception that teachers created a positive social context for children to engage in meaningful learning experiences. In her opinion, this was

particularly reflected by the fact that members always constructed knowledge together (statement 2).

**Learner profile.** With respect to the second theme, the ECE coordinator considered whether teachers encouraged the personal, social, and cognitive development of the learner. According to her high ratings of 3's and 4's, it would seem that the ECE coordinator's perception was similar to the teachers. That is, the teachers' practices and activities promoted the development of the learner from all of these perspectives. In her opinion, teachers viewed the child as a capable learner and encouraged self-regulation in the child (statements 6, 8).

**DAP.** In the third theme, the coordinator focused on whether teachers were adept at creating an environment that accommodated the diversity of interests, abilities, and learning styles of the students. The ECE coordinator's overall ratings of mostly 3's were consistent with the teachers' ratings for this theme. It would seem that both the coordinator and the teachers shared the perception that the K2 learning environments were conducive to implementing several socio-constructivist principles related to the incorporation of the learner's prior knowledge, interactive pedagogy, and peer interaction (statements 11, 14, 29).

**Curriculum content.** This theme highlighted specific principles of cognitive and metacognitive development that stimulated the learner's conceptual understanding, promoted language enhancement, and provided multiple perspectives of learning (statements 17, 18, 19). While the ECE coordinator's ratings of 3 were indicative of a shared perception with teachers that these features were frequently manifested in the classroom environment, her rating of the effective use of student grouping was slightly

lower than the teachers by a difference of 1. In other words, she did not agree that the strategic grouping of students was providing learners with shared perspectives and quality experiences.

**Transdisciplinary curriculum.** In the fifth theme, the transdisciplinary nature of the PYP curriculum was highlighted. In the related statements (statements 20, 21, 22), the ECE coordinator assigned the rating of occurs always as did teacher A. In her opinion, through the concerted effort of all of the teachers at the K2 level, the learners were provided with an education that extended beyond academic content, consolidated the experiences of home with school, and highlighted learner interest. Her rating, however, contrasted with teacher B's rating of 2 with regard to the implementation of a transdisciplinary curriculum that effectively followed the learner's interests.

**Semiotic tools.** The last theme incorporated elements related to teacher practices and specific strategies that facilitated learning. It consolidated socio-constructivist theories related to differentiated learning, semiotic tools, and targeting learner potential. Overall ratings were similar to teacher B's ratings as they consisted of scores of 3. It would seem, therefore, that the ECE coordinator perceived teacher practices as effectively supporting the diverse needs of the learners through a variety of learning strategies including assessment (statement 27). However, teacher A's rating of 2 for both items was indicative of her perception that assessment need not be implemented on an ongoing basis.

Conversely, statement 25, which concerned the effectiveness of the COI as a pedagogical tool, was the only statement rated with 2 in the whole survey. Considering the importance accorded by IBO proponents to the COI as a mechanism for teaching and

learning, it was interesting to note that, from the ECE coordinator's perception, this tool was not embedded effectively while teachers perceived that it was.

**Parent Survey**

The parents were asked to assess the teachers' pedagogical practices according to their perception of the content and design of the K2 curriculum (see Appendix Z). As mentioned in the Instruments section, this scale was designed to provide insight into the parents' perception of their children's learning environment according to five pre-set themes that were based on socio-constructivist referents of teaching and learning.

Of the 10 participants who responded to the survey, only seven filled out the open-ended section. In the rating section of the survey, there were 120 responses, 13 ratings of *uncertain* (11 % ; $n$ = 13/120); 60 ratings of *agree* (50 % ; $n$ = 60/120); and 47 ratings of *strongly agree* (39 % ; $n$ = 47/120) (see Appendix Z, Table 7). In other words, 89% of the responses were positive with absolutely no responses in the more negative category of disagree or strongly disagree.

**Perception of the learner.** The first theme concerned the perception of the child as a co-constructor of knowledge within the social context of a learning community (statements 1, 2). According to the results of 11 ratings of *strongly agree* (55% ; $n$ = 11/20); eight ratings of *agree* (40 % ; $n$ = 8/20); and one rating of *uncertain* (5% ; $n$ = 1/20), parents expressed a high level of satisfaction with the quality of their children's learning environment. With the exception of one rating of *uncertain*, the parents' ratings of *agree* and *strongly agree* indicated a perception of the teachers' practices as fostering a positive learning environment, one that promoted a sense of community. This was reflected in participant 4's comment, "J is valued and supported and has many friends in

the class and is confident to approach adults in class". The parents' ratings and comments supported the ECE coordinator's and teachers' high ratings of 3 (*occurs frequently*) and 4 (*occurs always*) for this theme (see Tables 5, 6)

**Learner profile.** The holistic development of the child, an important socio-constructivist tenet, was addressed in this theme (statements 3, 4). With nine ratings of *strongly agree* (45 % ; *n* = 9/20); 10 ratings of *agree* (50 % ; *n* = 10/20); and one rating of *uncertain* (5% ; *n* = 1/20); it would seem that parents highly agreed that their children's overall needs were being met by teacher practices. This view was supported by participant 9 who cited the use of a "traffic light behavior system" as an example of teacher strategies that promoted pro-social behavior. Participant 3 also provided insight about her child's overall development by stating, "My son is progressing well in each of these areas and regularly tells me things that have happened during the day. He is certainly growing in all areas". Parent feedback, therefore, would seem to correspond with the perceptions of the ECE coordinator and teachers concerning the successful enhancement of the desired learner attributes and skills through the classroom activities.

**DAP.** With respect to developmentally appropriate practices that enhance learning, several statements were clustered together that concerned teachers' pedagogical practices (statements 5, 6, 7, 9, 12). These statements consolidated a number of socio-constructivist elements such as prior knowledge, experiential learning, hands-on activities, and the aesthetics of the classroom environment. With 16 ratings of *strongly agree* (32 % ; *n* = 16/50); 27 ratings of *agree* (54 % ; *n* = 27/50); and seven ratings of *uncertain* (14 % ; *n* = 7/50), it would seem that the parental level of satisfaction was high. The parents' perception of their children's learning environment was that it engaged them in authentic

and meaningful learning experiences and enabled them to deepen their conceptual understanding by relating prior knowledge. Participant 2's statement that her child experienced "a natural progression in learning while using knowledge such as *Letterland* for vocabulary" provided insight in this regard. In terms of real life experiences (statement 6), participant 3 commented, "My son has learnt through excursions and classroom discussion time".

As in the case of the first two themes, the parents' ratings and comments corresponded with the high scores provided by the ECE coordinator and teachers, thereby, indicating a shared perspective that teachers engaged their learners in developmentally appropriate activities which enhanced their cognitive development.

**Transdisciplinary curriculum.** With regard to this theme, parents evaluated another pertinent socio-constructivist referent, that is, the importance of diverse sociocultural settings and their link to the child's learning (statement 8). With four ratings of *strongly agree* (40 % ; $n$ = 4/10); five ratings of *agree* (50 % ; $n$ = 5/10); and one *uncertain* (10 % ; $n$ = 1/10), it would appear that parents were highly satisfied with the home-school-community connection. It is interesting to note, however, that while their ratings supported the ECE coordinator's and teachers' high scores for this statement, their comments did not offer insight into how their children's education was linked successfully to the family and community settings other than via teacher outreach such as "diary, reading logs, the kindergarten newsletters, and the reporting system" (participant 2). Participant 8, on the other hand, expressed a desire for "more Arabic experiences" for her child.

**Semiotic tools.** The last theme pertained to making learning visible (statements 10, 11). In this regard, two important socio-constructivist referents were considered, that is, the display of the child's conceptual understanding from different perspectives and the effective use of ongoing assessment (statements 10, 11). Overall ratings of seven *strongly agree* (35 % ; *n* = 7/20); 10 *agree* (50 % ; *n* = 10/ 20); and three *uncertain* (15 % ; *n* = 3/20) indicated that while the majority of parents agreed with most of the statements, there was a degree of uncertainty for this theme.

Insofar as the display of children's work in a variety of ways (statement 10), participant 9 mentioned that "Reading logs, art projects, performances give insight on a regular basis". With regard to keeping the parents informed of their children's learning (statement 11), however, the descriptive data was not only limited but indicative of contrasting opinions. While one parent (participant 2) provided examples with, "student conferences, reports and portfolios", another parent (participant 4) commented, "Not regularly informed about teacher evaluations. Reports are uninformative".

**Teacher Chart: Connecting Beliefs with Classroom Practices**

In order to ascertain the manner in which their pedagogical beliefs corresponded with their practices, the teachers identified specific classroom activities and tasks that occurred in their classrooms. As stated in the Instruments section, the statements were presented in six pre-themes that were based on socio-constructivist referents (see Appendix X).

**Perception of the learner.** The perception of the learner is of major importance to the application of a socio-constructivist philosophy of teaching and learning. It provides a strong foundation for the student's future learning. In the PYP, the adult (i.e., principal,

teacher, parent, is considered to be instrumental in facilitating "the process of empowering students" (*Making the PYP happen*, 2007, p. 7). In both the Teacher Belief and Teacher Practice Rating scales, the teachers validated their perception of the learner as a member of a classroom community with high ratings of 3 or 4.

Teacher A's examples highlighted this perspective through her explanation of the role of the teacher "as an inquirer at the table" and that, in her class, "We value teamwork". Teacher B expressed the fact that, as a member of the community, she did not have the same experiences as the students and, therefore, was in a position to learn from them. Teacher B also reported, "Each child is given a chance to answer questions and give their opinion in class".

**Learner profile.** The level of autonomy accorded to the child in the daily classroom activities is influenced by the teacher's perception of the child. From a socio-constructivist perspective and that of proponents of the IB, the child should be treated as a thinker and self-directed learner (*Making the PYP happen*, 2007, p. 7). In this regard, teacher A stated that she was "always looking for what they can do, not can't do" and cited bag-packing and self-check in as two examples of self-efficacy skills that were promoted. To encourage self-regulation, she provided examples of a green/red light system and asking the question, "What do you think should happen now?". Teacher B cited the technique of self-selecting activities that had to be completed during the week.

In all of the cases, self-efficacy and self-regulatory skills were promoted through the use of cognitive and metacognitive semiotic tools that were reflective of Vygotskian theoretical tenets. Their use enabled the learner to increasingly take responsibility for personal and academic development.

**DAP.** Some of the PYP's referents for developmentally appropriate practice concern the following socio-constructivist principles: building on the learner's prior knowledge, presenting interesting concepts, engaging the learner in appropriate hands-on activities, and the provocation of learning through significant themes (*Making the PYP happen*, 2007, p. 29).

In regard to these provisos, teacher A cited the use of "a spinning wheel of [conversation] starters to initiate participation" which tied in prior knowledge. She described the inclusion of hands-on activities that were of interest to the learner such as **"**onion versus apple tasting activity". Teacher B made reference to the inclusion of many interactive games such as math, computer and board games, and a number of manipulatives. She also explained that, in addition to play, the children learned about the concept of tool use.

**Curriculum content.** According to the PYP, the acquisition of skills such as literacy and the ability to understand abstract concepts are essential tools for conducting student-led inquiry (*Making the PYP happen*, 2007). With this in mind, this theme focused on the development of cognitive and metacognitive abilities through a problem-solving curriculum, the enhancement of language skills, and student grouping (statements 17, 18, 19). Teacher A's examples of varied levels of teacher questioning reflected her belief that everyone learns differently. She provided examples of grouping and regrouping of students for math, phonics, and reading. Teacher B, on the other hand, provided examples only of language skill enhancement strategies such as phonics, interactive games, and a reading program. Both teachers provided examples of an interactive pedagogy that targeted learner potential.

**Transdisciplinary curriculum.** While the PYP acknowledges the importance of the traditional subjects, it also accords a significant role to subjects that transcend their boundaries (*Making the PYP happen*, 2007, p. 11). For this theme, teacher A reported that her students were exposed to learning beyond traditional subjects such as life skills that involved closing the door to save on air-conditioning. Teacher B's example pertained to learning about tool use. Regarding the connection between academics and school, teacher A mentioned that the children would be going on outings to visit the community (e.g. local university). In terms of a transdisciplinary curriculum that was coherent and followed the interests of the learner, she cited the example of three worktables with pattern exploration in math, recount writing in language, and UOI activity assessments.

**Semiotic tools.** Similar to the Vygotskian perspective of cognitive development, the developers of the PYP curriculum acknowledge the fact that learning occurs differently for each child (*Making the PYP happen*, 2007, p. 7). For this theme, the focus was on the use of semiotic tools and resources to support and assess the learner's cognitive and metacognitive development. Through teacher A's examples, it was evident that the different learning abilities, skills, interests, and potentials of her students were acknowledged. She structured language activities to accommodate a range of abilities from the writing of words for a poem to constructing full sentences. In addition, she reported teaching strategies for independent writing such as the use of a *word wall* chart.

Teacher B also cited specific strategies that stratified learning experiences according to the needs and potential of her students. Her examples included grouping children to work on alphabet letter recognition, beginner phonics, and phonic blends. She reported using the daily message to scaffold learners as they develop handwriting skills

and the writing of sentences. In addition, teacher B explained that ongoing assessment was done through weekly observations.

**Parent Open-Ended Questionnaire**

The purpose of the last section of the parents' open-ended questionnaire was to determine the reasons why parents selected the PYP and their level of satisfaction with the curriculum (see Appendix U). With this in mind, they were asked a two-part question:

a) "What were your expectations of the Early Childhood Primary Years Programme at Uptown Primary School?"

b) "Has it met your expectations so far?"

Responding to the open-ended questions as one answer rather than as separate replies, 90% ($n$ = 9) of the parents participated in this questionnaire. Of the 9/10 who replied, seven responded positively (78%), one (participant 1) stated that her expectations were not met, and one (participant 5) explained her expectations but did not elaborate as to whether they were met. Of the 78 % ($n$ = 7) who expressed agreement, their responses led to the coding of the following themes: children's happiness and security, learning through inquiry and play, and the development of academic and social skills.

**Children's happiness and security.** With respect to the first theme, parents reported that their children's happiness at school was of paramount importance. Participant 6 expressed this opinion by stating, "My expectation was a home away from home". Participant 2 corroborated the view of the school as a safe haven, one that should provide "a happy, safe and exciting environment to learn in" (participant 2). Participant 3 stated that she wanted her children to experience "…fun and enjoyable learning".

**Learning through inquiry and play.** For the second theme, the parents' expectations concerned their perception of a positive approach to education. Participant 1 stated, "My expectation is to allow my daughter to learn through exploration and learn to ask questions and be stimulated and encouraged". Participant 6 acknowledged these provisos in stating that children "need to learn through play and have fun …not stressing about memorizing".

**Development of academic and social skills.** The last theme focused on a holistic perception of learning that concentrated on the development of the whole child. Participant 8 wanted her child to develop the traits of an autonomous student, that is, "a confident and independent learner". Participant 9 agreed with this goal and wanted her "child to be prepared for primary school socially and educationally".

**Parental Level of Satisfaction**

Descriptive data from the last question of the open-ended questionnaire, "Has it met your expectations so far?", indicated that the parents' overall level of satisfaction with the PYP model was high. Responses from the nine parents revealed that their interest in the PYP stemmed from their views about learning and the desire to find an alternative approach to education. However, it must be noted that while a majority of the parents indicated that they were highly satisfied, they elaborated with few examples to explain their opinions.

Of the 78% who expressed agreement, it was found that their expectations had been met with respect to the three themes. For the most part, parents validated their answers with specific reasons such as those of participant 3 who stated, "Firstly, and most importantly, we wanted our children to be happy and so far they both enjoy their

schooling experience". In reference to theme 2, participant 8 reported," This year in K2, I can see these qualities [confident independent learner] shine through and I feel my expectations are being met". Pertaining to a positive and stimulating learning environment, participant 2 commented about the last theme in the following statement, "They teach the core skills through inquiry and play. I am very happy with my child's progress".

## Discussion

For the present study, it was assumed that the manner in which Uptown Primary School functioned was in keeping with socio-constructivist principles of teaching and learning.

From the information gathered in the CCP, the UOI planner, as well as, the survey ratings and questionnaires, ample evidence was provided to conclude that the PYP curriculum, as implemented at the K2 level of the school, conformed to the theoretical tenets of socio-constructivism.

### Values and Beliefs

Based on the descriptive data from the first section of the open-ended questionnaires and the Teacher Belief Rating Scale, conclusions were drawn about the principal's, ECE coordinator's, teachers', and parents' educational values and beliefs that shed more light on their perceptions of the PYP as an authentic socio-constructivist curriculum model.

**Principal.** The principal, similarly to the ECE coordinator, expressed the belief that education should instill in the child a predisposition for lifelong learning. She stated, "Education is lifelong learning and must reflect life and its experiences". Her decision to

adapt the IBO model for Uptown Primary School was based on the premise that learning should be meaningful and experiential. It was also based on her perception that education involves a shared commitment by all members of the learning community to provide children with the opportunity to build knowledge.

As the head of the school, she was responsible for "developing, maintaining and enhancing a school environment that enhances effective learning" (Henson, 2003, p. 1). In doing so, her pedagogical values and beliefs were reflected in the selection of staff members and the management of the school in a number of ways. To begin with, from her perspective, the ECE coordinator was to mentor teachers in regards to the IBO curriculum model. Secondly, teachers were not only expected to become proficient in adapting its curriculum design but to reflect its philosophy through the LP attributes which contribute to the development of the whole child. Thirdly, the development of the UOI was to be done as a collaboration between students, parents, and teachers. Each of these was an important undertaking that reflected socio-constructivist tenets concerning the perception of school as a community of learners.

**ECE coordinator.** The ECE coordinator shared common pedagogical views about education and learning with the principal. She elaborated on this perspective by stating, "We should never stop wanting to learn". The coordinator was also in agreement with the principal's perception of the teacher's role of emulating the attributes of the LP. Her referral to the teacher as a member of a "team and community" highlighted her belief that school was a learning community, one that fostered collegiality among its members.

In explaining the adaptation of the PYP to the needs of Uptown Primary School, she reflected upon her own work experiences as a teacher and coordinator at the K level.

Her statement, “The PYP allows for student-led inquiry and child-based learning”, reflected the socio-constructivist tenet regarding the importance of following learner interest.

**Teachers.** In order to evaluate whether the teachers’ pedagogical philosophies were in keeping with core socio-constructivist principles of teaching and learning, teachers were given the Teacher Belief Rating Scale (see Appendix V). According to both teachers’ high ratings, there was a shared belief in many socio-constructivist theoretical tenets. These beliefs underscored a child-centered and positive learning environment, the engagement of knowledge construction as joint meaning-making, and the promotion of independent learning, autonomy, and cooperation.

On the other hand, while the teachers shared common perceptions about the learner, the construction of knowledge, the classroom environment, and curriculum content, their ratings highlighted some differences concerning other pedagogical beliefs. From Teacher A’s ratings of 2, it would appear that some of her beliefs were incompatible with socio-constructivist theories. However, taking into account that teacher A is an experienced kindergarten teacher, her low ratings may be indicative of her belief in an alternative approach to teaching. As indicated in her open-ended responses, she may have had a preference for a less structured learning environment, one which would permit more spontaneity and freedom for the teacher and the learner to co-construct knowledge. Likewise, she may not have perceived the COI as a semiotic tool that complemented her teaching method. Regarding ongoing assessment, teacher A’s rating may have reflected that it was difficult to provide parents with information concerning their child’s overall development in addition to what was already being done (e.g., parents’ night, 3-way

conferences). In addition, she may have believed that targeting the learner's potential is a challenging task to accomplish for each child at the beginning of the year.

Moreover, while the difference in ratings may be attributed to the teachers' diverse pedagogical philosophies, teacher B's responses may actually have resulted from her inexperience as a novice teacher. That is, teacher B may have designated high scores throughout the survey based on her perception of what the ideal responses should be. She may have perceived it to be important to respond positively and, therefore, was less discriminating.

In conclusion, while neither teacher disagreed with any of the statements, teacher A's responses were on the high side in comparison with teacher B's ratings for the survey. However, teacher A did not hesitate to rate statements within the lower range of the scale. Her greater range of variance reflected not only that she was more discerning of her pedagogical beliefs and values than teacher B, but that her teaching experiences and hindsight might have influenced her perceptions and beliefs.

**Parents.** Having a vested interest in the quality of their children's education, the parents elaborated on the beliefs and values that influenced their selection of the PYP. Out of 10 parents, nine responded to this section of the questionnaire. Similarly to the administrators, their responses indicated that they saw merit in an educational model that was child-centered, had a positive approach, and provided skills for lifelong learning. Reflecting socio-constructivist classroom features, parents wanted their children to be actively engaged in the learning process as thinkers, assess their own learning, and experience school in a manner appropriate to 4 and 5-year-olds, that is, mostly through

play. In brief, they perceived the PYP to be a curriculum that offered an appropriate way to educate their child, one that was very different from the traditional model.

**Teacher Practices**

Based on their high ratings on the Teacher Practice Rating Scale (see Table 5), it was evident that the teachers' perceptions of their classroom practices were in keeping with socio-constructivist theoretical tenets. An analysis of their results indicated that they were firm believers in the theories pertaining to the creation of a learning environment that was conducive to personal and academic development. However, other than the ECE coordinator's assessment of the teachers' practices, evidence was not obtained through observable teaching strategies and practices.

Teacher A's ratings indicated that she perceived herself to be highly skilled at implementing a range of practices and strategies related to each of the socio-constructivist themes with one exception pertaining to the use of semiotic tools. Although one would expect teacher A to use ongoing assessment to inform parents to a higher frequency than was done in actual practice (statement 27), her rating was indicative of a reticence or inability to do so. The frequency of assessments involved in the weekly UOI centers, however, may have contributed to her rating.

Teacher B also perceived herself to be an effective practitioner of socio-constructivist theories, however, to a slightly lesser degree than teacher A. Her ratings may indicate that she recognized the fact that there was some room for improvement in her teaching practices and strategies as the year progressed.

Although both teachers had a majority of high ratings for this scale, there were apparent differences in their perceptions of the learner and the curriculum content. This

was evident in the contrasting ratings assigned to the promotion of learner independence and following learner interest (statements 7, 22). While teacher A, the more experienced teacher, perceived her classroom practices to be successfully fostering autonomy and stimulating learner curiosity, teacher B did not. Teacher B's ratings appeared to reflect her skills as a novice teacher accurately. Her level of teaching experience may have contributed as well to her perception of other practices such as the engagement of the learner in experiential learning, the incorporation of interesting concepts and ideas, as well as, the use of the COI and assessment (statements 5, 11, 25, 27). For these statements, teacher B's higher ratings than teacher A's may be related to the fact that, as a novice IBO teacher, she perceived these practices to be effectively implemented. Her ratings may be a reflection of the fact that she did not have much experience or did not have the benefit of hindsight to evaluate these developmentally appropriate practices.

**A Comparison of Teacher Beliefs and Practices**

An important part of the research for this study was to determine whether the teachers' beliefs were congruent with their actual practices. In doing so, it could also be determined to what extent the teachers were implementing authentic socio-constructivist practices.

Self-reported beliefs and self-reported practices were found to be highly related to one another. With the exception of one rating for each teacher, overall high ratings remained the same or differed by +/-1 between the *Belief* and *Practice* scales. However, while there was a concurrence between the majority of teacher beliefs and practices, differences between the two scales were evident.

**Perception of the learner.** In a socio-constructivist learning environment, the individual is perceived as a participating member of a learning community who actively contributes to the construction of knowledge (Jaramillo, 1996; Reynolds, Sinatra, & Jetton, 1996; Vygotsky, 1978). According to the results for this theme, it would seem that the K2 teachers perceived themselves to be facilitators of a collaborative and stimulating learning environment, one in which the child's individual contributions are acknowledged and valued. A high correspondence in their ratings between the two scales confirmed that their practices supported their perception of the learner as one who effectively engages in learning while interacting with adults and peers. As was indicated in the CCP and the UOI planner, the teachers perceived knowledge construction to be a collaborative process between the teacher and the learner. They practised this belief by providing the children with myriad opportunities to engage in discussions, to share their ideas with others, and to reflect upon their learning with their peers (see Appendix AA, pp. 222-225).

**Learner profile.** The PYP's image of the child reflects the socio-constructivist belief that children are competent and capable of independent learning (*Making the PYP happen*, 2007, p. 7). This belief affects the manner in which the teacher structures the learning environment. Teacher A's high ratings reflected that her perception of the child, as an autonomous individual with her own emerging theories of the world, was supported by her classroom practices. From her perspective, the children were encouraged to take responsibility for their own learning and to be independent. Her specific examples of strategies such as job lists in the Teacher Chart confirmed that she had intentionally

structured the learning environment in order to promote self-reliance and self-directed activities.

Teacher B's lower ratings in practices versus beliefs indicated that she perceived herself to be less skilled at promoting self-efficacy and self-regulation. This inconsistency might be related to the fact that teacher B had not had the opportunity to hone her skills as yet. Her ratings, however, also highlighted the difference in the teachers' perceptions of the child. That is, while teacher A promoted skills that were conducive to independent learning, teacher B did not encourage the child to be fully responsible for her behavior and learning at all times. Although teacher B might have striven to empower the child as a thinker and competent individual, she appeared to have found it difficult to attain these goals at the time of the study (early in the school year). The fact that it was the onset of the school year, as an inexperienced IBO teacher, she might not have fully structured a classroom environment that was conducive to enhancing these learner traits at all times.

**DAP.** Focusing on the promotion of a child-centered approach through practices such as the use of significant themes and interactive pedagogy, teachers assessed whether their classroom activities nurtured thinking and enabled the learner to reassess their present cognitive structures. The results for this theme showed greater variance between what teachers had expressed as their beliefs and what they interpreted as their practices. The inconsistencies in teacher A's ratings may be indicative of the fact that although she disagreed with some pedagogical principles such as the incorporation of significant themes and concepts, she felt compelled to incorporate them into her practices due to the constraints imposed by the IB curriculum. In other cases, such as, the use of multiple resources for implementing an interactive pedagogy, it might have been difficult for her

to support her beliefs at all times. Despite the fact that teacher A cited many activities which encouraged visual exploration and manipulation so that the children could test their thinking, she may have found that the use of pre-set themes (e.g., play) limited the type of resources that could be incorporated into the children's learning experiences. It was evident from her ratings and from her response to the open-ended question regarding her educational beliefs and values that she had a preference for a flexible curriculum.

While teacher B's ratings were more consistent than teacher A's, there were inconsistencies in her scores. In her perception, while some of her practices corresponded with her ideals such as the use of significant themes and hands-on activities, others, such as the incorporation of interesting concepts did not support her beliefs. Teacher B may not have perceived herself to be effectively challenging all of her students with stimulating and appropriate concepts due to her lack of teaching experience. As a novice IB teacher, she might have found it difficult to structure a variety of developmentally appropriate materials and activities that corresponded with each learner's interests while, at the same time, were theme-related. From her lack of specific examples, it would seem that teacher B might not have had the opportunity to integrate all of the teaching practices mandated by the IBO.

**Curriculum content.** In keeping with socio-constructivist tenets pertaining to the enhancement of cognitive and metacognitive development, teachers were asked to evaluate specific elements of the curriculum. Unlike other themes, there was a high level of concurrence between the teachers' ratings with the assignment of identical scores to both the *Belief* and *Practice* scales. Their common results indicated a shared belief in socio-constructivist principles pertaining to the curriculum such as the use of problem

solving, language skill development, and grouping (statements 17, 18, 19). However, upon closer examination, the results actually reflected inconsistencies between teacher ideals and practices.

While high ratings indicated a correspondence between their perceptions of beliefs and practices regarding the use of student groupings in their respective classrooms, their lower practice ratings regarding the enhancement of conceptual understanding through problem solving and enhanced language skills indicated otherwise. The latter ratings reflected the fact that these two areas were works in progress. Although the teachers believed that the curriculum content should promote critical thinking skills and challenge students to develop competence in problem-solving, in practice, these goals were not accomplished at all times. Furthermore, while teachers ensured that there were lots of opportunities for student dialogue through brainstorming and open-ended questions during group discussions, language skills such as procedural writing had not been honed (see Appendix AA, p. 224). However, considering the time when the ratings were done, this was reasonable.

**Transdisciplinary curriculum.** As part of the PYP, teachers are expected to plan and organize a transdisciplinary curriculum that is coherent and takes the learner's interest into account (*Making the PYP happen*, 2007, p. 1). They must also ensure that learning experiences are extended beyond the classroom so that they are more authentic and relevant to the learner. Teacher A's high ratings for this theme indicated her perception that her classroom practices supported her pedagogical beliefs. In other words, she believed that in her classroom, learning was experiential, relevant to life, and followed the child's interest in a transdiciplinary manner (statements 20, 21, 22).

According to Teacher B's ratings, although she believed that these provisos were integrally related to positive learning experiences, not all of them readily translated into practice, particularly with regard to following the learners' interests. For teacher B, the classroom practices and transitions involved in the incorporation of a coherent and interesting transdisciplinary curriculum may have been more challenging at the time when the study was conducted. In addition, several events and activities, which served to connect the academic learning experiences with social ones, had not taken place as yet such as the outing to Children's City (see Appendix AA, p. 223).

**Semiotic tools.** The accommodation of diverse learner needs through differentiated learning activities, specific skills, and semiotic tools was the focus of the last theme. According to the teachers' ratings, there was some correspondence between the perceptions of their ideals and practices. It was apparent from teacher A's ratings that most of her practices supported her beliefs. However, the variance in her scores indicated that while she might not have felt compelled to implement pedagogical practices that she did not support, she had to comply with others such as the COI. On the other hand, teacher B's ratings, which were less discriminating than teacher A's, indicated either that she practised what she believed or that, as a novice IB teacher, she was complying with the curriculum constraints that were imposed on her.

Of all of the semiotic tools pertaining to this theme, the use of ongoing assessment (statement 27) is of major importance for making the child's learning visible to the parents. It is considered to be essential to the home and school link (*Making the PYP happen*, 2007, p. 51). Teacher A's rating, her lowest score in the survey, was indicative of her disagreement with the use of ongoing assessment to inform parents of their child's

cognitive development. Although both her beliefs and practices regarding assessment would appear antithetical to socio-constructivism and the IBO mandate, perhaps, she was merely expressing the fact that with a weekly UOI assessment table and daily contact with parents via the child's communication folder, it would be difficult and unrealistic to provide parents with additional information. According to teacher B's comments in the Teacher Chart, UOI assessments were structured as part of the weekly learning centers thereby enabling teachers to evaluate the children's ongoing learning and tap into their misunderstandings.

**Connecting Beliefs with Classroom Practices**

Through the Teacher Chart: Connecting Beliefs with Classroom Practices (see Appendix X), teachers assessed their pedagogical practices and evaluated the manner in which they were implemented in the classroom. According to Jaramillo (1996), "The teaching strategies and curricula that educators adopt implicitly reflect the learning theories which they advocate" (p. 134). In order to determine how the teachers facilitated this process in their respective classrooms, their descriptive data were analyzed according to the six themes that were presented in the literature review. These themes pertained to classroom features that represented tangible socio-constructivist elements in practice.

It must be noted, however, that while teacher A's responses were thorough, some of her examples did not appear to correspond with the statements. In addition, teacher B responded to only 50% ($n$ = 15; 15/30) of the statements thereby rendering it difficult to provide evidence for some of the socio-constructivist practices. Therefore, specific examples from the UOI planner were referred to in order to shed light on the teacher's data in this chart.

**The teacher as a co-constructor of knowledge.** In an authentic socio-constructivist learning environment, the teacher should perceive herself as a co-creator of knowledge. The knowledge building process is viewed as an act that takes place during learner, peer, and adult exchanges (Daniels, 2001; Short & Burke, 1991; Vygotsky, 1978). This perspective of teaching and learning was reflected not only through teacher A's perception of her role as an inquirer with the children but in her statement, "I wanted to work with the children together to learn new things with a flexible curriculum". As previously noted in the Results section, teacher B reported that due to the fact that the teachers and students do not have the same knowledge and experiences, she "learned from her students" during daily interactions. These teacher comments attested to the fact that neither teacher perceived herself to be a disseminator of facts. On the contrary, both teachers wished to be actively involved with the children in the knowledge building process.

Teacher practices, which reflected the co-construction of knowledge, were reported in the UOI planner with ample evidence of cognitive mapping and group discussions. This was documented by the ECE coordinator and K2 teachers in the statement, "There were lots of open-ended questions asked by teachers and group discussions in small and large groups" (see Appendix AA, p. 224).

**The teacher as a believer in the student's ability.** From a socio-constructivist perspective and that of the PYP, the teacher's perception of the learner is an important consideration for learner success (Bodrova & Leong, 1996; Brooks & Brooks, 1993; Marlowe & Page, 2005; Murdoch, 1998; Selley, 1999; Short & Burke, 1991). In this regard, Perry and Drummond (2002) stated that **"**teachers can promote cognitive and

metacognitive development by helping learners acquire the skills and knowledge required to complete tasks independently, help them make appropriate choices, and interpret errors as opportunities to learn**"** (p. 299). However, in order for this to occur, the learning environment must be intentionally structured to promote self-regulation and self-directed inquiry. In this regard, both teachers cited the use of self-regulation strategies to promote self-efficacy and learner autonomy. In addition to having "access to everything themselves", teacher A referred to self-check "joblists on the board" and "bag packing" on their own. Teacher B, who reported less success than teacher A, made reference to promoting self-regulation in the statement, "Before starting activities, students set rules and are encouraged to follow these".

**A strategic learning environment.** For purposeful learning to occur, the learner's curiosity must be sparked by objects and events that enable the individual to test her ideas in developmentally appropriate ways (Copple et al., 1984; Saunders & Bingham-Newman, 1984; Short & Burke, 1991; Woodhead & Faulkner, 2000). At the K2 level, the teachers did not teach isolated facts but broad interdisciplinary themes that involved hands-on learning related to play (see Appendix A, p. 148). Throughout the stages of the COI, they structured the learning environment to stimulate thinking through exploration and discovery. According to the K2 PYP planner, the class was engaged in a variety of activities that provided the children with multiple perspectives to think about their own learning. Launched by a simulated beach day in the playground, the play-themed unit included stories, songs, photos, games, Show and Tell, and role-play.

Furthermore, according to socio-constructivist theories, cognitive development must be provoked through the teacher's questioning style as well as student questions (De

Vries & Kohlberg, 1987; Forman & Kuschner, 1977; King, 1995; Saunders & Bingham-Neuman, 1984)). This practice was reflected in teacher A's comment concerning the fact that that during the COI "questions changed from general to specific yet [were] still open-ended". Teacher B cited an example from the learner's perspective, that is, "students provide math questions for the class" to solve together. This was also exemplified at the beginning of the COI through the provocation of teacher questions such as, "What is play?" and "Why do we play?" (see Appendix AA, p. 222).

**Change as a feature of the learning environment.** In their description of classroom features that contributed to a positive learning environment, Saunders and Bingham-Newman (1984) referred to the importance of change. This concept included the physical rearrangement of the room, the materials presented, and the adaptation of rules that are conducive to a child-centered and meaningful learning experience.

In regard to the physical arrangement of the classroom, teacher A made reference to several examples in which the classroom and kindergarten areas were adapted to accommodate the needs and interests of the learner. That is, the space was divided in a manner that enabled children to access "both the inside and outdoor parts of that section of the school campus" (statement 15).

With respect to classroom materials, through active and manual exploration (1998), the children had access to different types of modalities that enhanced their learning experiences such as those referred to by Copple et al. (1984) as visible thinking activities. Teacher A cited examples of "maths, phonics, and reading groups that were constantly changing" and provided an example of an "interactive display, the Ladybird addition game" (statement 30). According to her, "the teacher is constantly changing activities and

providing change as they (the children) get tired or complete their work" (statement 23). Teacher B stated, "The class has many math interactive activities such as board games, ICT games, and hands-on manipulatives" (statement 14).

**Diversity as a stimulus for learning.** This theme underscored different facets related to the concept of diversity as proposed by authors such as Saunders & Bingham-Newman (1984). These included the range of developmental levels, experiences, and interests associated with the learner. At the K2 level, the concept of diversity was taken into account through a transdisciplinary curriculum that followed learner interest. Teacher A referred to experiential learning activities in her statement, "We use real events, i.e. outings to the Burj Khalifa or the construction on campus". It also pertained to the Vygotskian concepts of mediated learning through ther use of tools and artifacts (Bordrova & Leong, 1996; Daniels, 2001; Karpov & Haywood, 1998; Vygotsky, 1978). It was reported that the children made up their own games and visited a university where they made their own toys (see Appendix AA, p. 224).

Teacher A also cited the use of differentiated learning strategies to accommodate learner needs such as, "varied levels of questions" for problem-solving and a word wall for writing. Teacher B elaborated, "The class is divided according to [different] levels of understanding. Some children are grouped for alphabet work, others for beginner phonics, and others for phonics blends".

Moreover, this theme also concerned the safeguarding of the individual's beliefs and values (Saunders & Bingham-Newman, 1984). In the socio-constructivist inspired classroom, every child must feel that she can express herself freely and that her opinions will be respected by adults and peers. According to Brown (2003), children's voices and

dialogues are acknowledged by encouraging the learner to express her ideas during class discussions and while engaged in peer interaction. From the PYP's perspective, the importance of multiple perspectives of learning cannot be understated. According to its proponents, "this sharing of experience increases the students' awareness of, and sensitivity to, the experiences of others beyond the local or national community" (*Making the PYP happen*, 2007, p. 6). In the K2 classroom setting, teacher B stated that this practice was incorporated during the learner's interactions with peers through "class discussions [that are] conducted everyday". In the UOI planner, additional examples were provided of ongoing group discussions, role playing, and transdisciplinary activities such as games (see Appendix AA, pp. 223-224).

**Authentic and dynamic assessment.** The last concept, which has been deemed as an essential element related to socio-constructivist principles of teaching and learning, concerned assessment. Observing the student while engaged in learning and watching her work through ideas provided teachers with significant indices of the individual's level of conceptual understanding. In this respect, Brooks and Brooks (1999) stated, "Materials tell us more about student learning than tests and externally developed assessment from the teacher's perspective" (p. 97).

In the K2 classes, assessment activities were designed to provide concrete examples of learning and ascertain the learner's level of conceptual understanding. In keeping with socio-constructivist referents of learning, the teachers assessed children on a continuum rather than only at the end of the unit. Their examples reflected authentic and dynamic assessment in the form of formative and summative assessment (see Appendix AA, pp. 222-225). Teacher A reported "using formative information to ensure [learner]

understanding before moving on" to more difficult concepts (statement 26). Teacher B stated that "Student observation is done once a week based on identifying [student] levels of understanding in each area" (statement 27).

In the UOI planner, references were made to a variety of assessment tasks that took into account the child's development on an ongoing process. During the COI, children were asked pre- and post-assessment questions such as, "What is play?" and "What have you learned from this game?". There were "teacher observations of social skills and cooperation" (see Appendix AA, p. 222). Self-reflections, rubrics, and evaluations with buddies were done. Finally, the child evaluated her progress at the end of the UOI by "watching a video of self playing in a group" (see Appendix AA, p. 222).

In conclusion, based on an analysis of the descriptive data provided from the Teacher Chart and the PYP planner, it was evident that the K2 teachers were effectively integrating most of the socio-constructivist principles of teaching and learning in their classroom practices.

**ECE Coordinator's Rating of Teacher Practices in the K2 Classroom**

Having taught at the kindergarten level for several years, the ECE coordinator was able to assess whether teacher practices reflected the spirit of the IBO and the tenets of socio-constructivism (see Appendix Y). As coordinator, she was privy to teacher practices and could determine if the K2 students authentically constructed meaning from experience. Although she made onsite observations of the teachers' classroom practices, her role as participant would have been more beneficial with the inclusion of specific examples for each statement. In other words, the design of this instrument would have

been more effective had it been modeled like the Teacher Chart: Connecting Beliefs with Classroom Practices.

The ECE coordinator's overall ratings of 63 % ($n$ = 19) occurs frequently and 33% ($n$ = 10) occurs always were indicative of her perception that K2 teachers employed practices that reflected beliefs in a child-centered education and contributed to a positive learning experience. In addition, there was a high level of concurrence between the coordinator and the teachers in terms of their perceptions of the implementation of the curriculum and the type of learning environment that was promoted in each class. This was confirmed by the fact that she rated only four statements lower than the teachers did (statements 19, 23, 25, 30).

However, there were differences between their ratings. It was interesting to note that the coordinator did not perceive that student groups were being used as effectively as the teachers thought they were (statement 19). Contrary to her perception, the teachers' examples indicated that the various developmental needs of their learners were being met successfully through the use of groups for different subjects (e.g., math, language) and differentiated learning experiences such as reading and writing (statement 23). The ECE coordinator, however, was more objective and could evaluate what she was seeing being done.

The ECE coordinator's perception also differed from the teachers with regard to the extent which the classroom environment was updated. While the teachers perceived their classrooms to be stimulating and aesthetically appealing through the use of various materials such as interactive displays and games, according to the coordinator's

perception, this practice was not occurring as frequently as she thought it should (statement 30).

Finally, the difference between the coordinator and teacher ratings was most evident with regard to the use of the inquiry cycle (statement 25). That is, the coordinator did not share the teacher's perception that this important semiotic tool was implemented effectively in the K2 classrooms. The coordinator's low score may have been influenced by the fact that this was the first UOI of the year, children appeared to be immature (see Appendix AA, p. 225), and there had not been sufficient time to integrate each stage of the COI as yet.

**Parent Survey**

While current family-school literature highlights the importance of parental involvement in school, as well as, parent-teacher relationships (Christenson, 2004; Patrikakou & Weissberg, 1998; Rimm-Kaufman, Pianta, Cox & Bradley, 2003; Vickers & Minke, 1995), little has been documented about parental perceptions of teacher beliefs and practices. However, research suggests that when parents are involved in their child's educational experience, they tend to feel "an increased sense of control in their children's education...and rate teachers' skills higher than do uninvolved parents" (Vickers & Minke, p.134). These factors were considered for the analysis of parental ratings in the survey scale as well as their responses in the explanation section.

Recognizing the importance of the family-school partnership for the positive development and learning outcomes of children, parents were asked to consider and rate their child's overall experiences in the classroom based on insight gained through *teacher outreach* and their child's verbal reports (see Appendix Z). Teacher outreach refers to the

teacher's solicitation of parental involvement through proactive strategies such as parent volunteering, parents' night, and phone calls (Patrikakou & Weissberg, 1998).

It was expected that there would be a high rate of parental participation given the fact that the majority of the parents of the K2 children were from high SES backgrounds and it was assumed that they had selected this school based on personal criteria related to their pedagogical beliefs. Surprisingly, the response rate for the study was very low at 12.8%. In addition, of these parents, only 9% elaborated in the open-ended section of the survey thereby compromising the parental participation. However, with none of the responses negatively rated in the disagree categories, it was evident that participating parents were generally satisfied with the PYP as a curriculum model for their child. Their responses were analyzed according to the five pre-set themes discussed in the Results section.

**Perception of the learner.** According to socio-constructivist theories, peer interaction plays a significant role in the child's cognitive development (Bruner, 1960; Daniels, 2001; Palincsar, 1998; Short & Burke, 1991; Vygotsky, 1978). While interacting with others, the learner jointly constructs knowledge. With the exception of one parent, the participants' high ratings indicated a perception that their children were engaged in an interactive pedagogy within the social context of the classroom, that is, as part of a community of learners (statements 1, 2). In this regard, participant 2 elaborated that her child built knowledge while she "works with different peers, teachers, and adults". Participant 3 confirmed her perception that her child was a valued member of the class in the statement, "Each teacher and assistant with whom my son has contact appears to uphold this statement".

**Learner profile.** Parents stated that their decision for selecting the PYP was not based solely on its academic curriculum but on the way it enabled their children to become independent learners, confident students, and happy individuals (statements 3, 4). Overall, the majority of parents were convinced that their children participated in a classroom setting in which personal attributes and learning skills were honed. Their ratings were supported by participant 2's examples of teacher initiatives such as, "star of the day, green choice cards, sharing news". She also mentioned the fact that she saw "evidence in her [child's] written work…". Participant 8's comments, on the other hand, alluded to the fact that although her son appeared to be progressing in his overall development, the cultural aspect was lacking. This was reflected in her statement, "I would like Mohammad to have more Arabic lessons in school".

**DAP.** In assessing the structure of their child's learning environment, parents took into account the manner in which teachers provided purposeful learning experiences that were in keeping with several socio-constructivist principles (statements 5, 6, 7, 9, 12). While high overall ratings attested to the fact that parents, with little exception, were convinced that the teachers' pedagogical practices and strategies were effectively meeting their children's needs, it was interesting to note that so few parents elaborated in the explanation section. Their lack of examples might suggest that they were either not very informed or disinterested in the practices that took place in their child's learning environment. In either case, they might have selected the PYP curriculum based on word of mouth or blind trust rather than on informed decision-making.

However, one parent (participant 4), who was cognizant of the importance of connecting current understanding with past learning and experiences, expressed the need

for more opportunities to acknowledge her son's cultural heritage. Such an opinion reflected the Vygotskian perspective of knowledge construction, one that recognizes the importance of sociocultural influences on the learning process (Vygotsky 1978).

With regard to another DAP element, participant 3 underscored the importance of authentic and experiential learning opportunities in her statement about her son," He particularly enjoys stories his teacher tells about what is happening in her life and related these back to us".

This theme also pertained to the quality of the physical environment. While this element is considered to be of importance as a stimulus for cognitive development, the lack of a visually appealing and meaningful environment may have repercussions on the learner's cognitive development. For statement 12, only three parents answered the open-ended section, and only one of these three participants was positive in her comments. While participant 2 cited that "displays changed", participant 9 expressed a contrary opinion in her statement, "While efforts are made to do this, we feel the size of the classrooms limit the scope and ultimately, the children's experiences". Based on parental responses to this statement, both few in number and limited in description, their examples did not support the fact that this feature was integrated in the K2 classrooms.

**Transdisciplinary curriculum.** This theme highlighted the importance of teacher outreach for the successful communication between home and school (statement 8). Although overall high ratings indicated that parents were satisfied with teacher outreach, few examples were provided that confirmed parental access to information regarding their children's cognitive development and the manner in which it is linked to activities

and events in the community. “If there is a connection”, participant 4 commented, “it is initiated by parents reporting something noticed at home, not vice versa.”

**Semiotic tools.** Taking into account the child’s holistic development, the focus of this theme was on making learning visible (statements 10, 11). With regard to the first statement, with one exception of *uncertain,* parents’ ratings were not only high but indicative of the highest rate of response in the open-ended section (70% ; $n = 7$). Unlike other sections of the survey, parental awareness of specific teacher practices that contributed to their children’s cognitive development was evident. They provided several examples such as: “display boards, (on) sports days” (participant 2), “the 3-way and student led conferences” (participant 3), and “portfolios and work sent home” (participant 4).

However, regarding statement 11, while the majority of parents (80% ; $n = 8$) *agreed* or *strongly agreed* that they were satisfied with the quantity and quality of information that was provided to them concerning their child’s conceptual understanding, only two parents elaborated with positive comments and one parent expressed dissatisfaction.

In conclusion, after having conducted an extensive analysis of the findings from the Parent Survey, it would appear that while parents’ ratings indicated a high level of satisfaction with the overall quality of the K2 PYP curriculum, most of the parents could not provide examples of teacher practices that validated their opinions. The lack of parent participation and the paucity of examples for teacher practices suggests that the K2 parents’ positive perceptions of the K2 curriculum were based on teacher outreach, word

of mouth from other parents, and/or from favorable impressions during brief class visits rather than on a deeper level of understanding.

An evaluation of parental feedback in the next section, however, helped to ascertain which elements of the K2 learning environment were perceived by parents to be important for their children's educational experience.

**Parental Expectations: Open-Ended Questionnaire**

The descriptive data from the second question of the open-ended questionnaire, "What were your expectations of the Early Years Childhood Primary Years Programme at Uptown Primary School?" revealed that the parents' expectations of the PYP corresponded with their educational values and beliefs (see Appendix U). With 78% of the responses being positive, parents cited features and elements that were reflective of authentic socio-constructivist practices. Similar to the themes that had emerged in regard to their values and beliefs, parental expectations focused on the need for inquiry, play, and a balance between academic and social skills.

**Children's happiness and security.** For the first theme, parental expectations concerned a positive approach to teaching and learning. Parents wanted their children to be enthusiastic about learning and to enjoy school to the fullest. Parents expected that the classroom experiences and activities would facilitate this goal through the transdisciplinary curriculum, one that included foreign languages and sports.

Parents also expected a secure learning environment that was conducive to the well-being of their child. The issue of security was addressed in two significant ways. First of all, through the creation of a class charter of rights, every member of the classroom community contributed ideas for promoting and maintaining a peaceful

classroom environment (see Appendix A, p. 149). Secondly, in accordance with IBO objectives, teachers "prepare individuals as social members with expanding repertoires of appropriate ways of interacting" (*Making the PYP happen*, 2007, p. 42). This was reinforced through the modeling of the LP attributes by teachers and their recognition of learner initiatives through student merit certificates.

**Learning through inquiry and play.** The IBO acknowledges another important socio-constructivist principle of learning for young children, one that recognizes the early years as a crucial stage of learning through play (De Vries & Kohlberg, 1987; *Making the PYP happen*, 2007, p. 30). In this regard, parents expected the PYP to enable their children to act on their learning by testing their ideas and developing their conceptual understanding in a developmentally appropriate manner. Participant 6 elaborated on the importance of children being "able to excel in school as they play and learn together". From a similar perspective, participant 8 stated, "I did not want a [sic] sit at a table and copy from the board way of learning".

Parents' expectations for an interactive approach to learning were supported by a curriculum that reflected the theoretical tenets of socio-constructivism in an active, experiential manner. In the PYP, this was done by structuring new experiences for students to test and revise their thinking (*Making the PYP happen*, 2007, p. 42). Evidence of UOI activities, which corresponded with parental expectations, related to different modes of game playing including board games, computer programs, and hands-on interactive games (see Appendix A, p. 148).

Another related parental expectation concerned the need for creativity. Participant 1 expressed this issue in her statement, "I bought into the teaching concept [sic] for the kids

which stimulates them and provides for them to be creative". One of the major pedagogical concerns of the PYP is that students are to be provided with stimulating and provocative learning environments by engaging them in the design of their own inquiries (*Making the PYP happen*, 2007, p. 42). At the K2 level, this goal was accomplished through the children's toy and game inventions, the adaptation of games and rules to suit their own needs, as well as, their Show and Tell presentations (see Appendix AA, p. 223).

**Development of academic and social skills.** The third theme was based on parents' expectation that the PYP would provide their children with the skills to be both an independent learner and a socially responsible individual. Through the teaching of information handling skills, parents presumed that their children would make informed decisions about their learning. At the same time, they anticipated that the PYP curriculum would instill in their children the necessary traits for participating as a valued member of a community of learners and society.

With respect to the first expectation, the children were presented with the opportunity to learn in authentic and active ways in a manner that Marlowe and Page (2005) describe as "promoting questioning, investigating, problem generating and solving" (p. 8). In the PYP, this was accomplished by "sharing their learning and understanding with others", as well as, by "using a variety of learning styles, multiple intelligences and abilities to express understanding" (*Making the PYP happen*, p. 46). At the K2 level, these parental goals were met through brainstorming, group discussions, differentiated learning centers, and activities such as Venn diagrams, child-friendly rubrics, and self-reflection journals with buddies (see Appendix A, p. 148). These

activities were examples of the manner in which the children developed cognitive and metacognitive abilities.

The second expectation reflected a concern for the holistic development of their children and the need to address differentiated learning abilities. In this regard, participant 4 expressed the fact that her child had special needs and that she wanted her to attend the same school as her sibling. According to the IBO, the PYP must be "responsive to the needs of the learner in a manner appropriate to each student's development and modalities of learning" (*Making the PYP happen*, p. 46). At the K2 level, this proviso was addressed through teacher practices that took into account a broad spectrum of developmental expectations in students' learning. This was exemplified through practices such as stratified reading and math groups and semiotic resources that enabled students to write words or compose sentences according to their abilities (see Appendix A, p. 148).

Moreover, another expectation was highlighted by the parents concerning the PYP's versatility to accommodate transient lifestyles (participant 9). Given the fact that job relocation was an important consideration for parents, they expected the PYP curriculum to provide their child with the flexibility and continuity necessary to deal with myriad changes in various educational systems. This is attained in the PYP through the design of a curriculum that has significance for all cultures. At the K2 level, this goal was accomplished through the transdisciplinary curriculum.

**Were Parental Expectations Met?**

After having conducted an extensive analysis of parental expectations, it would seem that parents were satisfied with the overall quality of the K2 PYP curriculum. More

importantly, it would appear that the content and structure of K2 learning environment met with the expectations of the majority of parents. That is, the PYP curriculum, as implemented at the K2 level, provided parents with the features they had been looking for: children's happiness and security, learning through inquiry and play, and the development of the whole child.

However, as mentioned earlier, due to the limited amount of parental feedback in the open-ended section of the survey, it became questionable to what extent teacher practices and philosophies were considered by parents as they made decisions about their child's education. While overall ratings reflected a high level of parental satisfaction with the PYP curriculum, their lack of responses in the open-ended section indicated that their choice may have been based on uninformed decision-making.

## Conclusion

Palincsar (1998) states that, "It is hard to imagine a more significant challenge to social constructivism than promoting meaningful learning for all children especially for those who are linguistically and culturally diverse" (p. 15). Based on the analysis of the CCP and the K2 UOI planner, as well as, the overall results of the qualitative data and survey ratings of the participants, it can be concluded that this goal is promoted, in theory and in practice, in the IBO model of education via the PYP curriculum.

This conclusion was supported as each research question was addressed in the study. Regarding the first question, "What socio-constructivist theoretical tenets constitute teaching and learning theories?", the CCP established the first link between socio-constructivist theoretical tenets and the PYP curriculum. Through the comparison

of pedagogical constructs in a continuum of perspectives, it was ascertained that the PYP curriculum at the K2 level was compatible with socio-constructivist theories.

The second question, "Of these, which socio-constructivist theories can be applied to the International Baccalaureate Primary Years Programme?" was addressed through the micro-analysis of the K2 UOI planner. In the planner, ample evidence was found to suggest that many features of the K2 curriculum align themselves ways with socio-constructivist theories. Through the planner analysis, each stage of the COI and its accompanying activities and tasks were examined. It was assumed that the COI was an effective semiotic tool that facilitated the cognitive and metacognitive development of the learner. The teacher data in the planner supported the view that the COI was a mechanism that consolidated all learning tasks and activities at the K2 level. The teachers provided myriad examples of classroom practices throughout the inquiry cycle that were in keeping with socio-constructivist tenets such as the co-construction of learning, interactive pedagogy, experiential learning, and the use of authentic assessment.

According to De Vries and Kohlberg (1978), classroom activities should take into account the "child's interest, include play, involve experimentation and imply co-operation between adults and children and among themselves" (p. 24). An in-depth look at each component of the K2 planner accounted for each one of these elements. The descriptive data provided by the K2 teachers revealed that the children were presented with broad concepts that followed their interest through the theme of play. They were engaged in open-ended inquiry that involved hands-on learning and the testing of ideas through game playing and inventions with peers and adults.

However, it is important to note that the ECE coordinator did not perceive the COI to be an effective mechanism for learning in the K2 classrooms. While this might appear contradictory to the overall data presented in the UOI planner, her ratings might be an accurate reflection of the fact that the COI requires time and practice to implement as a successful learning tool.

Through the last question, "Which principle tenets of socio-constructivism have been applied to the Primary Years Programme at the kindergarten (K2) level of Uptown Primary School?", the connection between socio-constructivism and the PYP curriculum was provided through a different lens, that is, from the perspective of participants. The open-ended questions and surveys tapped into the participants' perceptions of the K2 curriculum as an authentic socio-constructivist pedagogical model. While responses to the open-ended questions of the questionnaire made known the educational values and beliefs of participants, the survey scale ratings and accompanying descriptive data revealed their assessment of the PYP curriculum and the K2 teachers' classroom practices.

Each survey was useful to ascertain whether the teachers practiced their beliefs and whether their beliefs were based on socio-constructivist principles of learning. The teachers' and ECE coordinator's assessments of the Teacher Practices Rating Scales provided clear indices of the perception that the K2 learning environments provided children with forums for cognitive and metacognitive growth. Although limited in quantity for teacher B, the descriptive data provided in the Teacher Chart confirmed that the teachers were implementing practices and strategies that were developmentally appropriate and promoted the holistic development of the child. The Parent Survey

enabled parents to reflect upon whether their children were engaged in a pedagogy that teaches students to think critically about their learning rather than be passive recipients of it. From the overall high ratings of the Parent Survey scale, it was found that they were highly satisfied with the PYP program. However, despite the limited number of examples that could attest to the parents' knowledge of teaching practices that contribute to a socio-constructivist learning environment, it was evident that they were aware of the features that were conducive to a positive and stimulating pedagogy.

In conclusion, throughout the study, there was ample evidence to indicate that many features of the K2 curriculum at Uptown Primary School aligned themselves with socio-constructivist theories. The overall results of the CCP, the micro-analysis of the K2 UOI planner, and the surveys suggested that the original assumption of the thesis could be upheld, that is, the IBO model of education, as implemented in the PYP curriculum at the K2 level at Uptown Primary School, is an authentic socio-constructivist pedagogical model.

**Limitations of the Study**

The present study contributed to the identification of a pedagogical model that withstands the rigors and requisites of socio-constructivist theoretical tenets. In essence, through the analysis of the IBO pedagogical model, socio-constructivist principles of teaching and learning were translated into practice in the PYP curriculum. However, there were a number of limitations to the study that should be noted.

To begin with, although this study involved a qualitative approach, the limited participation of the teachers may have had an effect on the quality of the data. Certainly, the participation of all four of the K2 teachers, rather than two, would have been

advantageous for providing a broader lens through which to analyze teacher perceptions, beliefs, and practices. Teacher A's thoroughness in the survey questions and corresponding examples was very beneficial, however, in a few statements, her answers were either contradictory or unclear with respect to the application of her beliefs. Teacher B's feedback was very pertinent as well although limited in quantity. Ergo, to have had access to more descriptive data from the K2 teachers would have rendered the study more complete and potentially richer at the level of analysis.

The design of the ECE coordinator's survey would have been more effective with the inclusion of examples of specific teacher practices. Her descriptive data would have certainly enhanced the analysis of whether teachers' practices corresponded with their beliefs.

Parent participation was particularly problematic and disappointing in terms of quantity. Out of 78 prospective participants, only 10 parents agreed to take part in the study. Once again, the limited number of respondents diminished the potential for analyzing parent perception and feedback regarding the K2 curriculum as a socio-constructivist model. The inclusion of survey ratings and descriptive data from parents was critical for assessing the PYP curriculum and a greater number of participants would have increased the significance of the results. Moreover, even though nine out of 10 parents elaborated on their ratings in the open-ended section of the Parent Survey, some statements were not completed, thus diminishing the amount of feedback with which to work. In addition, in the case of one parent, her answers were indicative of her lack of comprehension of the questions.

Another important consideration was the timing and content of the UOI planner submitted for the study. Teachers indicated, in the planner, that this unit was the first one completed this year and that students were very young and immature at the time. Potentially, this could have affected the overall goals accomplished by the K2 teachers and influenced their perceptions of their practices at that point in time. Furthermore, of the four teachers who contributed to the planner, only one teacher was an experienced IBO teacher, thereby creating repercussions on the content and quality of the UOI planner as well. However, as a former Uptown Primary School teacher with limited IBO experience myself, from my perspective, the planner appeared to be lacking in substance and detail. There was insufficient documentation of several details pertaining to this unit such as the identification of resources (e.g., the names of transdisciplinary games and books) and the evidence of learning (e.g., student questions and comments at the end of the unit, the results of assessment tasks). Being made aware of which curriculum components worked to the mutual benefit of both teacher and learner and which ones required modification would have enhanced the planner analysis.

On a different note, the location of the study did not pose a problem for the intended goal of the thesis, however, direct access to participants would have greatly benefited the quality and quantity of responses. To have had the opportunity to carry on this research while working at Uptown Primary School would have enabled the researcher to add other dimensions to the design of the research instruments. To begin with, the fact that K2 teachers and many of the K2 parents would have known the researcher may have provided the incentive for more people to participate in this study. Secondly, with the addition of follow-up interviews, the quality of the data may have

been enhanced and provided the researcher with another perspective from which to assess the PYP curriculum. Thirdly, being in the privileged position of working on the campus as a K teacher would have enabled the researcher to access subsequent UOI planners rather than the first one. Considering current K2 teacher comments in this UOI planner, perhaps subsequent UOI planners would have been more conducive to the present study.

**Implications for Future Research**

As we continue to evaluate our educational systems and improve them through pedagogical reforms, the socio-constructivist mandate will be to deconstruct what is not working and to shape, with a critical lens, curriculum frameworks that enable students to make informed decisions about their learning while sharing multiple perspectives with others. In addition, the purpose of socio-constructivist pedagogy will be to prepare the learner for participation in a society of rapid change and technological growth.

With this in mind, it would be interesting to examine the application of socio-constructivist principles in the PYP curriculum at the higher grade levels. In this manner, the children could be directly involved in the study as participants. This would enable the researcher to gain insight into the unique perspective of the student rather than the teacher and observers only.

Several questions could be considered for this research. These would pertain to whether the older child, having acquired experience with the PYP curriculum, becomes more skilled as an autonomous learner and capable of self-directed inquiry. It would be important to ascertain whether the child's assimilation of the content and structure of the PYP's spiral curriculum would enable her to develop cognitively and metacognitively in a manner that is in keeping with the true socio-constructivist spirit of learning. Another

major consideration would be whether the modeling of the LP traits enhances the desired personal traits and social skills of the learner in an authentic manner.

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# Appendix A

## Comparison Chart of Perspectives (CCP)

Comparison Chart of Perspectives (CCP)

Adapted from Wink & Putney (2002), Woolfolk (1998) and Marshall (1992b), Making the PYP happen 2007, IBO document

| Construct | Social constructivist -Vygotsky | IBO Primary Years Programme (PYP) | Uptown Primary School K2 unit of inquiry (UOI) |
|---|---|---|---|
| **Knowledge** | Changing body of knowledge, mutually constructed with others | Significant, relevant content that students explore by working on their own, with partners, or in larger groups (*Making the PYP happen*, 2007, pp. 6, 10) | Big ideas, subject matter worth exploring, organized through structured inquiry |
| **Learning** - WHAT | Collaborative construction of socially & culturally defined knowledge and values | Programme of international education for learners, age range 3-12 | • Term 1 - *Let's Play* Unit of Inquiry (UOI)<br>• Central idea: "People play to learn, explore and have fun." (see Appendix AA, p.1) |
| | | Balance between the transdisciplinary programme of structured inquiry and single subjects | • Concepts, skills, attitudes related to UOI (see Appendix AA, pp.1-4)<br>• Transdiciplinary single subjects: language arts, math, Arabic, music, personal and social development, physical education (see Appendix AA, pp. 3-4) |
| - HOW | Through socially and culturally constructed opportunities | As a community of learners (*Making the PYP happen*, 2007, p. 5) | |
| | | During social acts of communication and collaboration throughout the curriculum (*Making the PYP happen*, 2007, p. 6) | • Via the activities of the inquiry cycle (COI) and single subjects (see Appendix AA, pp. 1-4) |
| | | Through open-ended, concept-driven inquiry and active exploration | • Weekly learning centers, transdiciplinary activities |

| | | | |
|---|---|---|---|
| | By relating prior experience and understanding to the construction of newly formed knowledge | By confronting & developing the learner's earlier conceptions and constructs, individually or in collaboration (*Making the PYP happen*, 2007, p. 6) | • Pre-assessment related to play: mind mapping, brainstorming, verbal questioning (see Appendix AA, p. 2) |
| **Teaching** | Co-construct knowledge with students by sharing expertise and understanding | Involve students actively in their own learning | • Use of a variety of games and play equipment in diverse settings - hub, yard, class, gym (see Appendix AA, p. 2) |
| | | Facilitate open-ended inquiry into real-life investigations | • On-going small/large group discussions about issues such as why we play, toy safety, and health (see Appendix AA, pp. 2-3) |
| | | Help students make connections between life in school, life at home, and life in the world (*Making the PYP happen*, 2007, p. 6) | • Game day- bringing games from home and explaining rules to peers, discussions (see Appendix AA, p. 2) |
| | | Address the diverse needs and abilities of the learner through a variety of resources | • Grouping and regrouping students for a variety of learning situations, differentiated reading and math groups |
| | | Use a range and balance of teaching strategies to enhance learning | • Discussions, books, transdisciplinary games, photos, videos, songs, outings, guest speaker, role play, computers (see Appendix AA, p. 2) |
| | | Design authentic and dynamic assessment activities for a range of contexts, both formal and informal, within and beyond the classroom (*Making the PYP happen*, pp. 44-45) | • Self-reflection in journal, teaching game to peers-game day, reflection with buddy, assessment rubric, video presentation of student playing game (see Appendix AA, p. 3) |
| **Role of teacher** | Mediator, mentor, actuator | Co-constructor of knowledge, meaning-maker, mediator, member of a community of learners, lifelong learner, facilitator (*Making the PYP happen*, 2007, pp. 5, 7, 30) | • Planning and organization of all UOI and transdisciplinary activities (see Appendix AA, pp. 1-4) |

| | |
|---|---|
| Maximize early years as a crucial stage of learning through play (*Making the PYP happen*, p. 7) | • Use of musical instruments, computer software games, social games, Arabic games, tents, playhouse, sand pit, dress up corner, playground equipment, sports gear, game related outings (see Appendix AA, p. 2) |
| Create an educational environment that stimulates and challenges learner thinking and the construction of meaning | |
| Assess the learner's cognitive and metacognitive development, as well as, personal and social development | • See **Teaching** section |
| Provide a secure learning environment in which the learner is valued and respected | • Discussion of attitudes such as cooperation and enthusiasm (see Appendix AA, p. 2)<br>• Honing social skills such as conflict resolution<br>• Highlighting LP and attitudes (e.g., action window, certificates)<br>• Class charter of rights (see Appendix AA, p. 4) |
| Design activities which promote positive attitudes and positive action | • Game day (LP and attitudes in practice)<br>• PE - making up their own games and rules (see Appendix AA, p. 2) |
| Design activities which promote the development of global citizens, raise multicultural awareness (*Making the PYP happen*, p. 42) | • Integration of authentic multicultural games<br>• Multicultural vocabulary and multilingual greetings<br>• Individual presentations about self<br>• National and multicultural school wide celebrations and assemblies |

| | | | |
|---|---|---|---|
| | | Reflect on teaching practices via the curriculum components: written, taught, assessed (*Making the PYP happen*, pp. 8, 10) | • Collaborative transdisciplinary planning of the UOI Planner by K2 team teachers, homeroom, PE, Arabic, and music (see Appendix AA, pp. 1-4) |
| **Role of Peers** | Assume part of knowledge construction, contribute to definition of knowledge, help define opportunities for learning | Active member of a community of learners (*Making the PYP happen*, p. 9)<br><br>Participate in co-construction of knowledge and the negotiation of meaning | • Brainstorming, mind mapping, student dialogues related to the lines of inquiry, UOI and transdisciplinary activities involving partner, team and group work (see Appendix AA, p. 2) |
| | | Provide multiple perspectives of understanding, values, beliefs<br><br>Collaborate in working as a leader, partner, a member of a group (*Making the PYP happen*, p. 42) | • Teaching favourite game to peers, role rotation during games, student groupings for differentiated learning (see Appendix AA, p. 2) |
| | | Collaborate in assessment process (*Making the PYP happen*, p. 44) | • Self-reflection with buddies, displaying LP traits while interacting with others |
| | | Voluntary participant in "taking action" (*Making the PYP happen*, p. 25) | • Adaptation of games such as Mr. Wolf, Treasure Hunt, etc. (see Appendix AA, p. 4) |
| **Role of Student** | Cogenerator, coconstructor, reformulator | Active and critical thinker, assessor, explainer, inquirer, interpreter, negotiator, social participator, global citizen (*Making the PYP happen*, pp. 29, 42) | • Via all UOI activities and tasks |
| | | Investigate significant issues by formulating their own questions (*Making the PYP happen*, p. 29) | • Student dialogue, open-ended questions related to play |
| | | Design their own inquiries (*Making the PYP happen*, p. 29) | • Invention of games and creation of toys |

| | | | |
|---|---|---|---|
| | | Consider and reflect upon the point of view of others (*Making the PYP happen*, p. 6) | • Discussions, game day- each child teaches peers her/his favourite game, role exchange, self-reflection with buddies, Show and Tell |
| | | Master a range of transdisciplinary skills relevant to all of the subject areas and to transcend them (*Making the PYP happen*, p. 21) | • Emerging language and math skills (e.g., journal writing, game rules), technology skills (e.g., computer), self-regulated behavior (e.g., application of rules and conflict resolution in PE, hub, and class) |
| | | Take up voluntary action based on critical and reflective thinking and balanced understandings (*Making the PYP happen*, p. 25) | • Demonstration of Learner Profile traits<br>• Adaptation of games (e.g., Treasure Hunt) |
| **Student View of Self** | Sense-maker, problem solver, socially appropriate member of collective | The PYP learner profile and attitudes represent the desired IBO traits that the learner is expected to acquire and demonstrate on a daily basis<br><br>Learner Profile<br>• Thinker<br>• Communicator<br>• Risk-taker<br>• Knowledgeable<br>• Principled<br>• Caring<br>• Open-minded<br>• Well-balanced<br>• Reflective<br>(*Making the PYP happen*, p. 4, Figure 1) | • Via all UOI activities and tasks<br>• Emphasized by class charter of rights (*Caring, Sharing Hands)* discussions on conflict resolution, cooperation, social skills related to game playing and attitudes<br>• Highlighted in K2 Blue and Red classes through action window and certificates (see Appendix AA, p. 3)<br>• Demonstrated during self-assessment of a video showing a child playing in a group (see Appendix AA, p. 1) |
| **Evidence of Learning** | Socially competent participation in collective | Active and appropriate participation, individually, as partners, in small or large groups | • Via all transdisciplinary subjects and activities |

| | | |
|---|---|---|
| Demonstration of understanding | Sharing their knowledge and understanding with others | • Via all transdisciplinary subjects and activities |
| | Using a variety of learning styles, multiple intelligences and abilities to express understanding (*Making the PYP happen*, 2007, p. 46) | • Game playing, adapting rules, teaching peers their favourite game, inventing games and toys, role play, Show and Tell, writing (e.g., journal reflections), singing songs, using computer software, ongoing class discussions |
| | Increasing the substance and depth of the UOI (*Making the PYP happen*, 2007, p. 44) | • Adapted games (e.g., Mr. Wolfe)<br>• Created treasure maps & changed rules of treasure hunt<br>• Explored colours in response to K2 teacher's house flood<br>• At the end of the unit, the children revisited the lines of inquiry and answered the questions (e.g., what do games teach us?)<br>• Development of conceptual understanding of UOI through form, function, responsibility |
| Ongoing assessment over multiple sites | Pre, formative, and summative assessments based on specific *learning outcomes* and overall expectations outlined for each subject according to age range (*Making the PYP happen*, 2007, p. 11) | • Pre-assessment: mind map, brainstorm, verbal questioning<br>• Formative assessment: game day (teaching rules to peers)<br>• Summative assessment: video tape of child playing game in a group, self-reflection journal with buddies, rubric assessment, and venn diagram<br>• Procedural writing - not successful at the time of the study<br>• Teacher's observations and documentation of children's behavior (e.g., post-it notes, pictures, anecdotes, video taping)<br>• LP and daily activities acknowledged through action window and certificates<br>• Portfolio, 3-way conference (see Appendix AA, pp. 1-4) |

Appendix B

Letter of Information to the Principal

Dear Principal,

From August 2006 to June 2008, I had the distinct privilege of being a member of the Uptown Primary School teaching staff. At the time, I was also enrolled as a graduate student in the Department of Education at Concordia University, Montreal, Canada. Presently at home in my native country, I have resumed my work on the research section of my M.A. thesis. It gives me great pleasure to be able to conduct the survey project at Uptown Primary School.

My thesis advisor, Professor Ellen Jacobs, Department of Education, Concordia University, will oversee all aspects of my research project. The thesis involves an examination of specific pedagogical theories about teaching and learning and the application of these theories to the beliefs and practices of the Primary Years Programme curriculum. The kindergarten level of the Early Years Programme at Uptown Primary School has been selected as the setting for the research.

The study will involve the participation of the principal, the Early Childhood coordinator, teachers, and parents of the children in the senior (K2) level classes. The research project will consist of a brief demographic survey, a questionnaire, two PYP rating scales, and a chart to complete that examines educational beliefs and practices. These should take no more than 45 minutes to complete. Parents of the children attending the K2 classes also will be asked to complete a survey and questionnaire so that I can gain an understanding of parental impressions of this curricular approach. Sample questions that will appear in the questionnaire are:

- What are your beliefs and values about education?
- Does the PYP model support both the teacher and learner as co-constructors of knowledge in the classroom?

Should you agree to participate in this study, kindly fill out the "Consent to Participate" form, place it in the coded envelope provided to you, seal the envelope, and return it with the sealed envelopes that will be submitted to you by the K2 participants. Thereafter, you will receive the survey package that will contain all of the necessary documents.

Once you have answered as many of the questions in those documents as you can, please place the forms in the special envelope that has been marked with a code instead

of your name in order to ensure confidentiality. Please respond within a 2 week period. As far as the envelopes from the parents and the teachers are concerned, please insert those in the special envelope provided, seal it and return it in the same manner as indicated above.

All of the information provided on these forms will be kept strictly confidential. You will notice that your name does not appear anywhere on the forms. The forms will be handled based on an identification code only (see above). This will ensure that any information you share with me will remain confidential. All information will be combined so that only group data will be reported in the thesis and/or for academic publications. No personal information about you or any one family will be given to the school, school board, or outside agencies. The information will be kept under lock and key in a file cabinet in the researchers' project office. Once the project is complete, all documents will be destroyed.

If you have any concerns or questions, please contact Professor E. Jacobs whose email address is jacobs@education.concordia.ca.

Thank you for taking the time to consider participating in this study.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix C

Letter of Information to the ECE Coordinator

Dear ECE Coordinator,

From August 2006 to June 2008, I had the distinct privilege of being a member of the Uptown Primary School teaching staff. At the time, I was also enrolled as a graduate student in the Department of Education at Concordia University, Montreal, Canada. Presently at home in my native country, I have resumed my work on the research section of my M.A. thesis. It gives me great pleasure to be able to conduct the survey project at Uptown Primary School.

My thesis advisor, Professor Ellen Jacobs, Department of Education, Concordia University, will oversee all aspects of my research project. The thesis involves an examination of specific pedagogical theories about teaching and learning and the application of these theories to the beliefs and practices of the Primary Years Programme curriculum. The kindergarten level of the Early Years Programme at Uptown Primary School has been selected as the setting for the research.

The study will involve the participation of the principal, the Early Childhood coordinator, teachers, and parents of the children in the senior (K2) level classes. The research project will consist of a brief demographic survey, a questionnaire, two PYP rating scales, and a chart to complete that examines educational beliefs and practices. These should take no more than 45 minutes to complete. Parents of the children attending the K2 classes also will be asked to complete a survey and questionnaire so that I can gain an understanding of parental impressions of this curricular approach. Sample questions that will appear in the questionnaire are:

- What are your beliefs and values about education?
- Does the PYP model support both the teacher and learner as co-constructors of knowledge in the classroom?

Should you agree to participate in this study, kindly fill out the "Consent to Participate" form, place it in the coded envelope provided to you, seal the envelope, and return it within 1 week to the principal of Uptown Primary School. Thereafter, you will receive the survey package that will contain all of the necessary documents. Please answer as many of the questions as you can. The forms and return envelope have been marked with a code instead of your name in order to ensure confidentiality. Please

respond within a 2 week period by inserting the documents in the envelope, seal it and return it to the Principal.

All of the information provided on these forms will be kept strictly confidential. You will notice that your name does not appear anywhere on the forms. The forms will be handled based on an identification code only (see above). This will ensure that any information you share with me will remain confidential. All information will be combined so that only group data will be reported in the thesis and/or for academic publications. No personal information about you or any one family will be given to the school, school board, or outside agencies. The information will be kept under lock and key in a file cabinet in the researchers' project office. Once the project is complete, all documents will be destroyed.

If you have any concerns or questions, please contact Professor E. Jacobs whose email address is jacobs@education.concordia.ca.

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Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix D

Letter of Information to the Teachers

Dear Teacher,

From August 2006 to June 2008, I had the distinct privilege of being a member of the Uptown Primary School teaching staff. At the time, I was also enrolled as a graduate student in the Department of Education at Concordia University, Montreal, Canada. Presently at home in my native country, I have resumed my work on the research section of my M.A. thesis. It gives me great pleasure to be able to conduct the survey project at Uptown Primary School.

My thesis advisor, Professor Ellen Jacobs, Department of Education, Concordia University, will oversee all aspects of my research project. The thesis involves an examination of specific pedagogical theories about teaching and learning and the application of these theories to the beliefs and practices of the Primary Years Programme curriculum. The senior (K2) kindergarten level of the Early Years Programme at Uptown Primary School has been selected as the setting for the research.

The study will involve the participation of the principal, the Early Childhood coordinator, teachers, and parents of the children in the senior (K2) level classes. The research project will consist of a brief demographic survey, a questionnaire, two PYP rating scales, and a chart to complete that examines educational beliefs and practices. These should take no more than 45 minutes to complete. Parents of the children attending the K2 classes also will be asked to complete a survey and questionnaire so that I can gain an understanding of parental impressions of this curricular approach. Sample questions that will appear in the questionnaire are:

- What are your beliefs and values about education?
- Does the PYP model support both the teacher and learner as co-constructors of knowledge in the classroom?

Should you agree to participate in this study, kindly contact Professor E. Jacobs whose email address is jacobs@education.concordia.ca to inform her of your decision.

Please fill out the "Consent to Participate" form and return it with the documents that will be forwarded to you in a survey package thereafter. Kindly answer as many of the questions as you can, insert all of the documents in the envelope provided, seal it and return it to the principal within a 2 week period.

The forms and return envelope have been marked with a code instead of your name in order to ensure confidentiality. All of the information provided on these forms will be kept strictly confidential. You will notice that your name does not appear anywhere on the forms. The forms will be handled based on an identification code only (see above). This will ensure that any information you share with me will remain confidential. All information will be combined so that only group data will be reported in the thesis and/or for academic publications. No personal information about you or any one family will be given to the school, school board, or outside agencies. The information will be kept under lock and key in a file cabinet in the researchers' project office. Once the project is complete, all documents will be destroyed.

If you have any concerns or questions, please contact Professor E. Jacobs at jacobs@education.concordia.ca.

Thank you for taking the time to consider participating in this study.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix E

Letter of Information to the Parents

Dear Parent,

From August 2006 to June 2008, I had the distinct privilege of being a member of the Uptown Primary School teaching staff. At the time, I was also enrolled as a graduate student in the Department of Education at Concordia University, Montreal, Canada. Presently at home in my native country, I have resumed my work on the research section of my M.A. thesis. It gives me great pleasure to be able to conduct the survey project at Uptown Primary School.

My thesis advisor, Professor Ellen Jacobs, Department of Education, Concordia University, will oversee all aspects of my research project. The thesis involves an examination of specific pedagogical theories about teaching and learning and the application of these theories to the beliefs and practices of the Primary Years Programme curriculum. The kindergarten level of the Early Years Programme at Uptown Primary School has been selected as the setting for the research.

The study will involve the participation of the principal, the Early Childhood coordinator, teachers, and parents of the children in the senior (K2) level classes. The research project will consist of a brief demographic survey, a questionnaire, two PYP rating scales, and a chart to complete that examines educational beliefs and practices. These should take no more than 45 minutes to complete. Parents of the children attending the K2 classes also will be asked to complete a survey and questionnaire so that I can gain an understanding of parental impressions of this curricular approach. Sample questions that will appear in the questionnaire are:

- What beliefs and values about education prompted you to select the Primary Years Programme for your child's education?
- What were your expectations of the Early Childhood Years programme at Uptown Primary School?

Should you agree to participate in this study, kindly fill out the "Consent to Participate" form, place it in the coded envelope provided to you, seal the envelope, and return it within 1 week to the attention of the principal of Uptown Primary School via your child's communication folder. Thereafter, you will receive a survey package that will contain all of the necessary documents. Please answer as many of the questions as you can. The forms and return envelope have been marked with a code instead of your

name in order to ensure confidentiality. Please respond within a 2 week period by inserting the documents in the envelope, seal it and return it in your child's communication folder.

All of the information provided on these forms will be kept strictly confidential. You will notice that your name does not appear anywhere on the forms. The forms will be handled based on an identification code only (see above). This will ensure that any information you share with me will remain confidential. All information will be combined so that only group data will be reported in the thesis and/or for academic publications. No personal information about you or any one family will be given to the school, school board, or outside agencies. The information will be kept under lock and key in a file cabinet in the researchers' project office. Once the project is complete, all documents will be destroyed.

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Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix F

Principal Consent Form

# CONSENT TO PARTICIPATE

This is to state that I agree to participate in a program of research being conducted by Ann Sandrin of the Department of Education, Graduate Studies, of Concordia University, Montreal, Quebec, Canada, 514-848-2424, #2016, email jacobs@education.concordia.ca.

## A. PURPOSE

I have been informed that the purpose of the research is to study the educational beliefs and practices in the Primary Years Programme at the kindergarten level of Uptown Primary School.

## B. PROCEDURES

I will be asked to fill out a number of forms that should take no more than 45 minutes to complete. This will include a demographic survey, a number of open-ended questions, 2 survey rating scales, and a chart connecting beliefs with practices. All forms have been coded as well as the return envelope in order to ensure confidentiality. Within a period of 2 weeks, I will return all of the documents in the envelope to the principal.

I have also been informed that once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data shall be filed under lock and key in Professor Jacob's office, room 16583-2. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results shall be forwarded to all participants at Uptown Primary School.

## C. RISKS AND BENEFITS

I have been informed that there is no risk to my involvement in this study. On the contrary, the researcher hopes that I will directly benefit from my participation by contributing to the understanding of childhood learning.

## D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that I am free to answer only the parts of the survey and questionnaire that I am comfortable with.
- I understand that my participation in this study is confidential and that all forms will be handled according to an assigned code.
- I understand that neither the school/school board nor outside agencies will have access to individualized results of this study at any time.
- I understand that the data from this study may be published as group findings only.

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance unit, Concordia University, at (514) 848-2424 x 2425 or by email at kwiscomb@alcor.concordia.ca.

Should you agree to participate in this study, kindly fill out the portion below, place in the special envelope provided to you, seal the envelope, and return it with the sealed envelopes that were submitted to you by the K2 participants within 1 week.

---

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THE AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

DATE _____

Appendix G

ECE Coordinator Consent Form

# CONSENT TO PARTICIPATE

This is to state that I agree to participate in a program of research being conducted by Ann Sandrin of the Department of Education, Graduate Studies, of Concordia University, Montreal, Quebec, Canada, 514-848-2424, #2016, email jacobs@education.concordia.ca.

## A. PURPOSE

I have been informed that the purpose of the research is to study the educational beliefs and practices in the Primary Years Programme at the kindergarten level of Uptown Primary School.

## B. PROCEDURES

I will be asked to fill out a number of forms that should take no more than 45 minutes to complete. This will include a demographic survey, a number of open-ended questions, 2 survey rating scales, and a chart connecting beliefs with practices. All forms have been coded as well as the return envelope in order to ensure confidentiality. Within a period of 2 weeks, I will return all of the documents in the envelope to the principal.

I have also been informed that once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data shall be filed under lock and key in Professor Jacob's office, room 16583-2. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results shall be forwarded to all participants at Uptown Primary School.

## C. RISKS AND BENEFITS

I have been informed that there is no risk to my involvement in this study. On the contrary, the researcher hopes that I will directly benefit from my participation by contributing to the understanding of childhood learning.

## D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that I am free to answer only the parts of the survey and questionnaire that I am comfortable with.
- I understand that my participation in this study is confidential and that all forms will be handled according to an assigned code.
- I understand that neither the school/school board nor outside agencies will have access to individualized results of this study at any time.
- I understand that the data from this study may be published as group findings only.

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance unit, Concordia University, at (514) 848-2424 x 2425 or by email at kwiscomb@alcor.concordia.ca.

Should you agree to participate in this study, kindly fill out the portion below, place in the special envelope provided to you, seal the envelope, and return it with the sealed envelopes that were submitted to you by the K2 participants within 1 week.

---

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THE AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

DATE _____

Appendix H

Teacher Consent Form

CONSENT TO PARTICIPATE

This is to state that I agree to participate in a program of research being conducted by Ann Sandrin of the Department of Education, Graduate Studies, of Concordia University, Montreal, Quebec, Canada, 514-848-2424, #2016, email jacobs@education.concordia.ca.

A. PURPOSE

I have been informed that the purpose of the research is to study the educational beliefs and practices in the Primary Years Programme at the kindergarten level of Uptown Primary School.

B. PROCEDURES

I will be asked to fill out a number of forms that should take no more than 45 minutes to complete. This will include a demographic survey, a number of open-ended questions, 2 survey rating scales, and a chart connecting beliefs with practices. All forms have been coded as well as the return envelope in order to ensure confidentiality. Within a period of 2 weeks, I will return all of the documents in the envelope to the principal.

I have also been informed that once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data shall be filed under lock and key in Professor Jacob's office, room 16583-2. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results shall be forwarded to all participants at Uptown Primary School.

C. RISKS AND BENEFITS

I have been informed that there is no risk to my involvement in this study. On the contrary, the researcher hopes that I will directly benefit from my participation by contributing to the understanding of childhood learning.

D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that I am free to answer only the parts of the survey and questionnaire that I am comfortable with.
- I understand that my participation in this study is confidential and that all forms will be handled according to an assigned code.
- I understand that neither the school/school board nor outside agencies will have access to individualized results of this study at any time.
- I understand that the data from this study may be published as group findings only.

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance unit, Concordia University, at (514) 848-2424 x 2425 or by email at kwiscomb@alcor.concordia.ca.

Should you agree to participate in this study, kindly contact Professor E. Jacobs by email at Jacobs@education.concordia.ca in order to inform her of your decision to participate in this project.

Kindly return the signed portion below sealed in the coded envelope included in the survey package along with all of the documents requested to the principal within a 2 week period.

---

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THE AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

DATE _____

Appendix I

Parental Consent Form

PARENTAL CONSENT TO PARTICIPATE

This is to state that I agree to participate in a program of research being conducted by Ann Sandrin of the Department of Education, Graduate Studies, of Concordia University, Montreal, Quebec, Canada, 514-848-2424, #2016, email jacobs@education.concordia.ca.

A. PURPOSE
I have been informed that the purpose of the research is to study the educational practices in my child's kindergarten class and determine parental impressions of these practices.

B. PROCEDURES
I will be asked to fill out a number of forms that should take no more than 20 minutes to complete. This will include a demographic survey, a questionnaire with 2 open-ended questions, and a survey based on my impressions of the kindergarten programme at Uptown Primary School. The forms and return envelopes have been marked with a code instead of my name in order to ensure confidentiality. Within a period of 2 weeks, I will return all of the documents in the envelope provided to the principal via my child's daily communication folder.

I have also been informed that once the surveys and questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data shall be filed under lock and key in Professor Jacob's office, room 16583-2. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results shall be forwarded to all participants at Uptown Primary School.

C. RISKS AND BENEFITS
I have been informed that there is no risk to my involvement in this study. On the contrary, the researcher hopes that I will directly benefit from my participation by contributing to the understanding of childhood learning.

D. CONDITIONS OF PARTICIPATION
- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that I am free to answer only the parts of the survey and questionnaire that I am comfortable with.
- I understand that my participation in this study is confidential and that all forms will be handled according to an assigned code.
- I understand that neither the school/school board nor any outside agencies will have access to individual results of this study at any time.
- I understand that the data from this study may be published as group findings only.

If, at any time, you have questions about your rights as a research participant, please contact the Research Ethics and Compliance unit, Concordia University, at (514) 848-2424 x 2425 or by email at kwiscomb@alcor.concordia.ca.

Should you agree to participate, kindly return the signed portion below sealed in the coded envelope to the principal within 1 week via your child's communication folder.

---

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THE AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

DATE _____

Appendix J

Thank You Letter to the Principal

Dear Principal,

Thank you for agreeing to participate in this research project that involves a study of the educational beliefs and practices in the Primary Years Programme at the kindergarten (2) level of Uptown Primary School.

As principal, you are asked to complete an administrator questionnaire that has been printed on both sides of the document and includes the following:

- a 4-page demographic survey
- a questionnaire that includes 6 open-ended questions
- a 2-page survey rating scale that contains 30 statements concerning teacher practices

The questionnaire and surveys, which have been coded for the purpose of ensuring confidentiality and anonymity, are to be returned by January 18, 2010 in the sealed, coded envelope. This deadline is crucial to the time constraints involved in the thesis defense.

As you were made aware in the previous letter of information, once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data shall be filed under lock and key in Professor Jacobs' office. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results will be forwarded to all participants at Uptown Primary School.

If you have any questions or concerns, please do not hesitate to contact Professor E. Jacobs at jacobs@education.concordia.ca.

I look forward to receiving your feedback.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix K

Thank You Letter to the ECE Coordinator

Dear ECE Coordinator,

Thank you for agreeing to participate in this research project that involves a study of the educational beliefs and practices in the Primary Years Programme at the kindergarten (2) level of Uptown Primary School.

As early years coordinator, you are asked to complete an administrator questionnaire that has been printed on both sides of the document and includes the following:

- a 3-page demographic survey
- a questionnaire that includes 4 open-ended questions
- a 2-page survey rating scale that contains 30 statements concerning teacher practices

The questionnaire and surveys, which have been coded for the purpose of ensuring confidentiality and anonymity, are to be returned by January 18, 2010 in the sealed, coded envelope to the principal. This deadline is crucial to the time constraints involved in the thesis defense.

As you were made aware in the previous letter of information, once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data will be filed under lock and key in Professor Jacobs' research office. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results will be forwarded to all participants at Uptown Primary School.

If you have any questions or concerns, please do not hesitate to contact Professor E. Jacobs at jacobs@education.concordia.ca.

I look forward to receiving your feedback.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix L

Thank You Letter to the Teachers

Dear Teacher,

Thank you for agreeing to participate in this research project that involves a study of the educational beliefs and practices in the Primary Years Programme at the kindergarten (2) level of Uptown Primary School.

As a participant, you are asked to complete a teacher questionnaire that has been printed on both sides of the document and includes the following:

- a 2-page demographic survey
- a questionnaire that includes 2 open-ended questions
- a 2-page survey rating scale that contains 30 statements concerning teacher beliefs
- a 2-page survey rating scale that contains 30 statements concerning teacher practices
- a 3-page chart that contains 30 statements connecting teacher beliefs with practices

The questionnaire and surveys, which have been coded for the purpose of ensuring confidentiality and anonymity, are to be returned by January 18, 2010 in the sealed, coded envelope to the ECE Coordinator. This deadline is crucial to the time constraints involved in the thesis defense.

As you were made aware in the previous letter of information, once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data will be filed under lock and key in Professor Jacobs' research office. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results will be forwarded to all participants at Uptown Primary School.

If you have any questions or concerns, please do not hesitate to contact Professor E. Jacobs at jacobs@education.concordia.ca.

I look forward to receiving your feedback.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix M

Thank You Letter to the Parents

Dear Parents,

Thank you for agreeing to participate in this research project that involves a study of the educational practices in your child's kindergarten class at Uptown Primary School.

As a participant, you are asked to complete a parent questionnaire that has been printed on both sides of the document and includes the following:

- a 4-page demographic survey
- a questionnaire consisting of 2 open-ended questions
- a 2-page survey rating scale consisting of 12 statements

The questionnaire and survey, which have been coded for the purpose of ensuring confidentiality and anonymity, are to be returned by January 18, 2010 in the sealed, coded envelope to the principal via your child's daily communication folder. This deadline is crucial in my effort to meet the university's deadline for thesis submission.

As you were made aware in the previous letter of information, once the questionnaires have been collected, they will be forwarded by registered mail to Professor Ellen Jacobs at Concordia University. For the duration of the study, all data will be filed under lock and key in Professor Jacobs' research office. Upon completion of the project, all data will be destroyed. A summary analysis of the research project results will be forwarded to all participants at Uptown Primary School.

If you have any questions or concerns, please do not hesitate to contact Professor E. Jacobs at jacobs@education.concordia.ca.

I look forward to receiving your feedback.

Ann Sandrin, B.A., Dip.Ed.
M.A. candidate student
Concordia University
Graduate Studies

Appendix N

Principal Demographic Survey

Principal Demographic Survey

Please answer the questions in the order that they appear:

1. Education:

☐ Elementary and High School
☐ High School Diploma
☐ Some College/University
☐ Other (Specify)
_____

☐ University Bachelor Degree
☐ University Graduate Degree
☐ Vocational Degree

2. Years in school:

Elementary _____ High School _____
College _____ University _____

TOTAL YEARS IN SCHOOL: _____

3. Teaching Experience:

How many years of administrative/teaching experience do you have in IBO schools? _____

How many years of administrative/teaching experience do you have in non-IBO schools? _____

4. Employment History:

Kindly fill in the chart starting with the most recent information.

| Year | Name of school | Position |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Appendix O

ECE Coordinator Demographic Survey

ECE Coordinator Demographic Survey

Please answer the questions in the order that they appear:

1. Education:

☐ Elementary and High School
☐ High School Diploma
☐ Some College/University
☐ Other (Specify)
_____

☐ University Bachelor Degree
☐ University Graduate Degree
☐ Vocational Degree

2. Years in school:

Elementary _____ High School _____
College _____ University _____

TOTAL YEARS IN SCHOOL: _____

3. Teaching Experience:

How many years of teaching experience do you have in IBO schools? _____
How many years of teaching experience do you have in non-IBO schools? _____

4. Employment History:

Kindly fill in the chart starting with the most recent information.

| Year | Name of school | Grades taught |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Appendix P

Teacher Demographic Survey

Teacher Demographic Survey

1. Education:

☐ Elementary and High School
☐ High School Diploma
☐ Some College/University
☐ Other (Specify)
_____

☐ University Bachelor Degree
☐ University Graduate Degree
☐ Vocational Degree

2. Years in school:

Elementary _____ High School _____
College _____ University _____

TOTAL YEARS IN SCHOOL: _____

3. Teaching Experience:

How many years of teaching experience do you have in IBO schools?
_____
How many years of teaching experience do you have in non-IBO schools?
_____

4. Employment History:

Kindly fill in the chart starting with the most recent information.

| Year | Name of school | Grades taught |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Appendix Q

Parent Demographic Survey

PARENT DEMOGRAPHIC FORM

**Date of Birth of Child (d/m/yr)_____Girl__ Boy___**

**Did your child attend a kindergarten level at Uptown Primary School last year?**

Yes _____
No _____

**Who picks up your child daily at school? _____**

**What sources of information do you receive from school (e.g., newsletter)?**

**_____ How often? _____**

**What language(s) do you speak in the home?**

English _____
French _____
Other (please specify) _____

**What language(s) do your children speak at home?**

English _____
French _____
Other (please specify) _____

**Did your child attend another school prior to this one when he or she was:**

**2 years to 4 years old?** No_____ Yes_____

Where? _____

Was it an IBO school? No_____ Yes_____

Approximate number of hours per week _____

**4 years to 5 years old?** No_____ Yes_____

Where? _____

Was it an IBO school? No_____ Yes_____

**Mother:**

Age: _____

Job Description: _____

Ethnic Background: _____

Education:

- ☐ Elementary and High School
- ☐ High School Diploma
- ☐ Some College/University
- ☐ Other (Specify)

  _____
- ☐ University Bachelor Degree
- ☐ University Graduate Degree
- ☐ Vocational Degree

Years in school:

Elementary _____ High School _____
College _____ University _____

TOTAL YEARS IN SCHOOL: _____

Marital Status:

- ☐ Married to child's father
- ☐ Divorced/separated
- ☐ Single
- ☐ Remarried
- ☐ Widowed
- ☐ Other (specify)

  _____

Please indicate the approximate yearly income for your home:

- ☐ $ 0 – $ 20 000
- ☐ $20 001 – $40 000
- ☐ $40 001 –$ 60 000
- ☐ $60 001 – $80 000
- ☐ $80 001 –$ 100 000
- ☐ $100 001 – $120 000
- ☐ $120 001 – $140 000
- ☐ $140 001 and above

Would you be interested in being sent a summary of the research project once the data have been collected and analyzed?

Yes_____ No____

If yes, what is your email address? (please print clearly). We will use your email only for sending you this report.

_____

***Father:***

Age: _____

Job Description: _____

Ethnic Background: _____

Education:

- ☐ Elementary and High School
- ☐ High School Diploma
- ☐ Some College/University
- ☐ Other (Specify)

  _____
- ☐ University Bachelor Degree
- ☐ University Graduate Degree
- ☐ Vocational Degree

Years in school:

Elementary _____ High School _____
College _____ University _____

TOTAL YEARS IN SCHOOL: _____

Marital Status:

- ☐ Married to child's father
- ☐ Divorced/separated
- ☐ Single
- ☐ Remarried
- ☐ Widowed
- ☐ Other (specify)

  _____

Please indicate the approximate yearly income for your home:

- ☐ $ 0 – $ 20 000
- ☐ $20 001 – $40 000
- ☐ $40 001 –$ 60 000
- ☐ $60 001 – $80 000
- ☐ $80 001 –$ 100 000
- ☐ $100 001 – $120 000
- ☐ $120 001 – $140 000
- ☐ $140 001 and above

Would you be interested in being sent a summary of the research project once the data have been collected and analyzed?

Yes_____ No____

If yes, what is your email address? (please print clearly). We will use your email only for sending you this report.

_____

Appendix R

Principal Open-Ended Questionnaire

1. What are your beliefs and values about education?

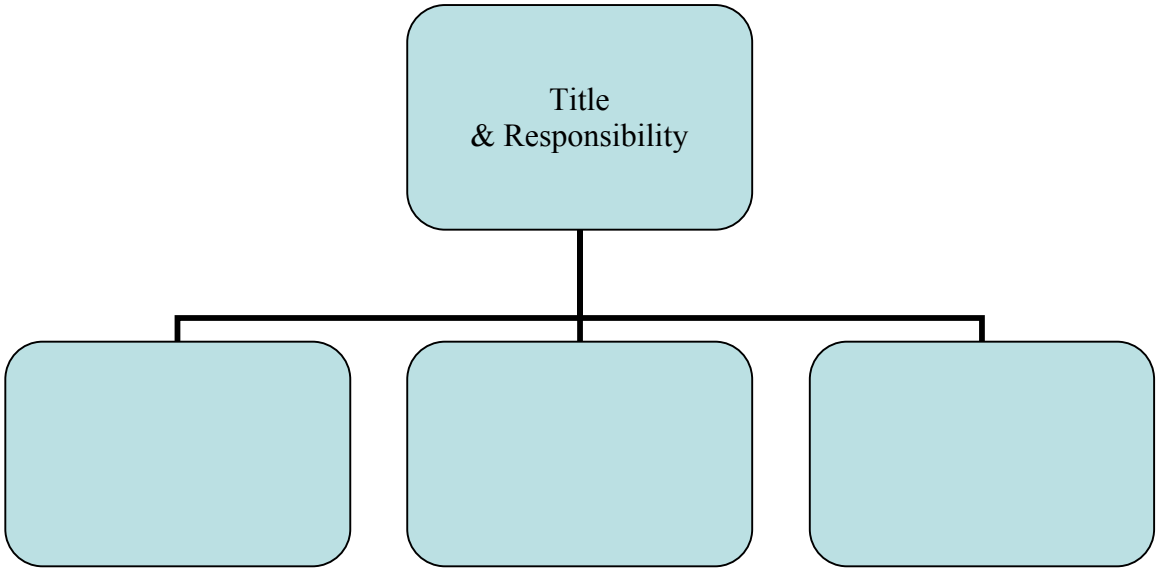
2. Did these beliefs and values influence your decision to select the IBO model of education for Uptown Primary School? Yes _____ No_____

   If *yes*, please explain how?

3. Explain your understanding of the term *constructivism*.

4. What principles guided you in your selection of the ECE coordinator and teachers at Uptown Primary School?

5. Please provide an organigram of your management team at Uptown Primary School. (e.g., see below)




6. Was it necessary to adapt the PYP to suit the needs of the student community at Uptown Primary School? If so, how?

Appendix S

ECE Coordinator Open-Ended Questionnaire

1. What are your beliefs and values about education?

2. What beliefs and values regarding education that are inherent in the IBO model of education motivated you to select this system to work as an ECE coordinator?

3. As the ECE coordinator, was it necessary to adapt the PYP to suit the needs of pre-kindergarten/kindergarten students at Uptown Primary School?

4. Kindly explain your understanding of the term *constructivism*.

Appendix T

Teacher Open-Ended Questionnaire

1. Why did you choose to work in a school with an IBO curriculum model?

2. Explain your understanding of the term *constructivism*.

Appendix U

Parent Open-Ended Questionnaire

1. You have selected the Primary Years Programme at Uptown Primary School for your child's education. What beliefs and values about education prompted you to select the PYP?

2. What were your expectations of the Early Childhood Primary Years Programme at Uptown Primary School? Has it met your expectations so far?

Appendix V

Teacher Belief Rating Scale

Teacher Belief Rating Scale, Survey Summary

TEACHER BELIEF RATING SCALE

Below you will find a set of statements. Please rate how strongly you believe in each of the following statements.

1 - do not agree
2 - agree sometimes
3 - agree most of the time
4 - agree all of the time

| | TEACHER BELIEFS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1. | The learner should be regarded as an active, co-constructor of knowledge | ☐ | ☐ | ☐ | ☐ |
| 2. | The learner should construct knowledge while interacting with peers and adults in the classroom | ☐ | ☐ | ☐ | ☐ |
| 3. | The classroom should be a community of learners | ☐ | ☐ | ☐ | ☐ |
| 4. | The learner should be treated as a valued member of a community of learners | ☐ | ☐ | ☐ | ☐ |
| 5. | The community of learners should be engaged in authentic activities and real life experiences | ☐ | ☐ | ☐ | ☐ |
| 6. | The learner should be regarded as a thinker and competent individual | ☐ | ☐ | ☐ | ☐ |
| 7. | The learner should be encouraged to take the initiative to do tasks on her/his own | ☐ | ☐ | ☐ | ☐ |
| 8. | The learner should be encouraged to become responsible for her/his own behavior during individual activities | ☐ | ☐ | ☐ | ☐ |
| 9. | The learner should be encouraged to become responsible for her/his own behavior during group related activities | ☐ | ☐ | ☐ | ☐ |
| 10. | The learner should become increasingly more confident to ask questions and share knowledge with peers | ☐ | ☐ | ☐ | ☐ |
| 11. | The provision of many and varied opportunities should exist for learners to build on prior knowledge and experiences | ☐ | ☐ | ☐ | ☐ |
| 12. | Inquiry-based learning should be developed in the classroom through pedagogically significant themes | ☐ | ☐ | ☐ | ☐ |
| 13. | The learner should explore concepts and ideas that are appropriate and of interest to her/him | ☐ | ☐ | ☐ | ☐ |
| 14. | The classroom should be a model of interactive pedagogy | ☐ | ☐ | ☐ | ☐ |
| 15. | The implementation of an interactive pedagogy should be attained through multiple resources | ☐ | ☐ | ☐ | ☐ |
| 16. | The learner should participate in interesting hands-on activities that promote learning | ☐ | ☐ | ☐ | ☐ |

| | TEACHER BELIEFS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 17. | A problem-solving curriculum content should be used to deepen the learner's conceptual understanding | ☐ | ☐ | ☐ | ☐ |
| 18. | The enhancement of the learner's language skills should result in cognitive and metacognitive development | ☐ | ☐ | ☐ | ☐ |
| 19. | The grouping and regrouping of learners should be done in order to provide learners with varied learning experiences and multiple perspectives | ☐ | ☐ | ☐ | ☐ |
| 20. | The learner should be engaged in a curriculum that involves learning beyond traditional subjects | ☐ | ☐ | ☐ | ☐ |
| 21. | A connection between academics and social life should be made through the curriculum | ☐ | ☐ | ☐ | ☐ |
| 22. | A transdisciplinary curriculum that is coherent and follows the interests of the learner should be implemented | ☐ | ☐ | ☐ | ☐ |
| 23. | The different learning abilities and styles of all learners should be accommodated through a variety of classroom activities | ☐ | ☐ | ☐ | ☐ |
| 24. | A variety of skills should be taught to involve and support learners in their learning | ☐ | ☐ | ☐ | ☐ |
| 25. | The inquiry cycle should be used as an effective pedagogical tool for teaching and learning | ☐ | ☐ | ☐ | ☐ |
| 26. | Scaffolding by the teacher and peers should be used to support the learner | ☐ | ☐ | ☐ | ☐ |
| 27. | Ongoing assessment should be used to inform the parent of her/his child's current level of understanding | ☐ | ☐ | ☐ | ☐ |
| 28. | When planning learning tasks and activities, the teacher should target the learner's potential | ☐ | ☐ | ☐ | ☐ |
| 29. | The learner's daily interactions with peers should provide her/him with the opportunity to test and explain her/his understanding and ideas | ☐ | ☐ | ☐ | ☐ |
| 30. | The learning environment should be stimulating and appeal to the diverse interests of all learners | ☐ | ☐ | ☐ | ☐ |

Table 4

*Teacher Belief Rating Scale, Survey Summary*

| | Teacher A | Teacher B |
|---|---|---|
| Statement 1 | 3 | 3 |
| Statement 2 | 4 | 3 |
| Statement 3 | 4 | 4 |
| Statement 4 | 3 | 4 |
| Statement 5 | 4 | 3 |
| Statement 6 | 4 | 3 |
| Statement 7 | 4 | 3 |
| Statement 8 | 4 | 4 |
| Statement 9 | 4 | 4 |
| Statement 10 | 3 | 4 |
| Statement 11 | 4 | 3 |
| Statement 12 | 2 | 3 |
| Statement 13 | 2 | 4 |
| Statement 14 | 4 | 3 |
| Statement 15 | 4 | 4 |
| Statement 16 | 4 | 3 |
| Statement 17 | 4 | 4 |
| Statement 18 | 4 | 4 |
| Statement 19 | 4 | 4 |
| Statement 20 | 4 | 4 |
| Statement 21 | 4 | 3 |
| Statement 22 | 4 | 3 |
| Statement 23 | 4 | 4 |
| Statement 24 | 4 | 4 |
| Statement 25 | 2 | 3 |
| Statement 26 | 4 | 4 |
| Statement 27 | 2 | 3 |
| Statement 28 | 2 | 3 |
| Statement 29 | 3 | 3 |
| Statement 30 | 4 | 3 |

*Note*. 1 = do not agree; 2 = agree sometimes; 3 = agree most of the time; 4 = agree all of the time

Appendix W

Teacher Practice Rating Scale

TEACHER PRACTICE RATING SCALE

Below you will find a set of statements concerning teacher practices. Please rate each statement according to the extent that these practices have been implemented successfully in the curriculum through your classroom activities.

Please rate each statement according to the extent that these practices have been implemented successfully at the K2 level of the school.

1 - does not occur
2 - occurs sometimes
3 - occurs frequently
4 - occurs always

| | TEACHER PRACTICES | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1. | The learner is an active, co-constructor of knowledge | ☐ | ☐ | ☐ | ☐ |
| 2. | The learner constructs knowledge while interacting with peers and adults in the classroom | ☐ | ☐ | ☐ | ☐ |
| 3. | The classroom is a community of learners | ☐ | ☐ | ☐ | ☐ |
| 4. | The learner is treated as a valued member of a community of learners | ☐ | ☐ | ☐ | ☐ |
| 5. | The community of learners is engaged in authentic activities and real life experiences | ☐ | ☐ | ☐ | ☐ |
| 6. | The learner is a thinker and competent individual | ☐ | ☐ | ☐ | ☐ |
| 7. | The learner is encouraged to take the initiative to do tasks on her/his own | ☐ | ☐ | ☐ | ☐ |
| 8. | The learner is encouraged to become responsible for her/his own behavior during individual activities | ☐ | ☐ | ☐ | ☐ |
| 9. | The learner is encouraged to become responsible for her/his own behavior during group related activities | ☐ | ☐ | ☐ | ☐ |
| 10. | The learner becomes increasingly more confident to ask questions and share knowledge with her/his peers | ☐ | ☐ | ☐ | ☐ |
| 11. | The provision of many and varied opportunities exists for learners to build on prior knowledge and experiences | ☐ | ☐ | ☐ | ☐ |
| 12. | Inquiry-based learning is developed in the classroom through pedagogically significant themes | ☐ | ☐ | ☐ | ☐ |
| 13. | The learner explores concepts and ideas that are appropriate and of interest to her/him | ☐ | ☐ | ☐ | ☐ |
| 14 | The classroom is a model of interactive pedagogy | ☐ | ☐ | ☐ | ☐ |
| 15. | The implementation of an interactive pedagogy is attained through multiple resources | ☐ | ☐ | ☐ | ☐ |

| | TEACHER PRACTICES | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 16. | The learner participates in interesting hands-on activities that promote learning | ☐ | ☐ | ☐ | ☐ |
| 17. | A problem-solving curriculum content is used to deepen the learner's conceptual understanding | ☐ | ☐ | ☐ | ☐ |
| 18. | The enhancement of the learner's language skills results in cognitive and metacognitive development | ☐ | ☐ | ☐ | ☐ |
| 19. | The grouping and regrouping of learners are done in order to provide learners with varied learning experiences and multiple perspectives | ☐ | ☐ | ☐ | ☐ |
| 20. | The learner is engaged in a curriculum that involves learning beyond traditional subjects | ☐ | ☐ | ☐ | ☐ |
| 21. | A connection between academics and social life is made through the curriculum | ☐ | ☐ | ☐ | ☐ |
| 22. | A transdisciplinary curriculum that is coherent and follows the interests of the learner is implemented in the classroom | ☐ | ☐ | ☐ | ☐ |
| 23. | The different learning abilities of all learners are accommodated through a variety of classroom activities | ☐ | ☐ | ☐ | ☐ |
| 24. | A variety of skills is taught that involves and supports learners in their learning | ☐ | ☐ | ☐ | ☐ |
| 25. | The inquiry cycle is used as an effective pedagogical tool for teaching and learning | ☐ | ☐ | ☐ | ☐ |
| 26. | Scaffolding is used by the teacher and peers to support the learner | ☐ | ☐ | ☐ | ☐ |
| 27. | Ongoing assessment is used to inform the parent of her/his child's current level of understanding | ☐ | ☐ | ☐ | ☐ |
| 28. | When planning learning tasks and activities, the learner's potential is targeted | ☐ | ☐ | ☐ | ☐ |
| 29. | The learner's daily interactions with peers provide her/him with the opportunity to test and explain her/his understanding and ideas | ☐ | ☐ | ☐ | ☐ |
| 30. | The learning environment is updated regularly to stimulate and appeal to the diverse interests of the learner | ☐ | ☐ | ☐ | ☐ |

Table 5

*Teacher Practice Rating Scale, Survey Summary*

| | Teacher A | Teacher B |
|---|---|---|
| Statement 1 | 3 | 3 |
| Statement 2 | 3 | 3 |
| Statement 3 | 4 | 4 |
| Statement 4 | 4 | 3 |
| Statement 5 | 3 | 4 |
| Statement 6 | 3 | 3 |
| Statement 7 | 4 | 2 |
| Statement 8 | 4 | 3 |
| Statement 9 | 4 | 3 |
| Statement 10 | 3 | 3 |
| Statement 11 | 3 | 4 |
| Statement 12 | 4 | 3 |
| Statement 13 | 3 | 2 |
| Statement 14 | 3 | 3 |
| Statement 15 | 3 | 3 |
| Statement 16 | 3 | 3 |
| Statement 17 | 3 | 3 |
| Statement 18 | 3 | 3 |
| Statement 19 | 4 | 4 |
| Statement 20 | 4 | 3 |
| Statement 21 | 4 | 3 |
| Statement 22 | 4 | 2 |
| Statement 23 | 4 | 4 |
| Statement 24 | 4 | 3 |
| Statement 25 | 3 | 4 |
| Statement 26 | 4 | 3 |
| Statement 27 | 2 | 3 |
| Statement 28 | 3 | 3 |
| Statement 29 | 3 | 3 |
| Statement 30 | 4 | 4 |

*Note*. 1 = does not occur; 2 = occurs sometimes; 3 = occurs frequently; 4 = occurs always

Appendix X

Teacher Chart: Connecting Beliefs with Classroom Practices

TEACHER CHART: CONNECTING BELIEFS WITH CLASSROOM PRACTICES
(adapted from Jacobs, Vukelich and Howe, 2006)

The following chart provides specific pedagogical perspectives about teaching and learning. Indicate an example(s) of specific interaction(s) with a learner/learners in your class that demonstrate(s) practices related to these views.

Provide examples only for practices that are implemented in your classroom.
Make an X in the CONCRETE CLASSROOM EXAMPLES column for practices that are not implemented.

| TEACHER PRACTICES | CONCRETE CLASSROOM EXAMPLES |
|---|---|
| 1. The learner is treated as an active, co-constructor of knowledge | |
| 2. The learner constructs knowledge while interacting with peers and adults in the classroom | |
| 3. The classroom is a community of learners | |
| 4. The learner is treated as a valued member of a community of learners | |
| 5. The community of learners is engaged in authentic activities and real life experiences | |
| 6. The learner is treated as a thinker and competent individual | |
| 7. The learner is encouraged to take the initiative to do tasks on her/his own | |
| 8. The learner is encouraged to become responsible for her/his own behavior during individual activities | |
| 9. The learner is encouraged to become responsible for her/his own behavior during group related activities | |

| | |
|---|---|
| 10. The learner becomes increasingly more confident to ask questions and share knowledge with peers | |
| 11. The learner is provided with opportunities to build on her/his prior knowledge and experiences | |
| 12. The learner is engaged in many pedagogically significant themes developed in class | |
| 13. The learner is able to explore concepts and ideas that are appropriate and of interest to her/him | |
| 14. The classroom is a model of interactive pedagogy | |
| 15. The implementation of an interactive pedagogy is attained through multiple resources | |
| 16. The learner participates in interesting hands-on activities that promote learning | |
| 17. A problem-solving curriculum content is used to deepen conceptual understanding | |
| 18. The enhancement of the learner's language skills results in cognitive and metacognitive development | |
| 19. The grouping and regrouping of students are done to provide students with varied learning experiences and multiple perspectives | |
| 20. The learner is engaged in a curriculum that involves learning beyond traditional subjects | |

| | |
|---|---|
| 21. A connection between academics and social life is made through the curriculum | |
| 22. A transdisciplinary curriculum that is coherent and follows the interests of the learner is implemented | |
| 23. The different learning abilities of all learners are accommodated through a variety of classroom activities | |
| 24. A variety of skills is taught that involves and supports learners in their learning | |
| 25. The inquiry cycle is used as an effective pedagogical tool for teaching and learning | |
| 26. Scaffolding is used by the teacher and peers to support the learner | |
| 27. Ongoing assessment is used to inform the parent of her/his child's current level of understanding | |
| 28. When planning learning tasks and activities, the teacher targets the learner's potential | |
| 29. The learner's daily interactions with peers provide her/him with the opportunity to test and explain her/his ideas | |
| 30. The learning environment is updated regularly to stimulate and appeal to the diverse interests of the learner | |

Appendix Y

ECE Coordinator Rating of Teacher Practices

ECE Coordinator Rating of Teacher Practices in the K2 Classroom, Survey Summary

ECE RATING OF TEACHER PRACTICES IN THE K2 CLASSROOM

Below you will find a set of statements concerning teacher practices. As Early Childhood coordinator, please rate each statement according to the extent that these practices have been implemented successfully in the K2 level curriculum through teacher classroom activities.

1 - does not occur
2 - occurs sometimes
3 - occurs frequently
4 - occurs always

| | TEACHER PRACTICES | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1. | The learner is an active, co-constructor of knowledge | ☐ | ☐ | ☐ | ☐ |
| 2. | The learner constructs knowledge while interacting with peers and adults in the classroom | ☐ | ☐ | ☐ | ☐ |
| 3. | The classroom is a community of learners | ☐ | ☐ | ☐ | ☐ |
| 4. | The learner is treated as a valued member of a community of learners | ☐ | ☐ | ☐ | ☐ |
| 5. | The community of learners is engaged in authentic activities and real life experiences | ☐ | ☐ | ☐ | ☐ |
| 6. | The learner is a thinker and competent individual | ☐ | ☐ | ☐ | ☐ |
| 7. | The learner is encouraged to take the initiative to do tasks on her/his own | ☐ | ☐ | ☐ | ☐ |
| 8. | The learner is encouraged to become responsible for her/his own behavior during individual activities | ☐ | ☐ | ☐ | ☐ |
| 9. | The learner is encouraged to become responsible for her/his own behavior during group related activities | ☐ | ☐ | ☐ | ☐ |
| 10. | The learner becomes increasingly more confident to ask questions and share knowledge with her/his peers | ☐ | ☐ | ☐ | ☐ |
| 11. | The provision of many and varied opportunities exists for learners to build on prior knowledge and experiences | ☐ | ☐ | ☐ | ☐ |
| 12. | Inquiry-based learning is developed in the classroom through pedagogically significant themes | ☐ | ☐ | ☐ | ☐ |
| 13. | The learner explores concepts and ideas that are appropriate and of interest to her/him | ☐ | ☐ | ☐ | ☐ |
| 14 | The classroom is a model of interactive pedagogy | ☐ | ☐ | ☐ | ☐ |
| 15. | The implementation of an interactive pedagogy is attained through multiple resources | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| 16. | The learner participates in interesting hands-on activities that promote learning | ☐ | ☐ | ☐ | ☐ |
| 17. | A problem-solving curriculum content is used to deepen the learner's conceptual understanding | ☐ | ☐ | ☐ | ☐ |
| 18. | The enhancement of the learner's language skills results in cognitive and metacognitive development | ☐ | ☐ | ☐ | ☐ |
| 19. | The grouping and regrouping of learners are done in order to provide learners with varied learning experiences and multiple perspectives | ☐ | ☐ | ☐ | ☐ |
| 20. | The learner is engaged in a curriculum that involves learning beyond traditional subjects | ☐ | ☐ | ☐ | ☐ |
| 21. | A connection between academics and social life is made through the curriculum | ☐ | ☐ | ☐ | ☐ |
| 22. | A transdisciplinary curriculum that is coherent and follows the interests of the learner is implemented in the classroom | ☐ | ☐ | ☐ | ☐ |
| 23. | The different learning abilities of all learners are accommodated through a variety of classroom activities | ☐ | ☐ | ☐ | ☐ |
| 24. | A variety of skills is taught that involves and supports learners in their learning | ☐ | ☐ | ☐ | ☐ |
| 25. | The inquiry cycle is used as an effective pedagogical tool for teaching and learning | ☐ | ☐ | ☐ | ☐ |
| 26. | Scaffolding is used by the teacher and peers to support the learner | ☐ | ☐ | ☐ | ☐ |
| 27. | Ongoing assessment is used to inform the parent of her/his child's current level of understanding | ☐ | ☐ | ☐ | ☐ |
| 28. | When planning learning tasks and activities, the learner's potential is targeted | ☐ | ☐ | ☐ | ☐ |
| 29. | The learner's daily interactions with peers provide her/him with the opportunity to test and explain her/his understanding and ideas | ☐ | ☐ | ☐ | ☐ |
| 30. | The learning environment is updated regularly to stimulate and appeal to the diverse interests of the learner | ☐ | ☐ | ☐ | ☐ |

Table 6

*ECE Coordinator Rating of Teacher Practices in the K2 Classroom, Survey Summary*

| | ECEC |
|---|---|
| Statement 1 | 3 |
| Statement 2 | 4 |
| Statement 3 | 4 |
| Statement 4 | 4 |
| Statement 5 | 3 |
| Statement 6 | 3 |
| Statement 7 | 3 |
| Statement 8 | 4 |
| Statement 9 | 4 |
| Statement 10 | 3 |
| Statement 11 | 3 |
| Statement 12 | 3 |
| Statement 13 | 3 |
| Statement 14 | 3 |
| Statement 15 | 3 |
| Statement 16 | 4 |
| Statement 17 | 3 |
| Statement 18 | 3 |
| Statement 19 | 3 |
| Statement 20 | 4 |
| Statement 21 | 4 |
| Statement 22 | 4 |
| Statement 23 | 3 |
| Statement 24 | 3 |
| Statement 25 | 2 |
| Statement 26 | 3 |
| Statement 27 | 3 |
| Statement 28 | 3 |
| Statement 29 | 4 |
| Statement 30 | 3 |

*Note*. 1 = does not occur; 2 = occurs sometimes; 3 = occurs frequently; 4 = occurs always

Appendix Z

Parent Survey

Parent Survey, Survey Summary

PARENT SURVEY

The following survey concerns elements that relate to the K2 level classroom learning environment at Uptown Primary School. You have received information regularly through *Classroom Connections*, report cards, parent's night, 3 way-conference, and your child's feedback regarding her/his experiences in K2. Do you think that the statements in the boxes below refer to your child's experiences in the K2 class this year?

Please check off your answer in the column to the right of the statement by referring to the following scale:

1 - strongly disagree 2 - disagree 3 - uncertain 4 - agree 5 - strongly agree

Please also provide a brief explanation of your answer in the space provided.

| | 1 2 3 4 5 | EXPLANATION |
|---|---|---|
| 1. My child builds knowledge while interacting with classmates and adults in the classroom | ☐ ☐ ☐ ☐ ☐ | |
| 2. My child is treated as a valued member of the classroom community | ☐ ☐ ☐ ☐ ☐ | |
| 3. My child is encouraged to become responsible for her /his own behavior | ☐ ☐ ☐ ☐ ☐ | |
| 4. My child shows growth in all areas of development: academic, social, cultural, and emotional | ☐ ☐ ☐ ☐ ☐ | |
| 5. My child is provided with opportunities to build on her/his prior knowledge and experiences | ☐ ☐ ☐ ☐ ☐ | |

| | | |
|---|---|---|
| 6. My child engages in real life learning experiences throughout the curriculum | ☐ ☐ ☐ ☐ ☐ | |
| 7. My child participates in interesting hands-on activities | ☐ ☐ ☐ ☐ ☐ | |
| 8. My child's education involves a connection between learning that occurs at school, home, and in the community | ☐ ☐ ☐ ☐ ☐ | |
| 9. My child is supported by a variety of teaching practices and resources | ☐ ☐ ☐ ☐ ☐ | |
| 10. My child's learning process is displayed in different ways on an ongoing basis | ☐ ☐ ☐ ☐ ☐ | |
| 11. I am kept informed of my child's level of understanding through my child's self evaluations and teacher evaluations | ☐ ☐ ☐ ☐ ☐ | |
| 12. The classroom environment is regularly updated to stimulate my child's learning | ☐ ☐ ☐ ☐ ☐ | |

Table 7

*Parent Survey, Survey Summary*

| | | K2 Yellow (2) Parents | K2 Blue (5) Parents | K2 Green (2) Parents | K2 Red (1) Parents |
|---|---|---|---|---|---|
| 1 | Co-construction of knowledge | 5,4 | 4,4,5,5,5 | 5,4 | 5 |
| 2 | Community of learners | 5,4 | 4,4,5,5,5 | 4,3 | 5 |
| 3 | Self-regulation | 5,4 | 4,4,4,5,5 | 4,5 | 5 |
| 4 | Personal development of the whole child | 5,3 | 4,4,4,5,5 | 4,5 | 4 |
| 5 | Building on prior knowledge | 5,3 | 3,4,5,5,5 | 4,4 | 4 |
| 6 | Authentic learning | 5,4 | 4,4,4,4,5 | 4,5 | 5 |
| 7 | Hands-on learning | 5,4 | 4,4,4,4,5 | 4,5 | 5 |
| 8 | Exosystems (home-school-community) | 5,5 | 4,4,4,5,3 | 4,5 | 4 |
| 9 | Teacher practices support diverse learning styles | 5,4 | 3,5,4,4,4 | 4,3 | 5 |
| 10 | Visible learning displayed | 5,4 | 4,4,4,4,5 | 3,5 | 5 |
| 11 | Teacher and student self-assessment | 5,4 | 3,3,5,4,4 | 4,4 | 5 |
| 12 | Regular updating of classroom environment | 4,4 | 3,3,5,4,4 | 4,3 | 4 |

*Note*. 1 = strongly disagree; 2 = disagree; 3 = uncertain; 4 = agree; 5 = strongly agree

Appendix AA

K2 UOI Planner

## 1. What is our purpose?

**To inquire into the following:**

- **transdisciplinary theme**

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

- **central idea**

People play to learn, explore and have fun.

**Summative assessment task(s):**

What are the possible ways of assessing students' understanding of the central idea? What evidence, including student-initiated actions, will we look for?

***self-assessment and reflection o fplay-watch video of self playing in group

Formative

Photos and videos, group discussion notes on skills and attitudes and the social elements of play.

Pre and post assessment questions

Self-reflections, with buddies, what have you learnt fro this game etc?

Teacher observations of social skills and cooperation attitude

Beach day and Zayed university reflections

Class/grade: KG 2 Age group: 4-6

School: Uptown School dxb, UAE School code:

Title: Let's Play

PYP planner

Teacher(s): Lyndsey Thompson, Michelle Walshe, Monique Anduze, Cora Brady-Robeau

Date: Sept-Nov

Proposed duration: number of hours over number of weeks 6wks

## 2. What do we want to learn?

What are the key concepts (form, function, causation, change, connection, perspective, responsibility, reflection) to be emphasized within this inquiry?

-Responsibility, form, function

What lines of inquiry will define the scope of the inquiry into the central idea?

- Why we play
- The social elements of play
- Different kinds of toys and games
- Connection between playing and learning

What teacher questions/provocations will drive these inquiries?

What makes a game fun?
Why do we have rules when we play?
What games do you like playing?
What do the games teach us?

**3. How might we know what we have learned?**

*This column should be used in conjunction with "How best might we learn?"*

What are the possible ways of assessing students' prior knowledge and skills? What evidence will we look for?

Pre-assess group interview/brainstorm

What is play? Why do we play?

What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for?

Verbal questioning

Photos of observations

Show and tell

Teacher notes

Mind maps

Journal reflection pieces

**4. How best might we learn?**

What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?

- Sml group discussions on why we have rules. Chn reinforced these through playing games
- What makes a game fun-concept reinforced through games, some from home
- A game day to bring games to discuss instructions and rules and then to teach them to peers (formative)
- Explore difference between game and toy
- Procedural write, teach basic template
- Traditional Arabic games
- PE games with rules and making u games of your own

What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?

Discuss social skills..cooperating, resolving conflict, adapting a variety of roles, ie game captain. Using books photos and videos and prompts

Discuss attitude cooperation and enthusiasm, singing, books, photos as above

**5. What resources need to be gathered?**

What people, places, audio-visual materials, related literature, music, art, computer software, etc, will be available?

A variety of toys and games (knex, large snakes n ladders, blocks, role play items, how do they work toys, musical instruments, lego, playhouse tents, dress up)

Games using ICT, starfall.com, kidspix, kidsgames.org.

Outside play equipment, new playhouse outside, use outdoor tables often, sand pit, sports gear

How will the classroom environment, local environment, and/or the community be used to facilitate the inquiry?

Launch with beach day in playground, and school trip later in unit, children's city? Zayed university?

### 6. To what extent did we achieve our purpose?

Assess the outcome of the inquiry by providing evidence of students' understanding of the central idea. The reflections of all teachers involved in the planning and teaching of the inquiry should be included.

-There were lots of open-ended questions asked by teachers and group discussions in sml/lrg groups. Instructions/procedural explored somewhat, summative reflection of play video and rubric completed. Procedural writing not successful given the age of chn at start of year with this as first UofI.

How you could improve on the assessment task(s) so that you would have a more accurate picture of each student's understanding of the central idea.

-was fairly successful this time and the children were surprisingly honest on their reflections

What was the evidence that connections were made between the central idea and the transdisciplinary theme?

-relationships with family and friends…social aspects

-trip to Zayed uni looked at the physical/personal health side

-venn diagram on healthy vs nonhealthy food/activities/play

-play…social aspects of play in lines of inquiry

-

### 7. To what extent did we include the elements of the PYP?

What were the learning experiences that enabled students to:

- develop an understanding of the concepts identified in "What do we want to learn?"
- demonstrate the learning and application of particular transdisciplinary skills?
- develop particular attributes of the learner profile and/or attitudes?

In each case, explain your selection.

-form function responsibility explored through playing different types of games and discussing rules and procedures

-team/game captains reinforcing rules as they lay and change roles within group

-guest speakers at Zayed university, making own toys, ie, Frisbees etc and confirming how to be safe when we use them

K2 blue…action window introduced during this time, along with attitudes during hub time, recorded by teacher on post-it notes, displayed on window for all to read.

K2 yellow…did not introduce attitudes/L.profile and will focus in next UofI on defining these

-k2 green….since this is my first UofI I felt that I did not properly interweave the attitudes/learner profile into the unit. Next unit I want to focus more on the PYP elements, ie, attitudes and show hoe it is exhibited in our unit.

Red…daily focus on attitude and certificate given to chn displaying it.

**8. What student-initiated inquiries arose from the learning?**

Record a range of student-initiated inquiries and student questions and highlight any that were incorporated into the teaching and learning.

-k2 green adapting what's the time Mr Wolf game to suit themselves…creating a base for safety

-k2 blue Ms Thompson's house flood, led to exploring colours and mixing to make new ones

-k2 red + green creating treasure maps and changing rules of treasure hunt etc

*At this point teachers should go back to box 2 "What do we want to learn?" and highlight the teacher questions/provocations that were most effective in driving the inquiries.*

*-what do the games teach us?*

**What student-initiated actions arose from the learning?**

Record student-initiated actions taken by individuals or groups showing their ability to reflect, to choose and to act.

**9. Teacher notes**

**-Uofl was first one completed during school year…chn were still very young and immature etc. Explaining rules and structure of games/play/instructions etc would be explored at this settling time, caring sharing hands etc etc. Fitted well, although instructions and procedural writing was only explored briefly given the age of chn.**