# CHILD-CENTERED, PLAY-BASED CURRICULUM AT A HONG KONG KINDERGARTEN AND NURSERY: A GAP ANALYSIS

by

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A Dissertation Presented to the
FACULTY OF THE USC ROSSIER SCHOOL OF EDUCATION
UNIVERSITY OF SOUTHERN CALIFORNIA
In Partial Fulfilment of the
Requirements for the Degree
DOCTOR OF EDUCATION

8 August 2016

**Acknowledgments**

First I owe a tremendous amount of gratitude to my family, especially my wife, Purina. Her support for me to pursue a doctoral degree has never wavered. I truly believe we tackled this together, just as we have on many other obstacles. Most importantly she has always been there to remind me of my capabilities when I felt discouraged. She is truly a source of joy and inspiration in my life. I would also like to thank my three children, Kriscia, Hadyn and Annalise for their encouragement and for their understanding of a father who seemed to be constantly doing his homework. I hope one day they will understand that they can accomplish anything with hard work and determination. I am also forever grateful to my mother, Christina, who taught me the value of persistent and perseverance. She believed in me and encouraged me to reach my full potential. She has and will always serve as a role model for me and my family. I am grateful for the support of my sisters, Millie and Maggie, and for the trails they have blazed for me and for their enduring support for me under any situation.

I would also like to express my deep appreciation to all the professors and the administration team of the Global Executive Ed.D program for their support, guidance and seemingly effortless logistical arrangement. I want to especially express my gratitude to my dissertation committee, Dr. Larry Picus, Dr. Cathy Krop and Dr. Mark Robinson, for their advice and especially my dissertation chair, Dr. Larry Picus, for his motivation and encouragement throughout the dissertation process. I have benefitted tremendously from his insight and guidance.

I would also like to thank all those who have help me in completing my dissertation process including all my colleagues from Cohort 3, Pamela Chan and Karen Lai.

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## Abstract

The study examined child-centered, play-based curriculum at a pre-school educational organization in Hong Kong. The focus was on assessing the relationship between the emphasis on teaching academic skills and its effect on diminishing child-centered pedagogy such as play-based learning. A gap analysis was used as the framework to investigate areas of improvement through the lenses of knowledge, motivation and organization. Data collected through surveys, interviews and classroom observations of teachers revealed that they had strong competence with regard to knowledge, motivation and organizational issues relating to play-based learning. Nevertheless, findings showed that teachers were not as familiar with certain factual knowledge and conceptual knowledge regarding the definition of play, characteristics of play and how principles of play can help promote mathematical and literacy skills. The study also confirmed a number of organizational improvement areas, such as the considerable amount of administrative work, curriculum expectations and demands, and an overwhelming culture of academic readiness. Proposed solutions were devised based on the findings to provide strategies to achieve the goal of spending more time in the curriculum on free-choice activities such as play as recommended by the Education Bureau of Hong Kong. As part of the study, a three-stage implementation plan and an evaluation plan were recommended.

# CHAPTER ONE: INTRODUCTION

In Hong Kong and around the world, pre-school education faces the same pressure to start teaching academic skills at a progressively younger age at the expense of incorporating more child-centered practices. This pressure, caused by concerns about children not being ready for school as well as concerns about children falling behind in their later academic learning, has become a growing trend. In one study in the United States, research revealed that children in all-day kindergartens generally spend four to six times as much time in literacy and math instruction and taking or preparing for tests as in play or free-choice time (Miller & Almon, 2009). The lack of opportunities to play is not beneficial for the children as decades of research and theory in child development confirm the importance of play and how play can help foster in children a strong foundation for cognitive, social and emotional concepts. Experts have also agreed that the loss of this foundation, which can only be built through play, will undermine children's success in school and academic competence for years to come (Hirsh-Pasek & Golinkoff, 2003)

## Organizational Context and Mission

This study was conducted based on an educational organization in Hong Kong which is comprised of nine kindergartens and nurseries that provide quality pre-school education to children aged two to six (collectively referred to as the "Kindergarten"). The mission has been to provide all children a challenging learning environment where they can develop the necessary social and personal skills needed to become caring, curious, multi-lingual learners. The Kindergarten is a private kindergarten with no government funding or religious affiliation. There are a total of 3789 students separated in four grade levels divided as pre-nursery, nursery, lower class and upper class. Five of the nine kindergartens are approved by The International Baccalaureate (the Swiss international educational foundation) to conduct the Primary Years

Programme. A combined staff of one chief principal, nine principals, 277 educators and 67 administrative staff handle the daily operation of the Kindergarten. A school board of directors of six members dictates the strategic initiatives of the Kindergarten.

The Kindergarten was founded in the early sixties and has grown from two classrooms to nine campuses across different districts in Hong Kong. Changes that occurred were not only seen in the extension of more campuses, but also in the evolution of a more stimulating learning environment, the presence of teachers with higher professional qualifications, the transformed role of teachers from "teaching" to "facilitating" and the move towards a curriculum with a strong emphasis on inquiry-based learning.

## Organizational Performance Status

The organizational performance gap at the root of this study is that too much emphasis is placed on teaching academic skills at the expense of engaging in more child-centered pedagogy such as play-based learning. "Learning through play" has been recommended as the mode of learning and teaching for young children in Hong Kong as documented in the local official education report since 1982 (Fung & Cheng, 2011). As society becomes increasingly complex, competitive and fast-paced, young children are being pushed to perform beyond their capacity and pre-schools have responded with increasing structured time for academic instructions and reduced time for free-choice activities like play.

In the Kindergarten, the amount of time allocated to play and creative instruction has decreased by forty percent while the amount of time allocated to academic instructions has increased by one hundred percent over the past three years since 2013. In close examination of the teachers' timetable for a half-day lower class, it was revealed that time allocated for free-choice activities and small group activities decreased from 560 minutes per week to about 390

minutes (30% decrease) while language reading and writing time were increased from 180 minutes per week to about 280 minutes (55% increase).

Teachers are also encountering different challenges in implementing "play" in the curriculum. Although the schedule of activities has allocated fixed timeslots for small group activities time, teachers are responsible to plan the specific activity to be conducted during those time slots. Instead of allowing more time for children to explore and be natural inquiry learners, teachers tend to react to society's pressure for academic achievements and often lead small group activities in teacher-directed ways. This trend towards more academic instruction is creating an increasing gap between the amount of time spent in child-centered pedagogy as recommended by the Education Bureau of Hong Kong ("EDB") (and by early childhood educators around the world) and the actual amount of time spent on child-centered pedagogy engaged by teachers in the curriculum at the Kindergarten. The researcher believes this gap directly affects the mission of the Kindergarten to provide all children a challenging learning environment where they can develop the necessary social and personal skills needed to become caring, curious, multi-lingual learners.

## Related Literature

Similar to the principles espoused by early childhood educators around the world, documents published by the EDB have advocated child-developmentally appropriate pedagogy, like play-based learning, as the core value of the pre-primary curriculum since 1982 (Fung & Cheng, 2011). Decades of research in child development confirm that play is the primary vehicle through which children build a strong foundation for cognitive, social and emotional concepts (Moyles, 1994). Play has also been recognized as an effective form of pedagogy to promote learning in the early years (Bruce, 1991; Cordova & Leong, 2001; Goncu, Mistry & Mosier,

2000; Moyles, 1994). Therefore, play serves a crucial part in the "child-centered" concept as a key element of the learning and teaching strategies in early childhood education. Studies conducted in 1980's concluded that when children are playing, they are intrinsically motivated, pleasurably involved and actively engaged; and these elements provide the most desirable and optimal conditions for learning (Rubin, Fein, & Vandenberg, 1983)

Nevertheless, a gap between the rhetoric and reality of implementation has repeatedly been identified in the Hong Kong Government's Quality Assurance Inspection (QAI) Annual Reports (HKSAR Government Education Department 2003,2004,2005,2006b; HKSAR Government Education Bureau 2007). In other words, the problem facing educators is not that they do not believe in the benefits of learning through play, but in reality they face many challenges to use play to promote learning. Perhaps part of the problem, as indicated by Wood and Bennett (1997), is that play is spontaneous and different from traditional linear learning, which has clear educational objectives and promotes conscious learning, it is not always easy to articulate what "learning through play" is and to integrate it into a curriculum. Another important aspect of realizing learning through play is that educators, as practitioners, have to be very competent and skillful so as to perceive the "here and now" interests and needs of children in the class and negotiate them with the "objects of learning" to support sustained shared thinking and thus the metacognitive dialogue necessary for learning (Pramling-Samuelsson & Asplund-Carlsson, 2008).

Also, in consideration are the views of parents and administrators who are not convinced that learning through play is the best means to foster children's holistic development and academic skills. This is especially the case for Chinese parents in Hong Kong, perhaps under the strong influence of a Confucian tradition, who are more likely than their Western counterparts to

focus on children's academic skills (Coleman, 1987). It is common for parents in Hong Kong to expect their children to learn social skills as well as academic skills in pre-school. As observed by Dr. Opper of Hong Kong University (1994), parents expect young children to learn the skills of formal literacy and numeracy and expect teachers to be responsible for teaching them such skills. In turn, parents play a crucial role in advocating the focus on academic skills and building more time for academic learning in pre-schools' curriculum, which have been well documented in the U.S and worldwide. In one survey of 254 New York and Los Angeles kindergartens, researchers found that teachers devoted a preponderance of time to teaching literacy and numeracy (Miller & Almon, 2009). In Hong Kong, researchers have also revealed that kindergartens have increased students' time for academic instructions and reduced time for true child-centered activities like free play (Cheng, 1999). In one survey, kindergarten teachers reported that there are only 5-10 minutes of free-choice activity time during a half-day program (Cheng, 1999).

The lack of opportunities for play is a problem. Specifically, play promotes learning and at the same time, it fosters social competence and confidence as well as self-regulation, and children's ability to manage their own behavior and emotions (Hirsh-Pasek & Golinkoff, 2008). Without enough play, children's success in school and academic can be severely undermined (Miller & Almon, 2009). In addition, the developmental appropriateness of a curriculum for young learners focused on academic learning may not be beneficial or even detrimental. Some researchers have indicated that perhaps early academic training is not superior to traditional hands-on model of early education (Elkind, 2007). In some cases, early academic learning at the wrong time for developing mental abilities may impact learning more complex skills for years to come (Hirsh-Pasek & Golinkoff, 2003).

## Importance of Narrowing the Gap

The problem of lack of balance between play and academic instruction is important to solve for a variety of reasons. First, not implementing more child-centered practices, like play-based learning, is affecting the quality of education for young children at the Kindergarten and in Hong Kong in general. Second, children who should be developing at their own pace, are adopting inappropriate learning strategies which potentially can affect their life long learning attitude and discourage them from becoming curious learners. Third, an inappropriate focus on academic learning at an early age is building severe pressure on students in Hong Kong and hence other more serve self-destructive consequences may arise in the later stages of their lives. It is only knowing what improvements can be made in promoting more play-based curriculum in the classroom, that each child's learning experience at the Kindergarten can be enriched in developmental appropriate ways and achieve the mission for children to develop the necessary personal and social skills needed to become caring, curious, multi-lingual learners.

## Organizational Performance Goal

By December 2018, the Kindergarten is to comply 100% with the curriculum criteria and standards recommended by the Curriculum Development Council of the EDB. Specifically, teachers will increase the amount of time spent for child-centered pedagogy, such as learning through play, so that it is 85% of the total class time. It is envisaged that the Kindergarten can reach the goal to comply with the EDB recommendation in two years, by December 2018.

## Stakeholders and Stakeholders' Performance Goals

The focus of this study will examine the relationship between the emphasis on teaching academic skills and its effect on diminishing child-centered pedagogy such as incorporating more play-based learning in the classrooms, therefore, the key stakeholders are teachers,

administrators and parents. Although the student group is also a key stakeholder, for the purposes of this study and due to the young age of the students, the study will not take their opinion into consideration or include them in this study. The stakeholders' goals in the context of play-based learning are presented in Table 1.

Table 1

*Organizational Mission, Organizational Goal and Stakeholders' Goals*

| **Organizational Mission** | | |
|---|---|---|
| The Kindergarten provides all children a challenging learning environment where they can develop the necessary social and personal skills needed to become caring, curious, multi-lingual learners. | | |
| **Organizational Performance Goal** | | |
| By December 2018, the Kindergarten will comply with 100% with the pre-school curriculum criteria and standards recommended by the curriculum development council of the Hong Kong Education Bureau. | | |
| **Teachers** | **Administrators** | **Parents** |
| By December 2018, teachers will provide more than 85% of the total class time on child-centered pedagogy and spent less time on academic instructions. | By December 2018, administrators will build in more than 85% of total class time on child-centered instructional time in the curriculum and spend less time on academic instructions. | By December 2018, all parents will adopt and support the notion through the parents and teachers association that child-centered pedagogy is necessary for the development of social and personal skills. |

## Stakeholders for the Study and Stakeholder Performance Gap

While the joint efforts of all stakeholders will contribute to the achievement of the overall compliance with the pre-school curriculum criteria and standards recommended by the EDB, it is important to understand the challenges faced by the teachers in understanding and in

implementing “learning through play” in the curriculum. Currently, teachers report that they are spending less than 45% of their class time a week on free-choice activities like play. The free-choice activity time also does not take into the consideration what possibly teachers believe or have conceptualized as play-based learning when in fact their practices do not match the child-centered constructivist conception of play. As recommended by the Curriculum Development Council of HKSAR Education Bureau, play should dominate a child’s early childhood experience including the class time, encompassing about 85% of the students’ class time for the schedule of a half-day kindergarten class, which means there is at least a 40% gap.

## Purpose of the Study and Questions

The purpose of this study is to conduct a gap analysis to examine the possible issues that are intervening and preventing the Kindergarten to meet the recommendation of the Educational Bureau. The analysis focused on possible causes due to gaps in the areas of knowledge and skill, motivation, and organizational issues. The analysis began by generating a list of possible or assumed improvement area, also known as causes, and then by examining these systematically to focus on actual or validated causes. While a complete gap analysis would focus on all stakeholders, for practical purposes the stakeholders focused on in this analysis were the teaching staff at the Kindergarten.

As such the questions that guided this study were the following:

1. What are the knowledge and skills, motivation, and organizational causes that teachers face in order to improve and reach the goal of providing child-centered, play-based pedagogy for 85% of total class time as recommended by the Hong Kong Education Bureau.
2. What are the knowledge and skills, motivation, and organizational solutions necessary to make these improvements?

## Methodological Framework

Clark and Estes' (2008) gap analysis, a systematic and analytical method that helps to clarify organizational goals and identify the gap between the actual performance level and the preferred performance level within an organization, was utilized as a framework for this study. Assumed causes for the performance gap were generated based on personal knowledge and related literature. These causes were validated by using surveys, interviews and observations. Research-based solutions were recommended and an evaluation plan was proposed to review the implementation of the solution plan in a comprehensive manner.

## Definitions

*Child-centered pedagogy*: early childhood education practices which centers on recognizing high-level complex play as the age-appropriate teaching and learning pedagogy for young children.

*International Baccalaureate ("IB"):* is an international educational foundation offering four respectful programs of international education. Schools authorized by the IB organization are permitted to offer any of their programs.

*IB Primary Years Programmed ("IB PYP")*: is the primary years program aims to develop young children's ability to search for understanding, the acquisition of essential knowledge and skills, and to develop positive attitudes and actions. There are six transdisciplinary themes which addresses issues at a personal, local, and global level. Each year the teacher will prepare a "Programme of Inquiry" (POI) which will pick four (PN, K1, K2) or six (K3) transdisciplinary themes for the children to learn. Under that theme a more specific topic will be chosen and the direction of the inquiry will also be established by using the guiding lines of inquiry.

*Free-choice activity time:* the preferred term to describe the time for play as the word "play" is too often misinterpreted as unconstructive time or an undisciplined lazy approach to learning.

*Guide to the Pre-primary Curriculum*: the curriculum guide recommended by the Hong Kong Education Bureau for use in pre-primary institutions. The guide is prepared by the Curriculum Development Council of Hong Kong, which is an advisory body giving recommendations to the Hong Kong Government on all matters relating to the curriculum development for the school system form kindergartens to sixth form. Pre-primary institutions are encouraged to adopt the recommendations set out in the curriculum guide.

## Organization of the Study

Five chapters are used to organize this study. This Chapter One provides the reader with the key concepts and terminology commonly found in a discussion about child-centered pedagogy and play-based learning. The organization's mission, goals and stakeholders as well as the initial concepts of gap analysis are introduced. Chapter Two provides a review of current literature surrounding the scope of the study. The benefits of play-based learning pedagogy, the current status and implementation issues faced by teachers, and child developmental appropriate practices will be addressed. Chapter Three details the assumed causes for this study as well as methodology when it comes to choice of participants, data collection and analysis. In Chapter Four, the data and results are assessed and analyzed. Chapter Five provides solutions, based on data and literature, for closing the perceived gaps as well as recommendations for an implementation and evaluation plan for the solutions.

# CHAPTER TWO: REVIEW OF THE LITERATURE

Play is not just a four-letter word. In an effort to give children a head start on academic skills such as reading and mathematics, play has often been discouraged. This chapter presents evidence that play and playful learning enhance academic, social and emotional development. This chapter highlights some factors in the context of knowledge, motivation and organization, which prevent a pre-school from implementing more play in the curriculum.

## Current State of Pre-School Education in Hong Kong

### Kindergartens and Nurseries in Hong Kong

Kindergarten education is offered to three-year to six-year old children in private kindergartens, which are owned or operated by non-profit organizations or for-profit private companies. Nurseries are offered to two-year to three-year old children. All kindergartens and nurseries in Hong Kong are privately owned and are not included in the formal nine-year compulsory educational system (Committee on Free Kindergarten Education, 2015). Therefore, the Hong Kong Government has no direct authority to dictate formal curriculum, instead it acts in an advisory role and provides a suggested curriculum (Cheng, 2006). In the 2014/2015 school year, there were about 978 kindergartens and nurseries made up of 90% local stream and 10% international stream (HKSAR Education Bureau, 2015). Kindergartens and nurseries operate on a half-day basis, which normally lasts for three to three and one-half hours, while some kindergartens offer whole-day classes of seven to seven and one-half hours with lunch services (Committee on Free Kindergarten Education, 2015).

The Hong Kong Government and the EDB have consistently taken an active role in promoting kindergarten teachers' competencies. Since 2003, all kindergarten teachers are required to be "qualified kindergarten teachers" registered with a minimum of five passing

grades in the Hong Kong Certificate of Education Examination (college entrance exam) and are required to complete a certificate in early childhood qualification or above (Committee on Free Kindergarten Education, 2015).

**Education Bureau of Hong Kong (EDB) and Suggested Curriculum**

The government through the Education Bureau of Hong Kong (EDB) clearly advocates play as an indispensable and important tool for facilitating children's learning (Curriculum Development Council, 2006). In fact, since the 1980's, "Learning through play" has been recommended by the EDB as the preferred pedagogy for early childhood education (Hong Kong Government, 1986). To combat the tradition of a didactic teaching approach, the goal of the EDB was to improve the quality of education in the early years by introducing "play" as being central to the early childhood curriculum. In the 2006 "Guide to the Pre-primary Curriculum", the emphasis was on making a curriculum, which was more child-centered and play-based (Curriculum Development Council, 2006). In the curriculum guide, the government gave specific recommendations that teachers should organize activities in the six learning areas (physical fitness and health, language, early mathematics, science and technology, self and society and arts) around play, playful environment and inquiry-based experiments (Curriculum Development Council, 2006). In regard to the schedule of activities, the government recommended that 85% of the total class time for a half-day kindergarten program and 75% of the total class time for a whole-day kindergarten program should be spent on free-choice activities, including play, construction, creation, exploration, manipulation and social interaction (Curriculum Development Council, 2006).

## The Definition of Play

Play is often said to be the elixir of life. As a phenomenon, play has been studied and examined from different theoretical and disciplinary perspectives. Yet, it is perhaps still very difficult to clearly define "play" as it appears in various forms, at different times and places, and with different meanings; some examples are using play areas as in the High Scope program (Steinhart & Weimar, 1997) or exploring artistically or creatively as in the Reggio Emilia approach (Edwards, Gandini, & Forman, 1993). These programs claim that children are playing and learning simultaneously. Researchers have founded that there are common factors which have stood the test of time in formulating a definition of play: (1) children's feelings or motivation – the disposition/characteristics of play; (2) the types of behavior children partake when they play – the state of playfulness; (3) the environment in which children play; and (4) what children do when they play – the types of play in which children engage (Rubin et al., 1983).

### Disposition or Characteristic of Play

Prominent scholars have come up with six aspects that make up the disposition or characteristic of play: (1) play is intrinsically motivated; (2) play is relatively free of externally imposed rules; (3) play is carried out as if the activity were real; (4) play is focused on the process rather than any product; (5) play is dominated by the players; (6) play requires the active involvement of the players (Rubin et al., 1983). Scholars argue children are playful by nature, hence they are intrinsically motivated to play as no one tells them what to do or how to do it (Miller & Almon, 2009). Once an adult structures or intervenes inappropriately, children lose interest and the activity ceases to be play anymore. Because play is intrinsically motivated nature, it is a child's way of controlling the environment (Rogers & Sawyers, 1998). When an

adult proposes a demand which conflicts with a child's need for personal control, the child usually reacts with frustration and discontinues the activity (Rogers & Sawyers, 1998). Whereas if a child participates intrinsically, able to control their experience to match skills and challenges according to their interests, they are more likely to feel a sense of accomplishment and hence are more likely to want to repeat the activity (Rogers & Sawyers, 1998).

In play, it is important that participants are concerned with accomplishing the activities rather than achieving any goal. It is not play if a child enters into play and says, "Hmm, I think I will play now so that I can get some pre-reading skills." Scholars specify that play is engaged for its own sake and often play is "non-utilitarian" (Hirsh-Pasek & Golinkoff, 2003). Naturally, play requires the active involvement of the players (children). In essence, children cannot be passive recipients of play, they have to want to do it. Researchers have also highlighted that play usually contains elements of make-believe, yet the participants feel they are actively engaged in something real (Rogers & Sawyers, 1998). When a child pretends to pour liquid and then pretends to drink what they poured is commonly seen as play.

Scholars have highlighted that the need for an adult, especially an early childhood educator, to know these dispositions or characteristics of play because most of the time, adults are unaware of the fact that they are actually preventing autonomous, self-directed play (Wong et al., 2011).

**State of Playfulness**

Playfulness is a state of mind, whereas the word "play" is used in this study to describe an activity. How can a teacher tell when a child is in a state of playfulness? Prominent researcher Csikszentmihalyi (1993) has described playfulness as the "optimal experience" and used the term "flow" to describe the state when a child's concentration is so intense, they will not

pay attention to anything irrelevant. He described this state of flow as when self-consciousness disappears and the sense of time becomes distorted and highlighted six qualities to indicate when a child is in a state of playfulness: (1) clear goals (which are imposed by the player himself); (2) focused attention; (3) loss of self-consciousness; (4) an altered sense of time; (5) intrinsic motivation; and (6) belief that an experience is worthwhile for its own sake (Csikszentmihalyi, 1993). These features can help determine whether a child is actually playing.

Sometimes play has the general connotation of not being serious when in fact Professor Csikszentmihalyi (1993) and other scholars indicated that to foster the condition of play, serious engagement of the players and the absence of reality because of playfulness are required. Recent researchers in Hong Kong and aboard studied how children view their state of playfulness. These studies indicated that children usually view play as an activity with no preference and no specific goals (Howards, 2010). Children also do not experience a formal classroom environment as a play environment because it indicates the tendency for learning with teacher-directed activities as found by a study of children in Hong Kong (Wong, Wang & Cheng, 2011). The study by Wong et al. (2011) concluded that children differentiate play and non-play by looking at the nature or function of the events, objects and places involved. In particular, kindergarten children found that a classroom with any presence of a teacher as non-play even when the teacher was conducting a game activity (Wong et al., 2011). They expressed that activities which require deep concentration and seriousness, like playing piano, reading and writing as non-play. Nevertheless, researchers concluded that within the same classroom environment, when the activity was changed to a more self-directed and more open with less teacher instruction and boundaries, from cues provided by the children as playful, children then experienced the tasks as playful so that learning was enhanced (Howard, 2010). They discovered that playfulness as a

state of mind was the constant factor among different situations and generated different results from the children (Howard, 2010).

**Different Types of Play**

Because play shifts and is difficult to categorize them, knowing and watching for the broad types of play helps sensitize teachers to the shifting landscape that children create. Various types of play occur beginning with the child's first few months to twelve years and beyond. There are physical play or locomotors play, object-play, symbolic play and pretend play (Smith & Pellegrino, 2013).

Physical play or locomotor play is perhaps the earliest type of play to evolve and can be observed in most mammals (Whitebread, 2012). Physical play, which includes exercise play (running, climbing, jumping, dancing, skipping, etc.), involves large body activity and is generally thought to support physical training of muscles, endurance and skill (Smith & Pellegrini, 2013). Physical play also includes rough-and-tumble play and fine-motor practice such as sewing, coloring, cutting, and manipulating action and construction toys) (Smith & Pellegrini, 2013). Such play helps develop coordination, balance, and a sense of one's body in the space around it. Extensive research has been conducted on rough and tumble play and how the interactions gained during this type of play can promote strong emotional bonds and attachment which lead to social competence (Whitebread, 2012). Fine-motor play trains fine-motor development and finger coordination skills, while at the same time, due to its mentally absorbing nature, fine-motor play often helps children develop concentration and perseverance (Whitebread, 2012).

Play with objects or object-play refers to the playful use of objects such as building blocks, jigsaw puzzles, cars and dolls. Different age groups exhibit the manner in which play

with an object will manifest. At an infant stage, object-play is more sensory-motor play where the child is exploring how objects and materials feel and behave (Whitebread, 2012). From eighteen months to twenty months, toddlers begin to arrange objects, which gradually develop into sorting and classifying activities. By the age of four, children are able to build, create and construct. Play with objects allows children to try new combinations of actions, free of external constraint, and help develop problem solving skills (Smith & Pellegrini, 2013). In a study by Pellegrini and Gustafson (2005) of three-year to five-year old children revealed that the amount of playful exploration, construction and tool use in which children were engaged predicted their subsequent performance on physical problem-solving. Recently, constructional play has been used as a kind of therapy for children with problems of self-regulation (Whitebread, 2012).

Symbolic play refers to the category of play that relates to the variety of symbolic systems including spoken language, reading and writing, number, various visual media (painting and drawing) and music (Whitebread, 2012). Spoken language play is when children develop mastery by playing with actual or made up words, rhymes, verses and songs. Art play utilizes different materials to create, mold and shape. Latest research revealed that children's visual literacy, their ability to understand pictures, photographs, diagrams, plans and maps, was enhanced by their experiences of playing with a variety of visual media (Whitehead, 2012). Music is another form of symbolic play where at every age level, children sing, dance and create all sort of sounds. Music and dance provide opportunities to express feelings, learn about rhythm and the difference in sounds, expand imagination and self-esteem. Recent research in the area of music play concluded that it supports a range of children's developing abilities, including those related to social interaction, communication, emotion understanding, memory, self-regulation and creativity (Pound, 2010).

Pretend play is important for children development and involves pretending an object or an action is something other than what it actually is. A significant amount of research has been invested in pretend play. High-quality pretend play has repeatedly been shown to be very closely associated with the development of cognitive, social and academic abilities (Smith & Pellegrini, 2013). For example, during socio-dramatic play, children are obliged to follow the social rules governing the character they are portraying. Children negotiate meanings and the role "You be daddy, right" and argue about appropriate behavior "No, you don't feed the baby like that." Scholars have also advocated that the pretend play advances many learning functions as it develops pre-literacy skills and enhances emotional security (Miller & Almon, 2009)

## The Benefits of Play

Play overlaps into all areas of children's cognitive, social and emotional development. As indicated above, scholars have found through research that different types of play can facilitate all forms of healthy development in a child and provide the best context in which children can grow and learn (Rogers & Sawyers, 1988).

### Strong Foundation in Cognitive Concepts

Play contributes to cognitive development. Research showed that play contributed to cognitive maturity and problem solving in a number of ways (Rogers & Sawyer, 1988).

First, play encourages problem solving. As children play, they retain their playful attitude which is the critical quality that contributes to flexibility in problem solving. Their research showed play and exploration are tenants to children's problem solving (Roger & Sawyer, 1988). One famous experiment had children completing different tasks by using a stick and joining apparatus to reach inside the box for an object. Two sets of children were observed, one set was given the opportunity to play with the sticks and apparatus before the experiment, meanwhile the

other set of children was given a demonstration by an adult to connect the sticks and apparatus. Results from the studies consistently showed that children who were able to play with the sticks and apparatus before the experiment performed better than the group that received the demonstration (Rogers & Sawyers, 1988).

Research by Pelper and Ross (1981) demonstrated that play promotes creativity and innovation in problem solving. Divergent problems require multiple solutions, the same as when a child engages in object-play with blocks and build different structures from the blocks. One researcher had children work with toys of a divergent nature (problems that require multiple solutions) and with toys of a convergent nature (problems that require one solution). The study revealed that the two groups reacted differently when they were asked to build a village with 45 pieces of play materials which is a challenging task for the age group (Pelper & Ross, 1981). The divergent group build more structures and attempted more trial and error when they reached an impasse. Whereas the convergent group was mired and attempted the same things over and over again (Pepper & Ross, 1981). Other studies revealed conclusive evidence that play enhances performance on divergent thinking tasks (Rogers & Sawyers, 1988).

**Strong Foundation in Social Concepts**

Many scholars have agreed that play enhances the development of social skills for children. Cooperation, helping, sharing and successful social problem solving can all be experienced through play. Pretend play especially has been highlighted by researchers to have the greatest impact on a child's social development. During pretend play, children engage in various social interaction, group cooperation, social participation and impulse control (Hirsh-Pasek & Golinkoff, 2003). Research as early as Piaget contended that through pretend play, children who engage in resolution of conflicts make accommodations, step beyond their own

egocentricity and thereby manage the environment around them (Rogers & Sawyers, 1988). In addition, studies developed the theory that a child's frequency of social pretend play predicted their social competence, popularity, and role-taking ability (Rogers & Sawyers, 1988). Children create emotional comfort for themselves through play, such as when they have a favorite security blanket or a teddy bear.

Another aspect of social development is the importance of pretend play and the development of self-regulation. Many recent studies have examined the benefits of self-regulation for children which is an essential skill for getting along with peers (Whitehead, 2010). For example, a two-and-one-half year old Louis pretends to take on the role of a baby and cries like a baby but then stops when James, acting as the role of "father", comforts him. Louis knows to stop crying when comforted which show his ability to regulate his own behavior (Bodrova & Leong, 2001). In all the scenarios, play provided the context for role and rule conflicts with peers, thus setting the stage for children to practice and consolidate their social skills (Rubin et al., 1985).

**Strong Foundation in Emotional Concepts**

Play is often known to help children work through difficult emotional events. Hence, play builds a strong foundation for emotional development. Researchers demonstrated that through play children have the ability to maneuver the flux and flow of events as they wish in order to try things out. Events that they experienced with adults are often too sophisticated to express or handle in real-life (Hirsh-Pasek & Golinkoff, 2003). At the same time, through an activity like pretend play, children can practice expressing their negative feelings or anxieties or positive feelings associated with real-life events without consequences (Rogers & Sawyers, 1988). Studies indicated that children were more empathetic and considerate of others' feelings

providing more evidence that children can learn from play (Undiyaundeye, 2013). Although cognitive, social and emotional development for children will occur without play, the research highlighted above indicated that play can facilitate healthy development.

## Approaches to Learning Through Play

Understanding that children are active constructors of knowledge and that development and learning are the results of interactive manipulative experiences, it is easy to recognize how guided play is supportive of all learning. Play provides a context for children to practice newly acquired skills and to help them perform on the edge of their developing capacities in order to take on new social roles, attempt novel or challenging tasks, and solve complex problems that they would not otherwise do (Mallory & New, 1994b).

### Constructivist Theory of Learning

Research suggested that children learn best when they take an active role, which is both a physical and intellectual activity (Dewey, 1971). The constructivist theory emphasized that a learner is no longer regarded as a passive receiver of knowledge (more teacher directed orientation), but as an active constructor of meaning. The famous child development psychologist Jean Piaget coined the constructivist theory meaning that the "knowledge is derived from a child's experimentation and playfulness with materials and reflection on his/her actions" (as cited in Hedges, 2000). Built upon the constructivist theory, in education, the theory of constructivism became well adopted by the teaching community.

Constructivism is important to understand as the theory that integrates play with learning and describes how adults or teachers in the classroom can interfere to bring play to a higher-level play which promotes learning. According to Vygotsky, who made significant progress in the theory, social interaction, such as cooperative dialogues between children and a more

knowledgeable member, like an adult, is necessary for children to acquire new ways of thinking (Bodrova & Leong, 2001). He introduced the theory of the zone of proximal development, which suggests that a child's actual developmental level can be stretched to attain a higher level of competency with the assistance and guidance of an adult or capable peer. The theory explained the phenomenon that children can perform expert tasks beyond their competence by experiencing play interaction with adults. For example, in the Zinaconte Indians of South Mexico, the girls become expert weavers of complex garments before the age of five as they receive informal guidance from adult experts through games and dramatic play (Childs & Greenfield, 1982). The theory suggested that children require activities that support past learning and that an adult can encourage new learning on a slightly more-difficult level. In effect under the constructivism theory, an educator plays an active role in guiding the construction of knowledge within the classroom, but they also create opportunities for children to direct their own learning through exploration and experimentation (Kotsiopoulos, Makosz, Zambrycka & McCarthy, 2015).

**Integrating Play and Learning**

According to Hedges (2000), play-based learning, the integration of play and learning which was initially based on Vygotsky's research that children can attain a higher level of achievement with adult guidance, is facilitated by utilizing scaffolding, guided participation and co-construction. The purpose of scaffolding is for teachers to determine the optimal time that the children should move from one level of competence to another by careful observation and interaction. Some common strategies used to facilitate and extend children's learning, as recommended by the National Association for the Education of the Youth, are questioning, prompting, praising, confirming, giving feedback, expanding and repeating back (National Association for the Education of the Youth, 2003).

Guided participation allows educators to direct children's learning by utilizing observation and participation with their peers in order to help them develop skills to identify culturally defined problems and then construct new solutions. Co-construction refers to the development and learning of children that occurs through complex and dynamic exchanges between children and their actions to make sense of the world, and the social and cultural pretense in everyday activities. Co-construction emphasizes the child's input in learning (Hedges, 2000). Teachers manipulate the learning environment so that each child is at the center of their learning as part of the co-constructionist approach. Scholars have also suggested that teachers should use different approaches to engage children in activities to help them to develop a positive disposition towards learning (Kotsiopoulos et al., 2015).

**Three Levels of Play**

In line with the constructivist theory, leading play experts and scholars have classified three qualities of play: chaotic or out of control play; simplistic and repetitive play; and purposeful complex play that engages the children's full attention (Gronlund, 2010). The third level of purposeful complex play is the level of play recommended by play specialists as the more mature play that brings children to high-levels of achievement and development (Miller & Almon, 2009).

Chaotic or out of control play is characterized by children in loud and high-pitched voices, high level of risk taking behaviors, and often with a great deal of disagreement. This kind of play is discouraged and is often discontinued for the safety of the children. The second level of play is simplistic and repetitive play. This level of play involves repetition and children are not very involved. For example, a child may imitate what an adult will do, but does not go beyond that imitation. In a dramatic play situation, two girls were playing in the kitchen corner

and brought Teacher Della cups and plates with plastic pieces of pizza. They told Teacher Della " This is orange juice and pizza". When Teacher Della asked what else the children could offer, the girls responded "pizza", doing the same thing again and again. As an example of simplistic play, the girls lacked variety in the pretend food and repeated the same actions. To encourage a higher level of play, Teacher Della further interacted with the girls suggesting that they go to the grocery store to get different items to cook. In addition, she raised the engagement by proposing that they list their grocery items on a piece of paper while providing them a shopping cart and grocery bag. By engaging the girls in various high-level tasks, Teacher Della was able to intervene and brought the level of play to formal play. Therefore, high-level complex play often is characterized by the state of playfulness where the children are fully immersed in the play scenario and usually is accompanied by communication, negotiation, creativity and engagement (Groulund, 2010).

**Mathematical Concepts Through Play**

Research supports that play and guided play indeed can help academic development like improvements in mathematics. Researchers discussed an experiment by See and Ginsburg that found 88% of four and five-year old children engage in spontaneous mathematical like tasks every fifteen minutes of free play (as cited in Kotsiopoulos et al., 2015). Early mathematics concepts are often introduced in play, such as when geometry is explained in block building or when building toy railroad tracks, they learn that eight tracks are longer than three tracks. Hirsch-Pasek & Golinkoff (2003) explained that unlike other forms of knowledge, mathematical knowledge and concepts cannot be learned from just hearing about it, but should be learned by experimentation and hands-on experience which are the essential qualities of play. Blocks are play specialist toys of choice for building mathematical concepts. Children learn different sizes

and at the same time, with different sizes, shapes and colors of blocks, while sorting into logical classifications or separating them by shapes and colors (Kotsiopoulos et al., 2015). When children play with clay, separating them into small pieces, they are learning about the fundamentals of quantity and number. One study by Ginsburg (2006) indicated that playful mathematical instructions can be accomplished by providing memorable contexts in which the environment is filled with opportunities for children to encounter math. Integrating mathematics in real world activities like when children line up, an educator can discuss with the children about the places in the line so they have a concept of ordinary number (Ginsburg, 2006).

**Literacy Through Play**

Research suggests that children use their most advanced language skills during play, and that these language skills are related to emergent literacy (Christie & Enzi, 1992). From early on, Vygotskian theory argues that literacy acquisition is a social constructive process that begins in early childhood through every day experiences with adults, including bedtime storybook reading and pretend play (Bodrova & Leong, 1996). Recent research reveals that some play processes, such as the language, symbolic representation, and narratives used in play, are related to early literacy skills (Christie & Roskos, 2013). Pellegrini and Gustafson (2005) found a positive, significant relationship between three-year-old children's symbolic play and their use of meta-linguistic verbs (verbs that describe an activity such as talk, write, speak and read) that suggests transfer of abstract socially defined language. Other researchers showed how play areas and play environment can help build literacy such as when a play setting is rich with word descriptions of objects and signs, and their data indicated that this type of manipulation of the physical environment increases the range and amount of literacy behaviors during play (Christie & Roskos, 2013). Evidence also indicated that a word rich play setting can provide young

children short-term gains in knowledge of writing, ability to recognize play-related print and use of comprehension strategies (Christie & Roskos, 2013).

### Socioemotional Skills Through Play

From decades of research, it is clear that guided play is important for fostering social competence and confidence as well as for self-regulation, and children's ability to manage their own behavior and emotions (Barnett & Storm, 1981). In particular, recent research studies have revealed the significant impact that guided play has on metacognitive and self-regulatory processes in young children (Whitebread, 2010). Through the principles of emotional warmth and security, feelings of control and cognitive challenge through problem-solving, Whitebread (2010) suggested that play can be organized to support the development of self-regulatory skills. He listed as an example where a three-year old boy was trying to put on a fireman's jacket to be just like his friend who was already wearing a police uniform. As the child struggled, he felt frustrated and upset, and was looking over to his teacher searching for some assistance. However, at no time did the teacher touch the jacket. Instead she did provide attention by talking to him about the problem, giving emotional support (smiling throughout, expressing delight at each successful move) and provided clear visual guidance by demonstrating "putting your arm in like this.". The boy eventually learned to control his emotion, while preserving and gaining more self-efficacy (Whitebread, 2010).

## Play-Based Curriculum

### Play Recognized as Effective Pedagogy

Play serves as a crucial part in the "child-centered" concept as a key element of the learning and teaching strategies in early childhood education. In the constructivist view, the child is always seen as the agent of his own education and the task of educators is to encourage

children's self-directed and autonomous engagement with the learning situation. Ultimately, the play and learning pedagogy where educators identify children's learning orientations and using such knowledge to manipulate the learning environment and to promote children's motivation to engage with the environment is the best form of learning for children of the pre-school age (Miller & Almon, 2009).

**Teaching Academics Too Early May Impact Learning**

Research conducted for over a long period of time has challenged the assumption that starting earlier on the teaching of phonics and other academic skills leads to better results (Darling-Hammond & Snyder, 1992). However, some advocates of a more skills oriented teaching style have claimed positive effects on academic success of young children especially those in the low socioeconomic status children (Engelmann, 1982). These views were debated by studies that revealed early academic success is short-term and long-term effects on a child's learning development can be severe (Cheng, Reunamo, Cooper, Liu & Vong, 2015). In fact, brain researchers have revealed that early forced learning may result in the use of lower brain systems since the higher brain hemisphere which should do the type of work has not yet developed. This habit of using inferior brain areas for higher-level tasks and of receiving instruction rather than creating patterns of meaning can cause problems in later brain development (Healy, 1989). In addition, research suggested that strong emphasis on a teacher-directed academically oriented approach in early childhood education can negatively impact a child's intrinsic interest in the process of acquiring knowledge (Cheng et al., 2015). The research study in Hong Kong by Cheng et al. (2015) suggested that a more academic focused pre-school was not able to foster "agency skills" compared to a play-oriented pre-school and revealed that students from the play-based pre-school exhibited more high-end agency skills.

Agency skills involve the child's motivation to explore, make choices and act on the environment, along with an ability to exercise control over their own circumstances and destiny (Cheng et al., 2015).

Longitudinal studies have also discussed the importance of the development of non-cognitive abilities at an early age. Cognitive skills are often referred to achievement-oriented tasks, such as problem solving and academic abilities that can be measured by achievement tests (Jones, Greenberg, & Crowley, 2015). While non-cognitive process is referred to as behavior characteristics, emotion regulation, attention, self-regulation and social skills, it is these non-cognitive skills that have been found to be so important that development of these skills at a young age has proven to add value to healthy personal development and eventually adult well-being. In the landmark Perry Preschool program, researchers found that intentional intervention to improve non-cognitive skills related to behavior and academic motivation were found to be central to long-term effects on crime and employment (Heckman, Pinto, & Savelyev, 2013). Another recent study has revealed how children with good early social competence at pre-school has statistically significant association with enhanced young adult performances across multiple domains of education, employment, criminal activity, substance use and mental health (Jones et al., 2015). Overall, the importance and value of training the non-cognitive skills with more child-centered pedagogy has scientific evidence to prove perhaps it is more important than training cognitive skills.

## Assumed Causes from Literature Review

### Pre-School Teacher's Knowledge, Motivation and Organizational Needs

Based on the review of the literature, there are a number of reasons why play or a play-based curriculum was not implemented as often as it should be. In addition, classroom contexts

such as time allocation for play, play arrangement, materials, as well as social and personal factors can also be deterring implementation of play. These factors will be considered in light of the knowledge, motivation and organization framework.

**Factual knowledge**. As revealed from the literature discussed above, as play appears in various forms at different times and different places, teachers may not have thorough knowledge of the definition of play in order to be able to identify what activities lead to play and whether the children are in fact engaged in play (Fung & Cheng, 2012).

**Procedural knowledge**. Teachers could also lack the procedural knowledge to implement learning through play in the classrooms. The quality assurance inspection reports conducted by the Education Bureau from 2005-2007 identified that many Hong Kong preschools continue to use a teacher-directed pedagogy focusing on academic transmission (Education Bureau, 2007). A comparative study of Chinese preschool teachers and their American counterparts suggests that the Chinese teachers tend to believe in teacher-directed or early academic skills oriented instruction more than American teachers, who prefer less structured child-initiated learning (Wang, Elicker, McMullen & Mao, 2008).

The problem facing educators is not that they do not have a strong belief in the benefits of learning through play, but in reality they struggle with using play to promote learning in actual classrooms (Wood & Bennett, 1997). Higher-level play is crucial in enhancing early childhood learning. It is often difficult to sustain higher-level play as the process involves recognition of the levels of play and knowledge of strategies that enhance its depth and richness (Gronlund, 2010). A number of studies in Hong Kong have also confirmed that a gap exists between the preferred play-based pedagogical intention and the actual practice carried out by educators when they tend to use play only to attract the attention of children while the children's initiated flow of

playfulness is ignored (Cheng, 2000; Fung & Cheng, 2011; Lau & Cheng, 2010). Teachers in one study claimed that teaching aids, such as a storybook or a picture of a panda, were symbols of play (Cheng & Stimpson, 2004). Preschool teachers in Hong Kong were also found to be unaware of learning opportunities embedded in free play and did not take up opportunities to scaffold learning during play (Cheng & Stimpson, 2004).

**Motivation**. A number of factors revealed by this study's literature review can have an effect on teacher's motivation to implement a play-based curriculum. There is tremendous pressure on teachers to recognize that fostering academic skills is important. Education is valued as a means to raise the socioeconomic status of the family, and children are brainwashed with the importance of academic success from early on (Cheng, 2011). As parents in Hong Kong are heavily academically focused, there is tremendous pressure from parents to ensure children are taught academic subjects early, teachers do not feel appreciated if academic learning is not the focus (Opper, 1994). In turn, the teachers' idea of the proper role of a teacher and making a difference in the lives of children, creates conflict with the lack of appreciation, and thus a lost sense of attainment value. At the same time, teachers are suspected of lacking self-efficacy as researchers have identified that "learning through play" as a play-based curriculum is difficult to implement effectively and in an impactful manner. As highlighted by Wood and Bennett (1997), teachers sometimes lack the experience and thus the opportunity to be proficient to see the needs and interests of children in the class and negotiate them with the "objects of learning".

**Organization**. In terms of organizational causes of the performance gap, the literature revealed a strong consensus in emphasizing academic achievement in Hong Kong. Under the strong influence of a Confucian tradition, parents' preference is for greater focus on academic skills along with the expectation that the school needs to teach academic skills early (Opper,

1994). Hence, part of the analysis will be to validate how the pressure from parents, as a cultural practice, can influence the behavior of teachers.

Limited space and resources have also been found in Hong Kong to be barriers for implementation of play and play-based learning in the classroom (Lau & Cheng, 2010). A comparison between time allocated to play in pre-schools in Hong Kong and Germany revealed that the average indoor playtime for Chinese classrooms was 27 minutes while the average from German classrooms is 120 minutes (Wu & Rao, 2011).

## Summary and Conclusion

The literature discussed how play serves as a foundation to many developmental capabilities of young children, and if children are regarded as capable to lead their own education, the task of the educator is not to instruct but to encourage children's self-directed and autonomous engagement with the learning situation. The true power of play is not that it can teach children facts, but it can help them acquire important procedural knowledge which is beneficial in acquiring more factual knowledge. By understanding the way more complex play can create knowledge within a child-centered curriculum, the educator's role is then only to identify children's learning orientation, use the knowledge to manipulate the learning environment and stimulate children's motivation to engage with the environment.

# CHAPTER THREE: METHODOLOGY

## Purpose of the Project and Guiding Questions

The purpose of this study was to conduct a gap analysis to examine how teachers can improve to incorporate and implement more child-centered practices, like play-based learning, to enrich children's learning experience at the Kindergarten. The gap analysis focused on examining the potential causes for this problem due to gaps in the areas of knowledge and skills, motivation, and organization. A list of possible or assumed causes were first generated and then examined systematically via surveys, interviews and observations to focus on actual or validated causes. While a complete gap analysis would focus on all stakeholders, for practical purposes the teaching staff at the Kindergarten was the focus of this analysis.

As such the following questions guided this study:

1. What are the knowledge and skills, motivation, and organizational causes that teachers face in order to improve and reach the goal of providing child-centered, play-based pedagogy for 80% of the total class time as recommended by the Hong Kong Education Bureau?
2. What are the knowledge and skills, motivation, and organizational solutions necessary to make these improvements?

## Methodological Framework

The gap analysis framework was used in this study to understand and diagnose the performance issues. Under this framework devised by Clark and Estes (2008), the analysis began with dissecting complicated issues faced by organizations, which often involved the dynamics of different stakeholders. A gap analysis was used to find specific target areas to examine through the lenses of knowledge, motivation and organization and then solutions were developed that focused on making improvements.

A key initial stage of the Clark and Estes' (2008) model of gap analysis is setting goals. Clark and Estes stated that many organizations are unsuccessful because they fail to set clear, identifiable and measurable goals. They specified that without specific performance goals, team members lose focus on the specific tasks for which they are responsible and hence ultimately creates more disruptions than accomplishments and the organization does not reach its goals (Clark & Estes, 2008).

Another critical component of the performance gap analysis is identifying the three general causes of the performance gap: knowledge and skills, motivation to achieve a goal and the organizational barriers which are preventing people from reaching their goals (Clark & Estes, 2008). Regarding knowledge, it is critical to know the different types of knowledge: factual, conceptual, procedural and metacognitive. Not all training and education can solve the different knowledge problems (Anderson & Krathwohl, 2001). Factual knowledge is often described as knowledge of specific terminology, basic details and elements required to solve problems. Conceptual knowledge is the knowledge of classifications, categories and knowing how to organize these forms and the relationships between the different classifications and categories. Procedural knowledge is the knowledge needed to accomplish, implement and execute a task. Metacognitive knowledge is the knowledge needed to self-reflect, self-evaluate and self-assess on particular tasks.

Motivation measures how much effort each person is willing to spend on work tasks (Clark & Estes, 2008). It is a key ingredient for consideration when solving performance issues. In relation to motivation, Schunk, Pintrich and Meece (2014) identified a motivational pyramid which includes three common indicators: active choice, persistence and mental efforts. According to the authors, active choice refers to when individuals choose or fail to choose to

actively pursue a work goal; persistence problems can result when individuals are distracted by too many goals or by less important goals to complete a task; and effort or mental effort issues can result when a goal is defined and the person is persistent to complete the goal, but then does not invest the mental effort to achieve the goal (Schunk et al., 2014). Motivation perhaps is the most difficult barrier or performance gap to address because changing motivational factors involve changing individuals' or team members' mindset (Rueda, 2011).

The third critical cause is possible organizational barriers, which can be viewed as cultural models or cultural settings (Clark & Estes, 2008). Cultural models are often perceived as cultural practices such as an organization's structures, values, policies and rules. Cultural settings are the social context of the organization, and essentially, are the concrete manifestation of cultural models.

Under this framework, different stakeholders can be analyzed through the different causes of the performance gap, and solutions can be devised to concentrate on addressing different causes for each stakeholder. Eventually, key areas of improvements are identified and addressed, then the performance gap closes and the organization moves on to perform more efficiently and better.

## Assumed Causes of the Performance Gap

The gap analysis framework provided an evidence-based method to evaluate presumed causes of a performance gap (Clark & Estes, 2008). This study evaluated the knowledge, motivation and organizational causes that prevent teachers of the Kindergarten from incorporating and implementing more child-centered pedagogy in the curriculum.

**Preliminary Scanning Data**

Based on personal knowledge and informal conversations with staff of the Kindergarten, the following knowledge and skill, motivation and organizational causes were identified as hindering the incorporation and implementation of more child-friendly pedagogy in the curriculum.

**Knowledge and skills**. It is critical to examine the scope of the knowledge each teacher possesses before we examine whether there is an implementation issue. In each of the four types of knowledge identified by Anderson and Krathworth (2001), it is important to address them in light of the key stakeholder, the teachers. As for the factual knowledge, it is important to assess if the teachers have a good understanding of the definition of play and the characteristics of play. As play appears in different forms at different times and places, teachers need to have a thorough knowledge of the definition of play and characteristics of play in order to be able to identify what activities lead to play and whether the children are in fact engaged in play (Cheng, 1999). Teachers also ought to know the criteria of the curriculum as prescribed by the EDB with regards to learning through play and the amount of time suggested to be allocated to free-choice activities and play.

Conceptual knowledge is important to assess whether the teachers know how principles of play can help promote different academic skills, such as mathematical skills, literacy skills and social competence. In relation to procedural knowledge, the knowledge of how to do something, it is important to discern whether teachers have sufficient procedural knowledge to implement play in the curriculum. For example, whether teachers have the specific knowledge to implement play as a learning activity, to use play to achieve the learning objectives and to use play as a tool for the transmission of teaching content.

On a metacognitive level, teachers should evaluate their own strengths and challenges in implementing learning through play consistently so as to make improvements. It has been found that often teachers in Hong Kong do not develop self-learning habits to evaluate and solve problems they face in the classrooms.

**Motivation**. In addition to knowledge, it is critical to understand the motivation for each teacher. It is possible that they do not understand the effectiveness of learning through play in the transfer of knowledge for children. Also, possibly from the perspective of the teachers, fostering academic skills has become more important. As parents in Hong Kong are extremely academically focused, teachers do not feel appreciated if academic learning is not the focus. Persistence is also an important barrier for teachers. Once started, persistence is the measure to describe how an individual continues to pursue a goal in the face of distractions. As with any activity involving young learners, the transfer of knowledge and skills takes time and patience and since the results or desired outcomes are often not immediately apparent, teachers may lack persistence in conducting more learning through play. In relation to mental effort, overall it is difficult for teachers to grasp the key aspects of realizing learning through play. Teachers sometimes lack the experience and then miss the opportunity to be proficient in understanding and recognizing the needs and interests of children in the class and negotiate them with the "objects of learning" (Wood & Bennett, 1997). Hence, examining how teachers implement more play-based learning, in addition to how much they know, and whether the teachers have the appropriate mental effort to implement a play-based curriculum are important to understanding the performance gap. Further validation through surveys, interviews and observations are needed to ascertain whether these motivational gaps do exist in the teachers of this study.

**Organization**. As for cultural models and cultural settings, it is the consensus in the society that generally parents in Hong Kong, under the strong influence of a Confucian tradition, are more academic skills focused and the expectation from society and parents is that the school needs to teach academic skills early (Opper, 1994). Hence, part of the analysis was to determine how much pressure is actually exerted by parents as a cultural practice and whether that has influenced the behavior of the teachers. Also, as a cultural model in the case of the Kindergarten, one suspected cause of the performance gap is the culture of resistance to change. A high percentage of teachers have been employed for more than ten years and their openness to accept change is perhaps not easy to earn. The cultural setting of the school was also examined in this study to assess how it influenced teachers in their play-based learning understanding and curriculum setting. For instance, it is possible that the heavy administrative workload to complete a detailed portfolio assessment on each student to document their "act of learning" increased teachers' workload thereby delaying their efforts to implement more play-based curriculum. In other instances, the curriculum expectations and time restrictions have made it difficult to incorporate more play into the daily schedule.

**Learning and Motivation Theory**

The purpose of this study was to identify through the gap analysis whether all teachers, as one of the key stakeholders, have the adequate knowledge, motivation and organizational support to achieve their work goals. In order to understand why knowledge, motivation and organizational factors are important in analyzing gaps, this study relied on major theories of learning and motivation to explain how individuals and a team interact with knowledge and motivation systems to gain successful goal achievement. A number of factors, in terms of knowledge, motivation and organization, were identified which teachers may feel are preventing

them from reaching their goals. In the following paragraphs, these barriers are discussed within a learning and motivation theory framework.

**Knowledge and skills**. Since knowledge and skills enhancement are critical for improved job performance, this study has focused on Anderson and Krathwohl's (2001) discussion of the four major types of knowledge: factual, conceptual, procedural and metacognitive in analyzing the key stakeholder group, the teachers. The factual knowledge dimension refers to the knowledge of specific details and elements which includes the knowledge of specific terminology and definitions (Clark & Estes, 2008). In the context of this study, it is important to assess teachers' knowledge concerning the definition of play and the importance of play. It is also important to establish teacher's factual knowledge concerning the criteria of a "learn through play" curriculum as prescribed by the EDB.

The emphasis in conceptual knowledge is focused on whether the stakeholder realizes the interrelationships among basic elements, for example, whether they have knowledge of how to classify the basic elements and develop categories along with how to differentiate these elements (Anderson & Krathwohl, 2001). The Kindergarten teachers should be able to classify the different developmental objectives of young children and examine how play meets those objectives. Teachers should also know the principles of play and how they foster mathematical concepts and literacy skills.

In relation to procedural knowledge, the knowledge of how to do something, the stakeholder group in this case may face issue of practice in implementing a play-based curriculum. In this manner, effective observation with immediate feedback and rehearsing modeled behavior, then enacting it overly will help enhanced learning this knowledge (Rueda, 2011).

As for metacognitive knowledge, it is important for learners to evaluate and reflect on one's knowledge. As Pintrich (2003) explained, learners who know the strengths and weaknesses in their abilities to complete a certain task will increase learning. In relation to the Kindergarten, teachers could experience difficulties in implementing learning through play in the curriculum, unable to evaluate their own strengths and weaknesses and thus unable to learn. Because of these difficulties, they would lack the ability to contribute their opinion or inputs to the curriculum. In addition, the issue for stakeholders could be that teachers have not developed sufficient self-regulation to evaluate and solve problems that they experience in the classroom.

**Motivation**. In addition to inadequate knowledge, lack of motivation can be another barrier for completing any task. Schunk et al. (2014) identified three key indicators of motivation causes for a performance problem: active choice, persistence and mental efforts. Active choice refers to how an individual's intention to pursue a goal is replaced by actions. Value becomes a measure for active choice as individual value is a reflection of his/her desire to engage in the activity (Clark & Estes, 2008). Once started, persistence is the measure to describe how an individual continue to pursue a goal in the face of distractions. At the same time, it is also a measure of how an individual takes into consideration the attainment value of the activity in terms of the needs, personal interests and personal values that an activity fulfills (Eccles & Wigfield, 2002). Mental efforts describe when an individual which have chosen and are persisting, are also spending the effort to complete the tasks to achieve a goal.

Often, motivation is measured in self-efficacy, which is the combination of individual confidence and persistence in achieving a goal (Zimmerman, 2000). Promoting all three factors or a combination thereof, will likely increase the performance of the individual to accomplish a goal. At the Kindergarten, the relevant motivational issues are task value, self-efficacy and

attainment value. First, teachers may be reluctant to take steps to include more play in the curriculum as they do not see the utility value of play. In addition, since scholars have stated that realizing learning through play in a classroom is not easy, many teachers may not have the self-efficacy to implement learning through play (Pramling-Samuelssson & Asplund-Carlsson, 2008). Teachers also do not have high value in persisting in the activity when simply parents do not appreciate play or play-based learning when they are academically focused.

**Organization**. The third barrier highlighted by Clark and Estes (2008) is the assumed organizational causes, which exist to prevent a stakeholder from reaching its goals. Gallimore and Goldenberg (2001) have distinguished these organizational causes into specific subsets of cultural model and cultural setting. According to them, a cultural model describes the shared "mental schema" or "normative understandings" of how things work such as core values, goals, beliefs and processes learned over time. Whereas, cultural setting describes the activity settings where the behaviors are enacted. Both aspects of culture affect a learner and behavior theories believe influencing or changing certain a cultural model or setting will make learning more meaningful. For example, appropriate teaching assists the performance of the learner responsively in a learner's zone of proximal development (Bodorva & Leong, 2001). In this regard, teachers need to have the self-confidence that they are able to make changes and have meaningful impact. In terms of the cultural settings for the Kindergarten, many teachers expressed that the revised assessment reports and student portfolios have created a considerable amount of the administrative work preventing them from devoting the necessary time to develop and revise the curriculum and activity plan to include more play.

**Summary.** A summary of the sources of assumed issues and causes categorized as Knowledge, Motivation, and Organization is set out in the following Table 2.

Table 2

*Summary of Assumed Causes for Knowledge, Motivation and Organizational Issues*

| Sources/Causes | Knowledge* | Motivation* | Organizational* |
|---|---|---|---|
| Scanning interviews and personal knowledge | (FK) Teachers do not fully know the criteria of learning through play as prescribed by the Educational Department Bureau (EDB) | (M) Choice, Extrinsic Value: Teachers do not feel children are learning through play thus they resist to implement a play-based curriculum in class | (O) Cultural Model: Teachers are resistant to change (implicit) as they are experienced and feel complacent in their ways |
| | (FK) Teachers do not fully know the different types of play<br><br>(CK) Teachers do not fully know how play emphasize children as constructors of knowledge and how the interactive process provide a context for further learning | (M) Persistence, Attainment Value: Teachers do not feel appreciated as a teacher since parents are unappreciated as they value academic readiness and academic learning | (O) Cultural Setting: Curriculum expectations and demands have made it difficult for teachers to incorporate more play into the daily schedule |
| | (CK) Teachers do not fully know how the principles of play can help promote mathematical concepts<br><br>(CK) Teachers are not familiar with how principles of play can build literacy skills | | |

Table 2, continued

| Sources/Causes | Knowledge* | Motivation* | Organizational* |
|---|---|---|---|
| | (CK) Teachers are not familiar with how principles of play fosters social competence and self-regulation skills<br><br>(PK) Teachers are not familiar with how to use play to achieve the learning objectives of each unit<br><br>(PK) Teachers are not familiar with how to use play as the means for transmission of teaching content | | |
| Learning and Motivation Theories | (MK) Teachers are not familiar with how to evaluate their own strengths and challenges in implementing learning through play in the curriculum<br><br>(MK) Teachers did not consistently develop self-learning habits to evaluate the problems they face in implementing learning through play and adjusting teaching strategies | (M) Choice, Extrinsic Value: Teachers do not feel "play" or "learning through play" can help children gain literacy and math skills | (O) Cultural Settings: Many teachers have complained that the revised assessment reports have created large amount of administrative work and hence delaying other efforts like incorporating more play |

Table 2, continued

| Sources/Causes | Knowledge* | Motivation* | Organizational* |
|---|---|---|---|
| Background or Review of the Literature | (FK) Teachers do not fully have the knowledge of the definition of play<br><br>(FK) Teachers do not fully know the common characteristics of play<br><br>(PK) Teacher are not familiar with the skills to/skills involved with implementing a "learn through play curriculum" | (M) Mental Effort, Self-Efficacy: Teachers don't feel they have the skills to implement "learning through play" in the classroom as research has always shown it is difficult to do effectively and in an impactful manner | (O) Cultural Model: Parents of a Confucian tradition are heavily academic focused and that exerts pressures or rewards for more academic skills based curriculum rather than a play-based curriculum |

* Indicate if the category is Factual Knowledge (FK), Conceptual Knowledge (CK), Procedural Knowledge (PK), Metacognitive Knowledge (MK), Motivation (M), Organization (O)

## Participating Stakeholders

This study examined the extent to which an emphasis on teaching academic skills is suppressing child-friendly pedagogies such as play-based learning in a kindergarten classroom with the key stakeholders as the teachers. Although the students are a key stakeholder, for the purposes of this study and due to the young age of the students, they did not serve as participants in this study.

While the joint effort of all stakeholders, including administrators and parents, ultimately contribute to the achievement of the overall compliance with the pre-school curriculum criteria and standards recommended by the HKSAR Education Bureau, the teachers of the Kindergarten are the primary stakeholders for this study. The total population of the teachers was 277 with the breakdown of 89 native-English-speaking teachers, 121 Cantonese-speaking teachers and 67 Putonghua-speaking teachers. The demographics of the entire population of teachers represented were 32% English, 44% Cantonese and 24% Putonghua. The Kindergarten conducts bilingual and trilingual classes where each bilingual class has two different language teachers in a

classroom at all times and each trilingual class has three different language teachers in the classroom. Hence, the same survey had the English and Chinese translation in one version and was sent to teachers of all three languages.

## Data Collection

After the approval of the Institutional Review Board of the University of Southern California, data was collected via an online survey, in-person interviews and classroom observations to validate the knowledge, motivation and organizational assumed causes when implementing a play-based curriculum.

### Surveys

A survey was used to assess the knowledge, motivation and organizational assumed causes. A link to the online survey was sent via email to 277 teachers with 98 responses (35.3%) collected. The online survey contained thirty-two items with sixteen items concerning knowledge causes, nine items concerning motivation causes and seven items concerning organizational causes. The survey utilized Likert scales, multiple choice, ranking responses and fill-in responses to collect participant data. All participants read the information/fact sheet which expressly set out their participation as voluntary. Respondents had the option to not participate in the survey and to skip any question on the survey. Of the ninety-eight responses, two declined to participate in the survey therefore there was a total of ninety-six respondents who explicitly agreed to continue with the online survey and to be contacted potentially for in-person interviews and classroom observations. A copy of the survey instrument is set out in Appendix A

Responses were collected and tabulated through Qualtrics. In addition, statistical software was used to conduct regression analyses between the different categories of respondents

to indicate any statistically significant relationships. The participants' identity remained confidential at all times, as well as, all files kept on a password protected secured cloud service.

**Interviews**

Interviews were conducted after the conclusion of the survey to probe for in-depth responses and investigate on some issues that were not covered in the survey. Eight teachers were selected for individual-in-person interviews based on their responses on the survey, their knowledge of play and play-based learning, their language specialty and their years of teaching experience. The interviews were conducted by the researcher and a representative of the central curriculum development section of the Kindergarten. All interviews were conducted in English for English-speaking teachers, in Cantonese for Cantonese-speaking teachers and in Putonghua for Putonghua-speaking teachers. All interviews began with a standard protocol reiterating the information fact sheet and obtaining their permission to record the interview for later transcription and coding. Each interview lasted for about 40-50 minutes. During the interviews, notes were taken in English by the researcher and curriculum section representative. All interviews were recorded and transcribed in English by the researcher. A copy of the guiding questions for the interviews can be found in Appendix B.

**Observations**

Classroom observations were conducted to assess how teachers integrate play in the curriculum. The observations were used as part of the methodology of the study to triangulate their practice as it relates to the concepts and responses collected in the surveys and interviews. Two teachers, one of nursery class and one of upper class, who participated in the interviews were selected for in-class observation based on their responses, their years of experience and the grade level they were teaching. Both observations were conducted by the researcher and

recorded for analysis purposes. The researcher observed the class for about 30-35 minutes. Each observation session was conducted during the small group/inquiry learning time. A copy of the observation protocol is set out in Appendix C

## Validation of the Performance Issues

### Validation of the Performance Issue: Knowledge

In order to assess knowledge performance causes, teachers were asked to complete an online survey, participate in an interview and an observation. To assess participants' factual knowledge and conceptual knowledge, teachers were asked on the survey with Likert scale items and multiple choice questions about the requirements of the EDB, the definition and characteristics of play and learning through play. Interviews followed to reaffirm the survey assessment. For some conceptual knowledge and procedural knowledge, in addition to surveys and interviews, several teachers were selected for observation by the researcher on how they implement a learning through play curriculum and use play to achieve a lesson's learning objective. In order to validate metacognitive knowledge causes, teachers were asked in the survey with Likert scale items and multiple choice questions concerning their abilities to self-evaluate their own strengths and weaknesses in teaching styles and as a professional self-learner.

### Validation of Performance Issue: Motivation

Motivation is a key barrier for accomplishing any task. In the Kindergarten, the relevant motivation issues were task value, self-efficacy and attainment value. Teachers were assessed via the survey and interviews to determine whether they are motivated to implement a play-based curriculum. Survey and interview questions were designed to discover the value teachers place on play and their expectancies for learning through play and whether play will lead to better learning. Questions also asked in relation to parents' feelings regarding play and academic

readiness in the classroom and whether they felt conducting play in the classroom was appreciated by parents.

**Validation of Performance Issue: Organization**

Assumed causes relating to cultural model and cultural setting were assessed through survey and interviews. Organization culture and organization settings often affect teacher's motivation and restrain them from implementing a play-based curriculum. In order to validate organizational causes, participants were asked in the survey using Likert scale, rank order scale and fill-in response questions. Several participants were interviewed to assess which organizational factors are contributing to the performance gap.

## Data Analysis

Quantitative and qualitative assessments of the survey, interview and observation results were conducted. In addition to mean and standard deviation to identify the average level of responses, statistical analysis was conducted on all survey results by a statistical software to test for regression relationships between different sub-groups of participants. Some open-ended responses were coded and categorized for the ease of data analysis. The interview data were transcribed and coded into themes that were related to knowledge and skills, motivation and organization performance gaps.

## Trustworthiness of Data

The triangulation of data was used in this study to enhance accuracy. In this connection, the survey was used for the quantitative approach and in-person interviews were used for the qualitative approach. Classroom observations were conducted as means to further balance quantitative data.

## Role of the Researcher

As the researcher is a director of one of the organizations operating the Kindergarten and having family members in upper management positions, there was a potential conflict of interest. Because the researcher is not directly involved in the management of the school, his role as a researcher was explained and in addition a representative of the central curriculum development section explained that this study was also conducted in conjunction with regular curriculum assessment. It was communicated to the teachers that this study was not part of a performance evaluation or job advancement exercise. At the same time, the researcher emphasized that participation in all survey and interviews was voluntary.

# CHAPTER FOUR: RESULTS AND FINDINGS

This study examined how a child-friendly pedagogy, like play-based learning can be better incorporated in kindergarten classrooms in Hong Kong. In addition, the study examined the relationship between the emphasis on teaching academic skills and its effect on diminishing child-centered pedagogy such as play-based learning. The gap analysis was used as the framework for this study (Clark & Estes, 2008). The guiding question for this study is: what are the knowledge and skills, motivation, and organizational causes that teachers face in order to improve and reach the goal of providing child-centered, play-based pedagogy for 85% of the total class time recommended by the Hong Kong Education Bureau? Teachers of the Kindergarten were the key stakeholders of this study.

The data collection methods used in this study were both quantitative and qualitative. Surveys, interviews and classroom observations were used to triangulate data. A link to an electronic online survey was distributed to teachers via email. Survey data was then analyzed in sub-categories using data analysis software to test for relationship significance. Interviews with teachers were conducted five to six days after the surveys closed for submission. Classroom observations were conducted two weeks after the interviews. The findings from the surveys, interviews and classroom observations are presented and synthesized under the categories of knowledge, motivation and organization. This chapter sets out the results and findings of the data collection process.

## Participating Stakeholders

The participating stakeholders for the survey were the teachers of all nine campuses of the Kindergarten. The total population of the teachers is 277 with the breakdown of 89 native-

English-speaking teachers, 121 Cantonese-speaking teachers and 67 Putonghua-speaking teachers.

277 surveys were distributed and 98 responses (35.3%) were received. Of the 98 respondents, two declined to participate in the survey, hence there were 96 effective respondents. Out of 96 respondents, 25 were English-speaking teachers, 52 were Cantonese-speaking teachers and 19 were Putonghua-speaking Teachers. This reflects the demographics of teachers in general of the Kindergarten at 32% English teachers, 44% Cantonese teachers and 24% Putonghua teachers. In terms of the years of teaching experience of the respondents, it varied from 2 years to over 30 years. There were 29 teachers with 1-5 years of teaching experience, 21 teachers with 6-12 years of teaching experience, 25 teachers with 13-20 years of experience and 21 teachers with over 20 years experience. In terms of the grade level represented, there were 22 pre-nursery teachers, 18 nursery teachers, 26 lower class teachers and 30 upper class teachers. This also approximately represents the demographics of the grade level of all nine campuses with 23% pre-nursery teachers, 27 % nursery teachers, 26% lower class teachers and 24% upper class teachers. Some teachers teach two grade levels, hence only the lower level was chosen for the purpose of calculating valid survey responses. Most respondents are teachers of half-day classes and the number of whole-day classes account for only less than 10% of the total classes offered at the Kindergarten. A summary of the demographic of teachers who completed the surveys is set out in Table 3.

Table 3

Demographics of the Teachers Who Completed the Surveys

| Characteristic | n | % |
|---|---|---|
| Language Specialty: | | |
| English | 25 | 26% |
| Cantonese | 52 | 54% |
| Putonghua | 19 | 20% |
| Grade Level Taught: | | |
| Pre-nursery | 22 | 23% |
| Nursery | 18 | 19% |
| Lower-class | 26 | 27% |
| Upper-class | 30 | 31% |
| Years of Experience | | |
| 1-5 | 29 | 30% |
| 6-12 | 21 | 22% |
| 13-20 | 25 | 26% |
| >20 | 21 | 22% |

Survey data was analyzed for relationship significance based on the demographic sub-categories indicated above. Hence in some of the graphs below, data was visually displayed in sub-categories of teachers where there were significant differences between sub-groups. Most differences were found among different sub-groups of language specialty where there were differences in responses among the breakdown of Cantonese-speaking teachers, English-speaking teachers and Putonghua-speaking teachers. This could be due to the reason that Cantonese-speaking teachers were trained locally and that being immersed in the culture, they were used to the elements that were affecting their knowledge, motivation and organizational behaviors.

## Results and Findings for Knowledge Assumed Causes

Knowledge entails the process by which people analyze information. It can be categorized as factual, conceptual, procedural and metacognitive (Anderson & Krathwohl, 2001). A gap in knowledge and skills across any of the above four categories can hinder accomplishing certain goals (Clark & Estes, 2008). Hence, the four categories are used below as a structure to identify any knowledge gaps which are then used to develop possible evidence-based solutions to enhance performance.

### Survey Results

The survey contained fifteen questions relating to validating knowledge assumed causes. Among those fifteen questions, six questions concern factual knowledge, five questions concern conceptual knowledge, three questions concern procedural knowledge and two questions concern metacognitive knowledge. As respondents had the option to skip questions, not all survey items were completed by all ninety-six (96) survey respondents. To analyze the survey results, in addition to Qualitrics, the statistical software SPSS was used to generate frequencies, means and standard deviations of the responses. In addition, in some items, regression analysis was conducted between different categories of respondents to indicate any statistical significance between different categories of teachers and their responses. The information was then compared with interview and observation findings to find support to validate the knowledge assumed causes.

**Factual knowledge**. Factual knowledge is the specific information on content and elements, which are concrete and true. In its simplest form, factual information entails terminology, significant facts and specific events, which have occurred. To assess factual

knowledge, there were six survey questions which focused on teacher's general understanding of the local recommendation, the definition of play and play-based learning in general.

***The criteria of learning through play as prescribed by the EDB.*** The first assumed cause was that teachers are not fully aware of the recommendation for learning through play as prescribed by the EDB. Respondents were asked whether they knew if the EDB prescribed any recommendation for "learning through play" in the pre-primary curriculum (Q.1) and were asked specifically if they knew of the specific time allocation recommendation (Q.2).

79 out of 93 respondents (77%) knew about the recommendation. Nevertheless, 53 out of 88 respondents (60%) did not know about the exact time allocation recommendation by the EDB. Out of 93 respondents, 79 responded that they knew of the recommendation prescribed by the EDB. Cantonese teachers being 59% (n=43) of the respondents who knew of the recommendation showed they knew about the recommendation more than the English teachers and Putonghua teachers who accounted for 19% (n=18) and 12.90% (n=12) of the respondents respectively. Figure 1 illustrates the responses to question 1 by breakdown of teacher's language specialty.

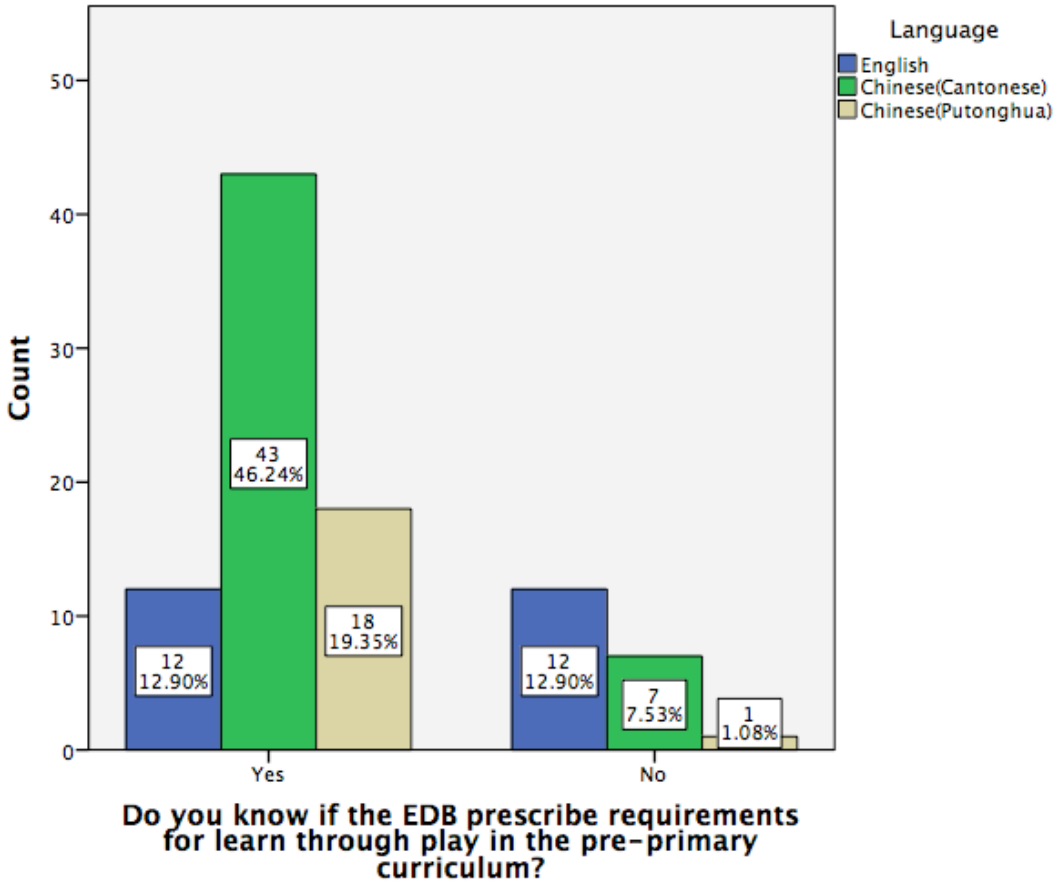


*Figure 1.* Responses to Question 1 About Recommendation of The EDB for Learning Through Play Based On Teachers' Language Specialty

Nevertheless, with reference to knowing the specific time allocation as advised by the EDB, only 35 out of 89 respondents (40%) for the second question knew of the 155 minutes recommendation. It is interesting to note that Cantonese teachers knew of the specific time allocation recommendation better than other language teachers. For those respondents who choose the correct answer, twenty-two respondents were Cantonese teachers whereas only ten were English teachers and three were Putonghua teachers. A chi-square test of independence was conducted to examine the relation between the variable of language specialty and the variable of time allocation chosen by the teachers. The relation between these variables was significant, $X^2$ (2, N=89) =13.58, $p$=.035 confirming Cantonese teachers knew of the

recommended time allocation better. In sum, the assumed cause that teachers do not fully know the criteria of learning through play as prescribed by the EDB was validated by survey results. The number of respondents for each time allocation answer categorized by language specialty is set out in Figure 2.

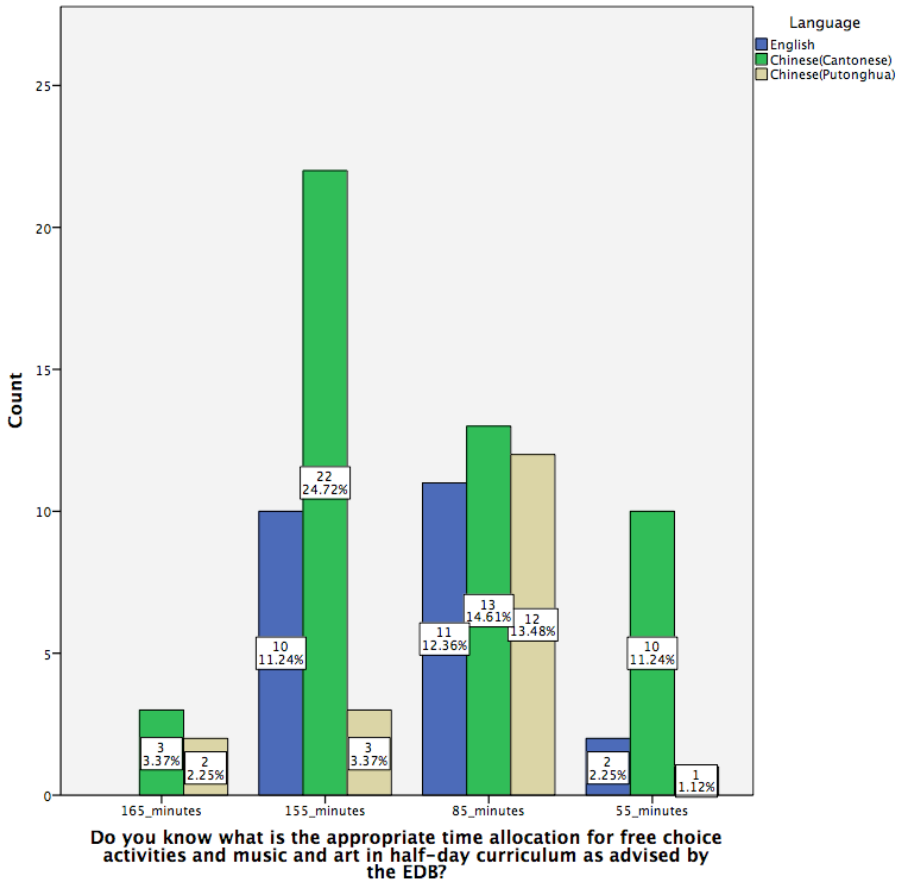


*Figure 2.* Responses to Question 2 Based on Teachers' Language Specialty

***The definition of play.*** As play appears in different forms at different times and places, teachers need to have a thorough knowledge of the definition of play and characteristic of play in order to identify what activities lead to play and whether the children are in fact engaged in play (Cheng, 1999). Therefore, participants were asked to choose the common factors that they believed defined an activity as play (Q.3). Researchers have identified four common factors of the definition of play: (i) the child's feelings or motivation, (ii) the type of behavior children

partake when they play; (iii) the environment in which children play; and (iv) the process and procedures children take when they play (Rubin et al., 1983). In this question, participants were asked to pick multiple answers among four correct choices.

Survey results validated that teachers were not fully aware of the common factors that define an activity as play. All four factors were correct and only 23 out of 96 respondents (24%) picked all four factors. Of the twenty-three respondents who picked all four factors, twelve were Cantonese teachers, which accounted for 52% of this category, which was also more than the seven English teachers (7.45%) and four Putonghua teachers (4.26%). Perhaps, this is an indication that Cantonese teachers were more sensitive to the definition of play. Figure 3 shows the number of participants along with the number of correct factors identified, being "one" indicating one common factor identified by the teachers and "four" indicating a total of four characteristics identified.

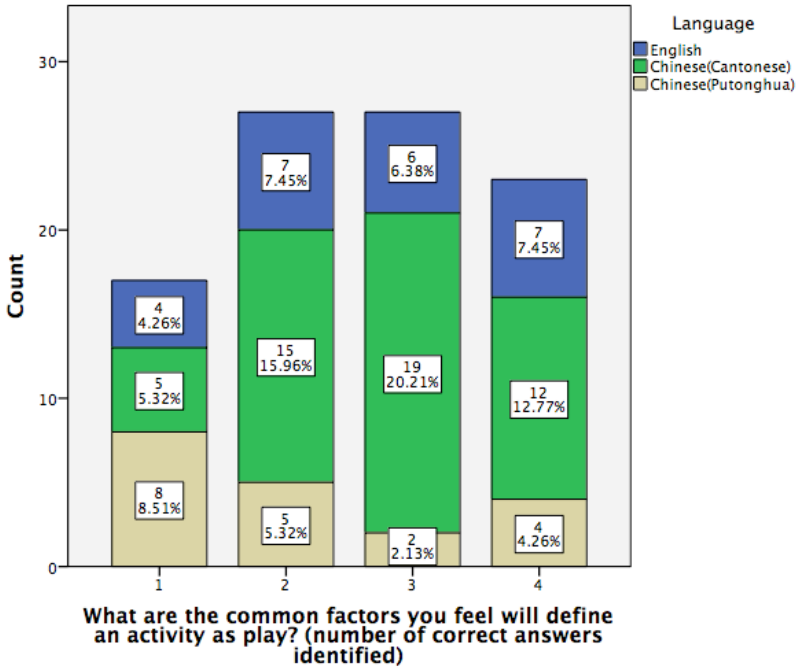


*Figure 3.* Responses to Question 3 by the Number of Correct Answers Identified Based on Teachers' Language Specialty

***The common characteristics of play***. Knowing the characteristic of play is important to be able to identify that children are in fact playing or what needs to be done to motivate them to be playing and when to regard play as self-directed. Prominent scholars have defined six common dispositions or characteristics of play: (i) play is intrinsically motivated, (ii) play is relatively free from rules, (iii) play is carried out as if the activity is real, (iv) play is focused on the process rather than any product, (v) play is product of the players making their own choices, and (vi) play requires the active involvement of the players (Rubin et al., 1983). A seventh answer "play is always symbolic" was provided as a decoy response and to assess knowledge. In the survey, teachers were asked if they knew of these characteristics of play (Q.4) and they were able to choose multiple answers for this question.

Surveys results indicated only 7 out of 94 respondents (7.45%) chose all six correct answers and all were Cantonese teachers. Based on the survey results, teachers were not fully aware of the common characteristics of play. Results showed the decoy response "play is always symbolic" had a relatively low response rate of 6.9% (n=26). Also, it was noted that the characteristic "play is carried out as if the activity is real" had the least responses of 5.2% (n=18) which indicated that perhaps role-play or pretend play are not viewed by teachers as a common characteristic of play. Figure 4 indicates the number of correct characteristics picked by teachers of different language specialty, being "one" indicating one characteristic identified by the teachers and "six" indicating a total of six characteristics identified. No one picked all seven characteristics. Figure 5 indicates the frequency of the each choice picked by each language specialty.

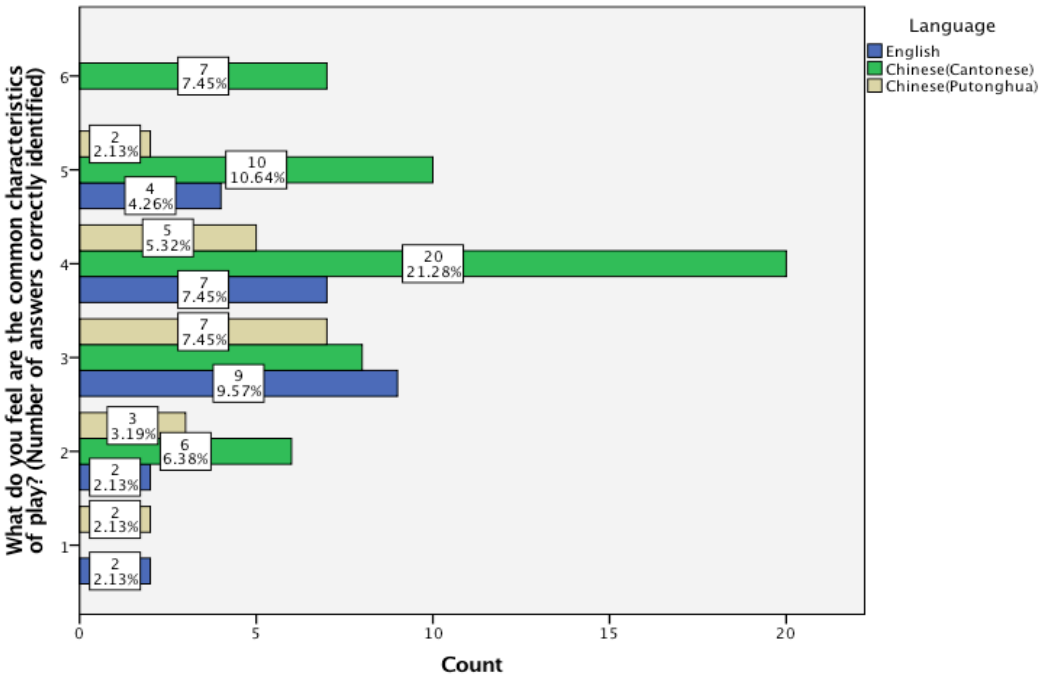


*Figure 4.* Responses to Question 4 Based on the Number of Correct Characteristics Identified Based on Teachers' Language Specialty

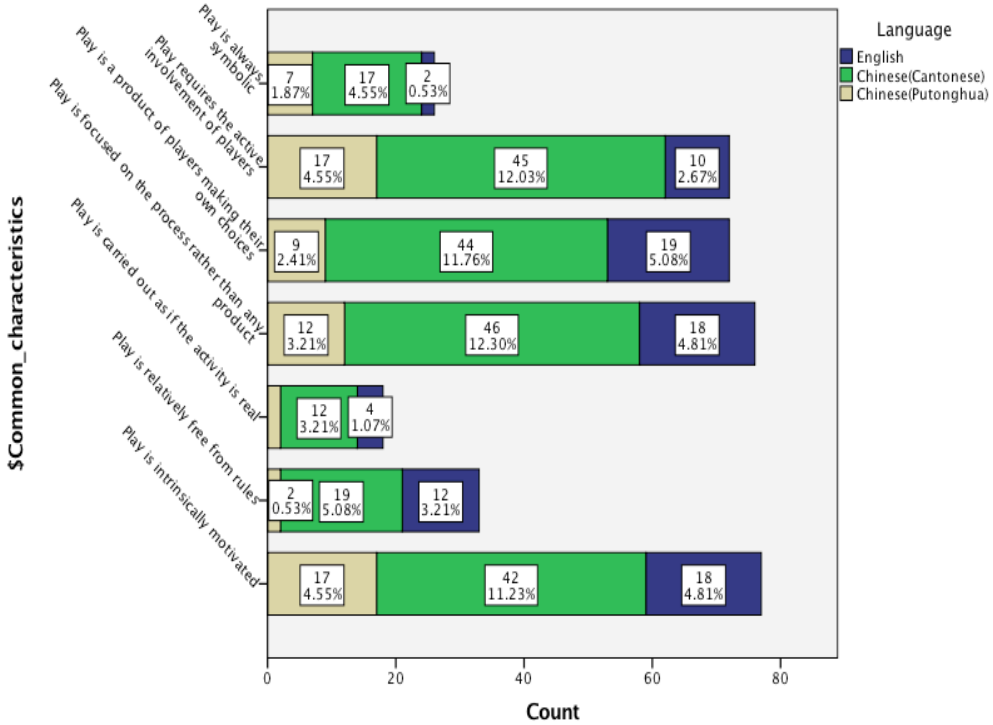


*Figure 5.* Responses to Question 4 Based on Common Characteristics and Frequencies of Teachers' Language Specialty

As part of identifying the characteristic of play, it was also important for teachers to identify the state of playfulness for a child. Prominent play and learning expert Csikszentmihalyi (1993) highlighted six qualities which indicate when a child has entered into a state of playfulness when they have (i) clear goals; (ii) focused attention; (iii) loss of self-consciousness; (iv) an altered sense of time; (v) intrinsic motivation; and (vi) belief that an experience is worthwhile for its own sake. These features can identify when a child is playing, therefore, teachers were asked if they could identify these qualities.

Survey results found that only 4 out of 94 respondents (4.25%) chose all six qualities. A large percentage picked four criteria. Hence, survey results substantiated the assumed cause that teachers are not fully aware of the common characteristic of play because they are not aware of the common qualities that indicate when a child has entered into a state of playfulness. The number of qualities identified by the number of teachers is set out in Figure 6, being “one” indicating one common quality identified by the teachers and “six” indicating six common qualities identified.

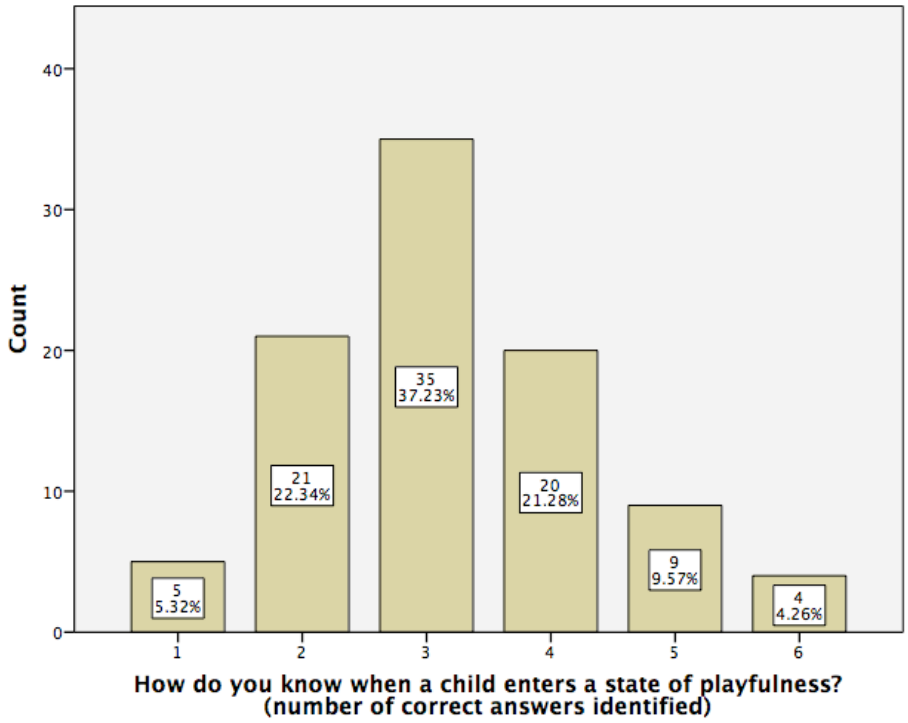


*Figure 6.* Responses to Question 5 Based on the Number of Correct Answers Identified by Teachers

***The different types of play***. Being familiar with the different types of play means teachers are able to properly set up the environment and elevate the level of play. In the survey, teachers were asked to agree or disagree whether they are knowledgeable about the different types of play. Almost all respondents, 84 out of 93 teachers (90%) strongly agreed or agreed they are knowledgeable about the different types of play (mean=2.97, SD=.40). Hence, the assumed cause that teachers do not fully know the different types of play was not validated. The responses to this survey question are set out in Figure 7

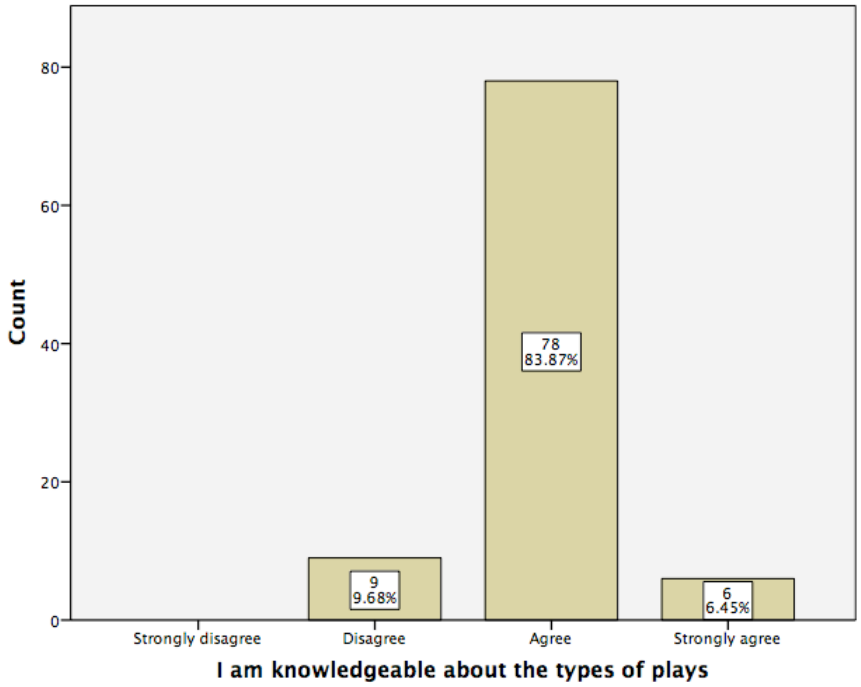


*Figure 7*. Responses to Question 6 About Knowledge of Types of Play

**Conceptual knowledge**. Conceptual knowledge is often referred to as the knowledge of classifications, categories and knowing how to organize these forms and relationships between the different classifications and categories (Anderson & Krathwohl, 2001). In other words, it is a process of transferring and classifying factual knowledge to a deeper understanding or new situation. The survey questions concerning the conceptual knowledge were designed to assess teachers' deeper understanding of play and its benefits.

***Children as constructors of knowledge.*** The constructivist theory suggests that learners are no longer regarded as passive receivers of knowledge, but as active constructors of meaning. Psychologist Jean Piaget emphasizes that children learn knowledge from experimentation and playfulness with material and reflection, which is different than the traditional approach where children are viewed as passive learners taking instructions without creating meaning.

In this connection, participants were asked whether they agreed or disagreed that play emphasizes children as constructor of knowledge (Q.27). Almost all respondents (93%, n=87, mean=3.26, SD=0.57)) strongly agreed or agreed that play emphasizes children as constructor of knowledge. Please see Figure 8 for the responses to this question.

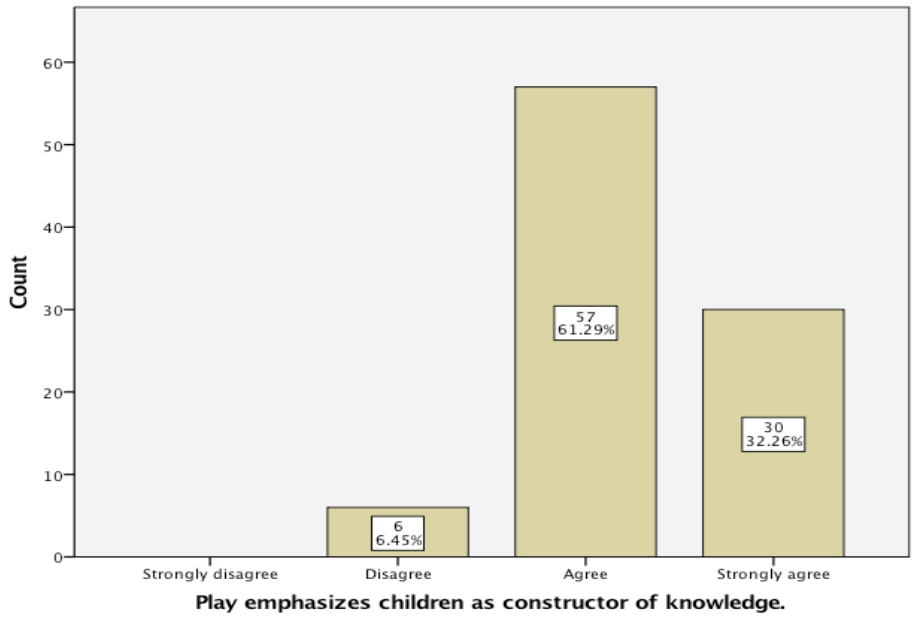


*Figure 8.* Responses to Survey Question 7 Where Play Emphasizes Children as Constructors of Knowledge

In the open-ended question (Q.16) concerning the teacher's view of their role in a kindergarten classroom, most respondents agreed that their role in the classroom was not to emphasize children as passive receivers of knowledge (an instructor or planner), but as an observer facilitator and scaffolder (constructor of knowledge). Results for the open-ended question were coded into five categories, in the order of a teacher's active role as the knowledge provider: (i) observer & play environment organizer; (ii) playmate and friend who will intervene at appropriate time; (iii) facilitator, guidance provider and scaffolder; (iv) mentor and role model; (v) instructor and planner. The order from 1 to 5 indicates the degree of involvement of teachers

in providing instructions. After coding, survey results indicated that a majority of the teachers (87%, n=73) have identified their role as facilitator, guidance provider and scaffolder or those with less teacher instruction or involvement. Figure 9 indicates the number of teachers who picked each category based on teachers' language specialty for the open-ended question 16.

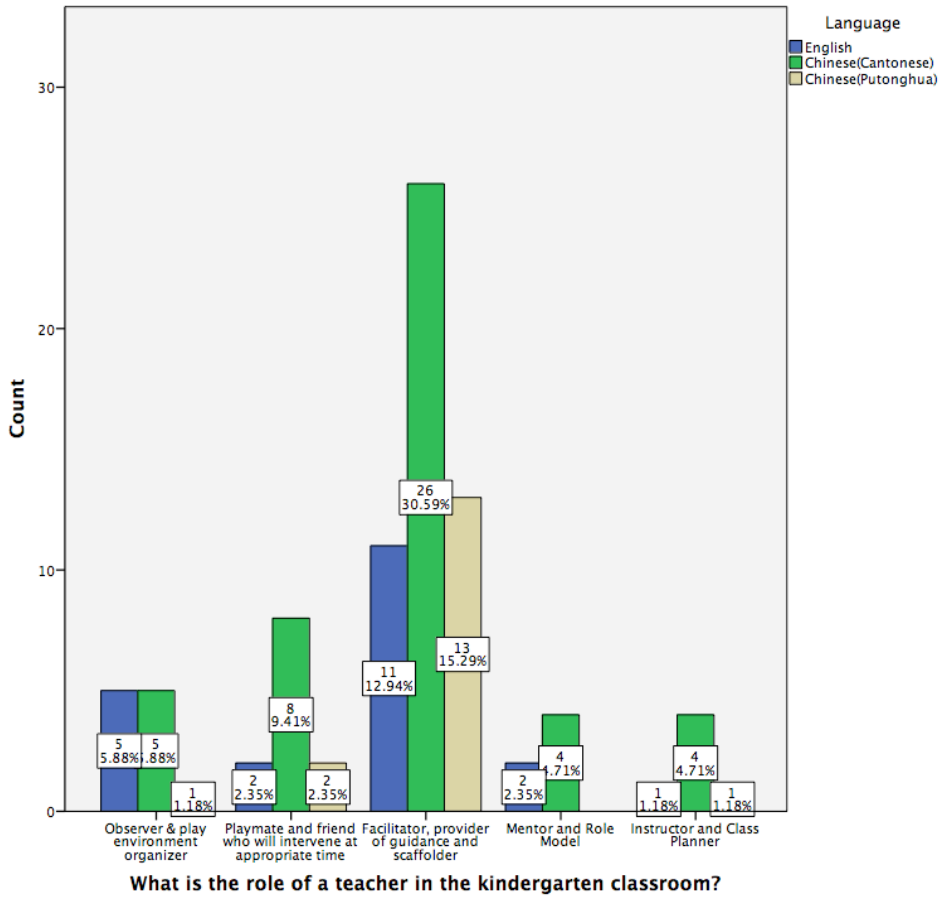


*Figure 9.* Responses to Question 16 Based on Teachers' Language Specialty and Categorized by the Five Active Roles of Teachers

Of the detailed breakdown of the respondents, there were twenty-six Chinese teachers, eleven English teachers and thirteen Putonghua teachers who indicated their role as facilitator, provider of guidance and scaffolder. Overall, results from both survey questions indicated that teachers skewed towards recognizing children as constructivist of knowledge versus being instructor directed learning oriented. Also, it reflects the role that an interactive process is the

preferred process and pedagogy. Therefore, the assumed cause that teachers do not fully know the way that play emphasizes children as constructors of knowledge and the interactive process provides context for children was not validated.

***Principles of play promote mathematical, literacy and socioemotional skills***. Teachers are familiar with how principles of play can help promote mathematical concepts, foster literacy skills and build social competence and self-regulation skills. Research long supported that play and guided play has helped to foster mathematical concepts, literacy skill and social competence including self-regulation (Hirsch-Pasek & Golinkoff, 2003; Barnett & Storm, 1981). Therefore, teachers were asked in the survey to acknowledge whether they are knowledgeable about how to help children to learn mathematical concepts (Q.11), foster literacy skills (Q.12) and build social competence including self-regulation skills (Q.13) through play activities. Most respondents have strongly agreed and agreed that they are knowledgeable about how to help children to learn, foster and build mathematical, literacy and social competence skills through play-based activities. In all three questions, responses had a mean of about 3, being 85 out of 93 respondents (91%, mean=2.99, SD=.45), 83 out of 93 respondents (89%, mean=2.99, SD=.45) and 85 out of 93 respondents (91%, mean=3.04, SD=.46) responded “strongly agree” or “agree” respectively. This represented a strong acceptance by the teachers and the assumed cause that teachers do not know how the principles of play can help promote or foster mathematical concepts, literacy skills and social competence skills and self-regulation skills could not be validated. Hence, Figure 10 is a combination of the responses to survey questions 11, 12 and 13.

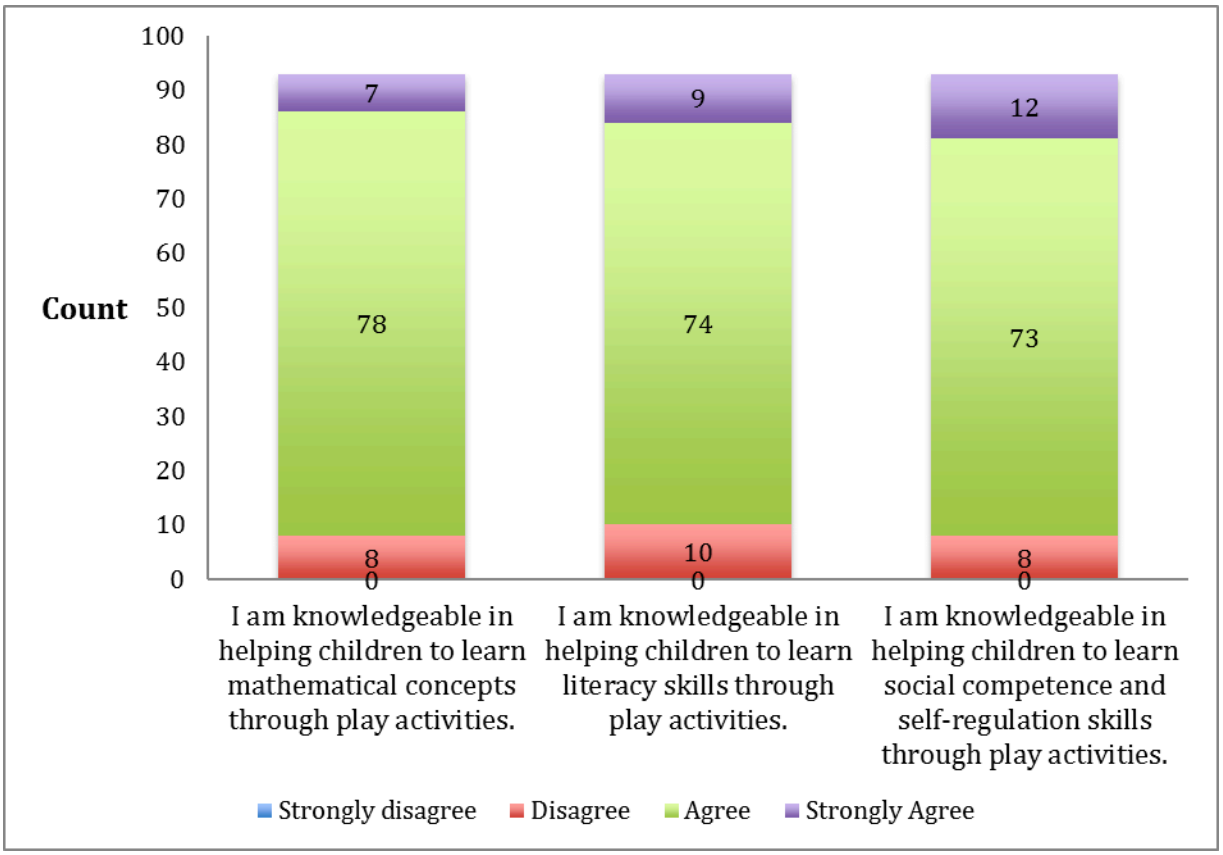


*Figure 10.* Responses to Questions 11, 12 and 13 About Mathematical, Literacy and Social Competence Knowledge Skills

**Procedural knowledge**. Procedural knowledge is referred to as the knowledge of how to do something and includes knowledge in systematic processing, procedural, and criteria assessment (Anderson & Krathwohl, 2001). It is important to assess because studies indicated that, although educators believe deeply in the benefits of learning through play, in reality they have difficulty in using play to promote learning in actual classrooms (Wood & Bennett, 1997).

Three survey questions were designed to assess teachers' procedural knowledge. Teachers were asked whether they are knowledgeable about the limitation of teacher intervention during play (Q.8), whether they are knowledgeable in evaluating levels of play activities for

children (Q.9) and whether they are knowledgeable with using different methods and techniques to increase level of play activities (Q.10).

***The skills involved with implementation***. One of assumed causes was that teachers are not familiar with the skills involved with implementing a "learn through play" curriculum. One of the learned skills is to know the appropriate time to intervene to support and enhance play so the intervention benefits the children (Gronlund, 2010). When asked about the limitations for a teacher's intervention, most respondents stated that they are knowledgeable in this respect. 88 out of 92 respondents (95%), strongly agreed or agreed that they are knowledgeable about teacher's intervention skills (mean=3.07, SD=.387) Figure 11 shows the response rate for this question.

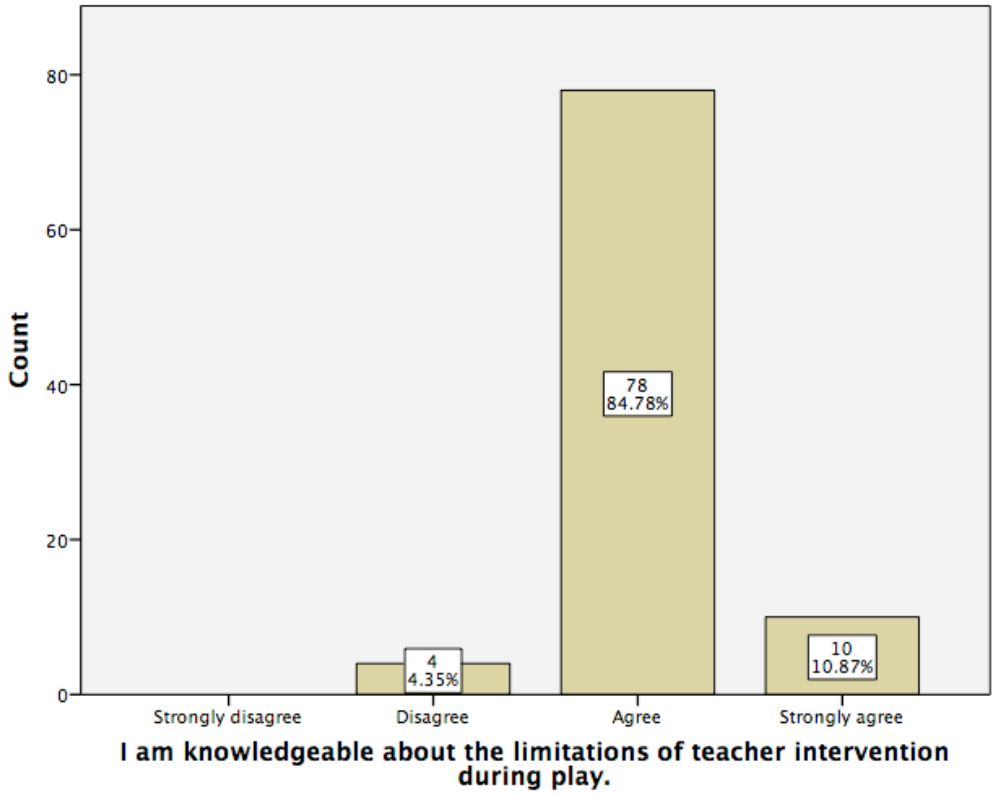


*Figure 11.* Responses to Question 8 About Knowing the Limitations of Teachers' Intervention.

Teachers must understand how to provide support for their children while scaffolding previous knowledge so that the children can reach higher levels of play progressing through the three levels of play from the lowest, chaotic, to simplistic, and finally, the highest level, purposeful play (Gronlund, 2010). Nevertheless, in evaluating the level of play activities (Q.9) and knowing how to use different methods and techniques to increase the level of play activities (Q.10), respondents were less confident as the "disagree" responses for the two questions increased to 31% (n=29, mean=2.72 and SD=.52) and 15% (n=14, mean=2.91 and SD=0.46) respectively. This indicated that teachers may not be that familiar with evaluating the level of play and will require triangulation with interview and observation findings. Overall survey results supported that teachers were familiar with the skills included with implementing a "learn through play" curriculum, thus this assumed cause was not validated. Responses to the question concerning procedural knowledge in evaluating level of play activities for children and with using different methods of increasing the level of play are set out in Figures 12 and 13.

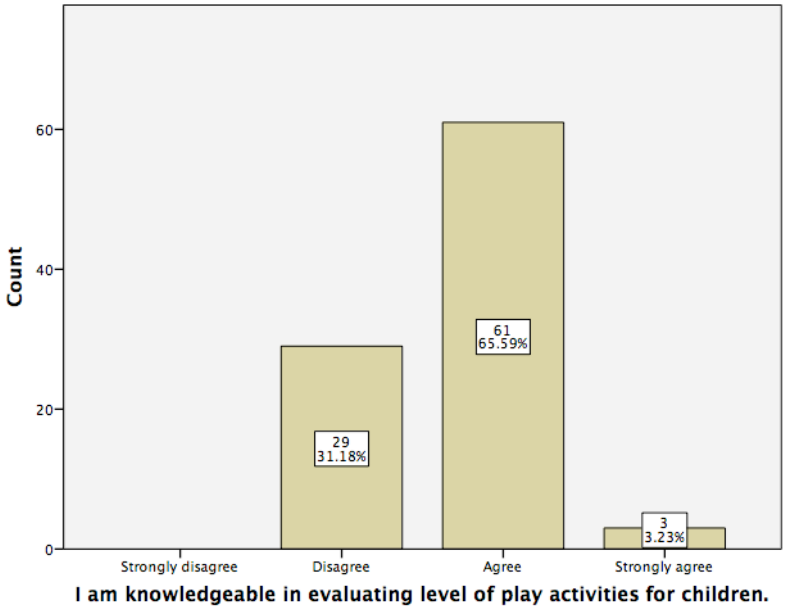


*Figure 12.* Responses to Question 9 About Evaluating Level of Play

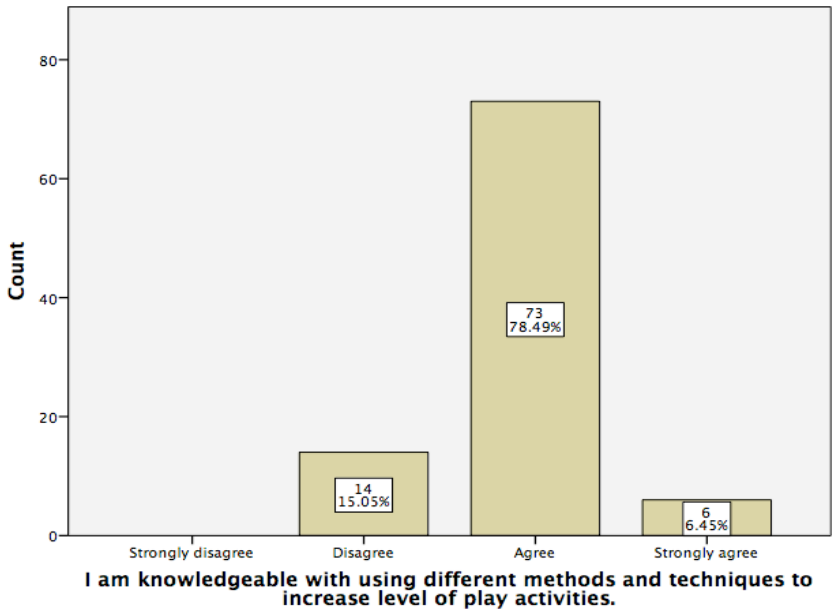


*Figure 13.* Responses to Question 10 About Different Methods to Increase Play

**Metacognitive knowledge.** Metacognitive knowledge includes knowing how to conduct task assessment, evaluation and self-regulation (Anderson & Krathwohl, 2001). For metacognitive knowledge, teachers were asked whether they set goals to evaluate their strengths and challenges in implementing learning through play (Q.14) and how often they evaluate their strengths and challenges in implementing learning through play (Q.15). Both questions were multiple choices.

***Self-learning habits and evaluation.*** One of the metacognitive knowledge assumed causes of teachers not including more play-based activities was that teachers were not familiar with how to evaluate their strengths and challenges on implementing more learning through play in the curriculum. In the survey question relating to this assumed cause (Q.14), 72 out of 91 respondents (79%) strongly agreed or agreed that they set goals and conduct self-evaluation of their strengths and challenges. Statistically, this proved that teachers are setting goals to evaluate their strengths and challenges (n=72, mean 1.21, SD=.41). By language specialty, Cantonese-

speaking teachers with 52% of the responses for "no" (n=10) seem to have the largest percentage of respondent who disagree they set goals to evaluate their strengths and weakness. This is followed by English teachers of 42% (n=8). Please see Figure 14 for the number of responses for "yes and no" answers to question 14 with their category breakdown by language specialty.

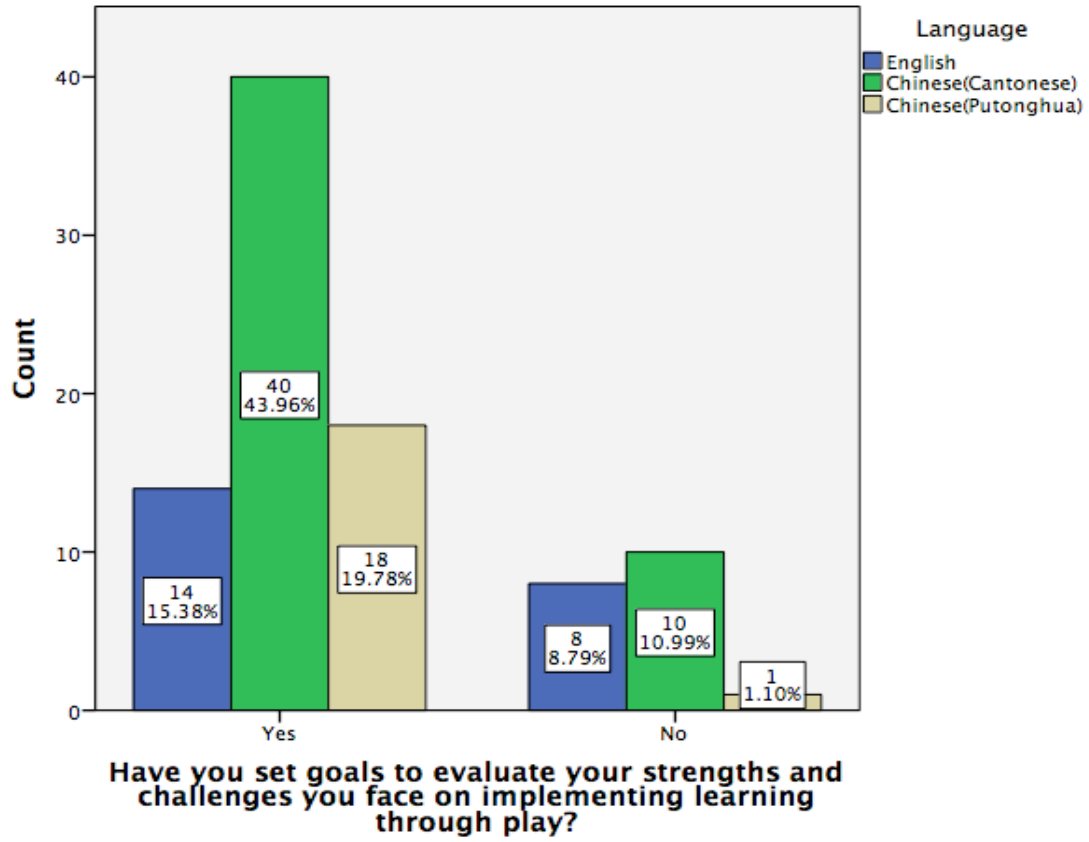


*Figure 14.* Responses to Question 14 About Evaluating Strengths and Challenges in Implementing Learning Through Play Based on Teachers' Language Specialty

***Developing consistent self-learning habits***. Another metacognitive knowledge assumed cause that could prevent teachers from incorporating more play-based activities was that teachers do not consistently develop self-learning habits to evaluate the problem they face in implementing learning through play and adjusting the teaching strategies. In the survey question relating to this knowledge cause, 74 out of 91 respondents (81%, mean=3.13, SD=0.70) chose

that they often or very often evaluate their own strengths and challenges in implementing learning through play. This is reflected by the mean of 3.13. In fact, it is interesting to note that Cantonese teachers (42 out of 74 teachers 56%) had a larger percentage of those who often evaluate their strengths and challenges compared to teachers of English and Putonghua. In general, survey results demonstrated that teachers often use self-evaluation so this assumed cause is not validated. Responses to question 15 with the breakdown by language specialty are set out in Figure 15.

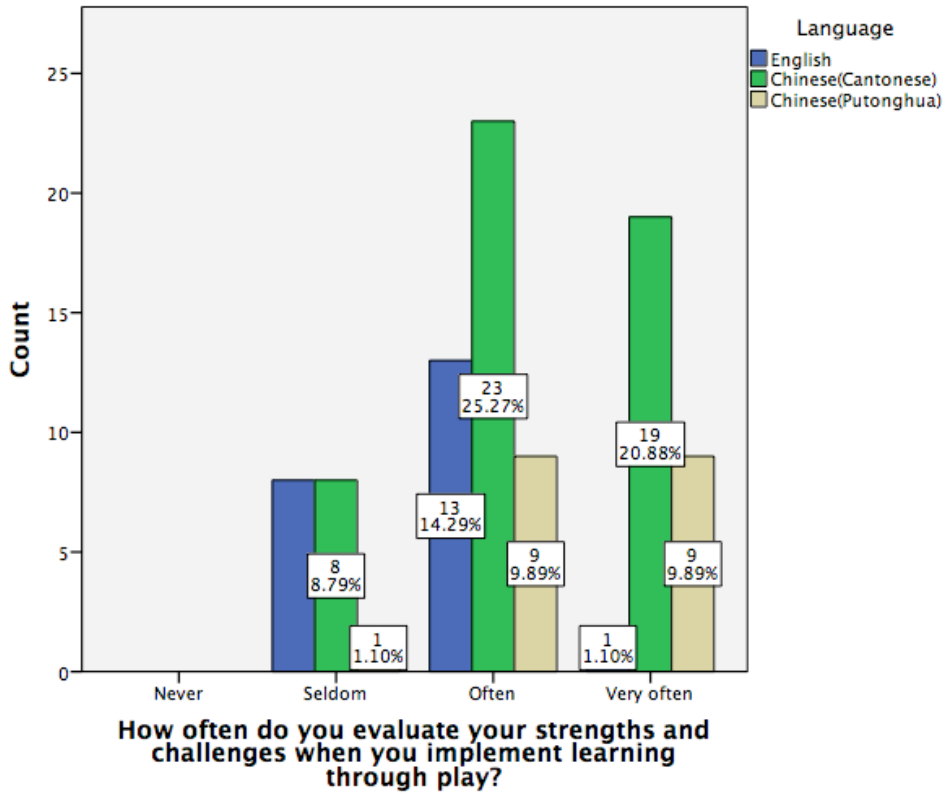


*Figure 15.* Responses to Question 15 about Frequency of Evaluating Strengths and Challenges Based on Teachers' Language Specialty

**Summary of Survey Results for Knowledge Causes**

The survey results indicated that teachers lacked certain knowledge in improving to incorporate more play-based learning in the curriculum. Regarding factual knowledge, although most respondents knew there was a recommendation for "learning through play" in the pre-primary curriculum, they did not know the exact time allocation for play and free-choice activities in a half-day curriculum. Results also indicated that Cantonese teachers knew the recommendation better than teachers of other language groups. Perhaps, Cantonese teachers being trained and educated in Hong Kong were more familiar with Hong Kong's education requirements and the recommendations of the EDB, whereas English-speaking and Putonghua-speaking teachers are usually expatriate teachers who were educated and trained aboard. Survey results also revealed that teachers did not fully know about the definition of play and the common characteristics of play. In relation to conceptual knowledge, teachers indicated that they are well aware that children are constructors of knowledge and the interactive process is good for them to provide a context for further learning. A majority of the teachers indicated that the preferred role for them as a teacher is to be a facilitator and scaffolder. This preference indicated and reinforced their view that children are constructors of knowledge and that the teachers value the interactive process. They also overwhelmingly indicated that they know how principles of play can help children learn, in terms of fostering and building mathematical concepts, literacy skills and social competence. For procedural knowledge, teachers indicated that they are familiar with skills about limitations of a teacher's intervention, the need to evaluate the level of play and the skills needed to raise the level of play activities. In regard to metacognitive knowledge, results found that teachers were familiar with evaluating their own strengths and

challenges on implementing learning through play and that many teachers developed self-learning habits to evaluate their strengths and challenges.

**Findings from Interviews**

As discussed above, survey results highlighted that teachers were unfamiliar with certain knowledge which could have affected their improvement in incorporating more play-based learning in the curriculum. Interviews were conducted to triangulate the data with the survey results. Eight teachers were selected to be interviewed based on their responses in the survey, their teaching experience, their language specialty and their years of teaching experience. Three Cantonese teachers, Three English teachers and Two Putonghua teachers were selected. Each interview was recorded and transcribed. Each teacher agreed to be interviewed voluntary. Some survey items were not triangulated with interview questions.

**Factual knowledge.** Survey results have already established that teachers were not fully aware of EDB's recommendation, and specifically the recommended time allocation of 155 minutes. Hence, the first question selected in the interview was in order to understand if teachers were aware of the recommendation and were in fact doing what the EDB has prescribed. Teachers were asked about the average amount of class time spent on free-choice or play-based activities in the classroom per day, not including snack time and toilet time. The findings indicated that none of the participants were spending the recommended 155 minutes on free-choice/play-based activities per day. Responses ranged from forty minutes to ninety minutes for a half-day curriculum of three hours per day. Although teachers' schedule is fixed, majority of the daily schedule is filled with small group activity times where activities are chosen and planned by teachers. Hence, the interview results showed that teachers are not cognizant of the

recommendation of the EDB, supporting the survey results and validating the assumed cause that teachers are not aware of EDB's recommendation.

The survey results also indicated that teachers may not be fully aware of how to define play and the characteristics of play to be able to identify whether a child is in fact playing. Interview findings supported this assumed cause. In the interviews, teachers were asked "What are the characteristics that you look for to define an activity as play?" and a usual follow-up question was "Like how do you know when a child is really playing?" A number of characteristics were highlighted by teachers but none of the teachers were able to identify all six characteristics which researchers have indicated as the common characteristics of play. Three out of eight teachers described how the type of communication and interaction between peers was an indicator that the children are indeed playing. As explained by one English teacher, "When children are interacting with each other, they are more engrossed in the activity and thus demonstrate the necessary intrinsic engagement for true play." In the interviews, it appeared that English teachers were able to describe more of the characteristics than other language groups. One English teacher explained, "Play is 'you' time. It is time for discovery and exploration, time for children to enjoy, time for them to be free and independent, and time to connect with others." This was contrary to survey results where only Cantonese teachers appeared to be able to identify all six characteristics. In general, through interviews, teachers were able to identify some features or characteristics of play, although no one was able to identify all six. Hence the assumed cause that teachers are not fully aware of the definition of play and the common characteristics that identify play was validated by interview findings.

**Conceptual knowledge**. In reference to conceptual knowledge, teachers were asked if they knew how play emphasized children as constructor of knowledge and how the interaction

process provided context for further learning. All eight teachers emphasized that as a constructor of knowledge, children are capable of conducting the learning process themselves. One teacher specified, "This is a process to test their limits, to let them find out about new things and to explore on their own terms, these are all the process that emphasizes children as constructor of knowledge." Six of the eight teachers have emphasized their role as "observer, assistant and facilitator." When follow-up questions were asked concerning how the interactive process provided context, one teacher explained, "I like to use higher-order questions like why and how to bring out context. I also often encourage other children to participate in the play…there are always one or two children in the class who naturally are good at interacting with other children hence bring in much more dynamic play which provides the context." In sum, many teachers agreed that play certainly emphasizes children as constructor of knowledge and that the interactive process provides context for further learning. The assumed cause that teachers lacked this conceptual knowledge was thus not validated by the interview findings.

In relation to the conceptual knowledge of the principles of play in fostering certain skills, teachers were asked in the interviews if they were familiar with how principles of play can help foster, promote and build concepts, such as mathematics, literacy and social competence. Almost all respondents in the survey indicated that they were familiar with how play and the principles of play can help promote the skills, however interview findings revealed contrary evidence that teachers were still referring to instructional didactic ways that emphasized children as passive learners versus children as constructors of knowledge.

For example, in the question "In consideration of the principles of play, what are some ways to use play or guided play to foster mathematical concepts? List any examples?" One teacher responded, "We use various apparatus and equipment to help children understand

mathematical concepts, like blocks to count and toy clocks for getting them to move the hand to the time I have written on the board." Another teacher said, "They get to be familiar with mathematical concepts with instruments like a measuring cylinder, and pouring water into the cylinder and counting the liters." These examples demonstrated that teachers were not fully aware of the active learning concepts that foster children as constructor of knowledge. Using a toy clock to demonstrate time does not involve any characteristic of play nor does it emphasize children as constructor of knowledge because it is teacher directed and very different from the notion where children are supposed to control their own agenda of activities. Two other teachers have mentioned the use of counting flashcards as examples of play.

As for literacy, teachers were asked "in consideration of principles of play, what are some ways to use play to foster literacy skills." Two of the eight teachers made reference to "role play" as the example where play fosters literacy skills. One mentioned the use of "SMARTboard" to make Chinese characters and educational games in the classroom as play to help promote literacy. But again, engaging children with an apparatus like the "SMARTboard" does not perfectly fit the definition of play or elicit the characteristics of play. Two of the teachers also mentioned songs and music as a "fun" way of elevating the level of literacy for children.

In contrast, many interview participants identified play as helping to foster social competence and four respondents explained how they use group games to promote the concepts of taking turns, helping each other, problem solving and making decisions. The response of one participant was, "In the unit of communities, I prepared some cardboard building blocks and children were asked to build different buildings or structures of our communities using these blocks (should we build a hospital, police station or fire station?). They [children] had to

negotiate, compromise and learn to be agreeable, all essential social competent and self-regulation skills."

In consideration of the above, teachers indicated that although they know the theoretical background of principles of play. However, the application of how principles of play can help foster mathematical and literacy skills was not as apparent. In particular for mathematical and literacy skills, examples given were contrary to the concept of children as constructor of knowledge and showed that part of teachers thinking was still routed in teacher-directed manner. In this regard, interview findings supported that teachers were not as familiar with the concepts of how play can foster mathematical and literacy skills. Hence, findings showed teachers had a strong sense of understanding how principles of play can help foster social competency.

**Procedural knowledge**. Although there was no direct interview question concerning the assumed cause that teachers are not familiar with the skills to/ skills involved with implementing "learn through play" curriculum, many teachers have indicated their knowledge in this area through their discussions and follow-up questions. In reference to whether teachers know about limitation of their intervention during play, all teachers made some reference to their role as facilitator while three teachers explained their role as an observer, and at the same time as a participant with encouragement and support. One teacher described her role to intervene, " …role of the teacher is to assist and participate in the form of encouragement and maybe intervene only with appropriate questions to encourage more participation in play. Sometimes, I also like to ask children to switch role where they will be the teacher and it always surprises me that they often ask high-order thinking questions." Teachers have also explained that they knew about different levels of play and how to increase level of play activities. One English teacher explained her position:

> I usually let them ask the questions which often bring the levels of play up by asking questions and I like getting other children to be involved. I found in Hong Kong that children interact really well with adults (maybe because of all the helpers) but I would try to stay away until I know I want to scaffold the activity, for example doing the same activity again but for different reasons. Like with my sand and soil box, the first week I hide the bugs and let them just dig with different tools and make a mess. The next week, I would ask them to do the same thing but with brushes and get them to see the seeds and roots which I have planted in the box, while asking them what they find and show them the seeds and roots and let them know this is where the bugs live and students will learn these are the materials you will find under the earth and hence we are playing with a purpose.

In order to validate their procedural knowledge, teachers were specifically asked in the interview to give examples of when they use play to achieve a learning objective of a unit and an example of how they use play for transmission of teaching content. All eight teachers gave examples of how they would use group games and role-play to emphasize social learning. One example was, "…similar to a duck duck goose game, we used a group game to teach cooperation and self-control. Children sat in a circle and then a child chose to put a bean bag behind another child's back. The child who was chosen chases the first one around the circle before he/she sits down in the spot in the circle. The game encourages patience, self-control and cooperation." As for transferring teaching content, one teacher mentioned, "Parents sometimes could be more concerned whether the child learns about ABCs rather than the social skills they learn from play. Teaching content somehow always has to relate back to literacy or language." Nevertheless, five

teachers expressed that they are able to transfer content by their teaching methodology. Overall, teachers felt they were confident with their procedural knowledge on implementing "learn through play" in the curriculum.

**Metacognitive knowledge**. The assumed cause was that teachers are not familiar with evaluating their own strengths and challenges in implementing learning through play in the curriculum and that they do not do the evaluation consistently. In the interviews, teachers were asked three questions to validate the assumed cause for metacognitive knowledge: "How do you evaluate your performance in implementing learning through play and problems you have encountered?", "What are the steps you have taken to help you implement learning through play successfully?" and "What are some challenges you face in implementing learning through play?"

Of the eight responses, two responded that they practice daily self-reflection and three said they practice weekly reflection since one hour of collaboration planning each week is on the schedule. One teacher said she thinks about the activities but does not do any formal evaluation. Another teacher stated that she does reflection after every unit of inquiry which is about every two months. The last teacher responded that "it is difficult to do evaluation for learning through play when it is for literacy and math as they either learn it or they do not." One teacher explained her evaluation process, "We do lesson planning which is shared among teachers, hence there is some evaluation with comments from teachers before and after. Then I do self-reflection in terms of location, play environment and whether children were interested in the activities. I also write down notes on the reflection column after every program of inquiry." In terms of successful practical steps, teachers shared how they work well with other teachers to implement small group activities or "corner times" and how they are able to accomplish all the tasks in three hours.

As for challenges, teachers expressed that they experience constraints to implementing more play because of the academic demands, such as writing and reading. Three of the eight teachers mentioned the varying abilities of the children as a challenge to implementing play. The interview findings of teachers have revealed that teachers do conduct self-evaluation in various forms and that they see working with others as the primary strengths to implement play in the curriculum. Their greatest challenges are addressing the different abilities of the children and the academic demands of the school. Although there were three responses which indicated the teachers practiced limited self-evaluation, the majority indicated they practice self-evaluation in some manner consistently. Therefore, both metacognitive assumed causes were not validated by the interview findings.

**Findings from Classroom Observation**

Two teachers were selected for in-class observations, one nursery class teacher with ten years of teaching experience and one upper class teacher with over twenty years of teaching experience. Each class observation was conducted during the small group activity time and inquiry learning time (which accounted for almost 60% of the daily schedule). Mostly, classroom observations were conducted to find support to validate the conceptual and procedural knowledge findings.

In terms of the procedural knowledge, both teachers were observed to assess whether they were able to guide the children towards accomplishing a task of the program of inquiry and learning about the concepts of that unit of inquiry. IB curriculum dictates certain transdisciplinary themes to be taught as units of inquiry. The methodology is for children to be guided towards understanding the lines of inquiry which are statements that have been set out to clarify the unit of study and define the scope of inquiry.

In the classroom observation session, the researcher observed how one teacher conducted an inquiry unit with the children. The trans disciplinary theme was “Sharing the planet” and the central idea to convey was that “water is important to us” and “we can use it in different ways”. The line of inquiry to be covered was the different ways that water can be used by examining its function; water exists in different forms by examining how it changes and the different ways to save water as children learn about shared responsibility. Teacher A started the lesson with some pretend play where children were asked to pretend making a raining sound. Teacher A taught the children a series of actions making a slushing sound with rubbing their hands together softly (pretending to be the beginning of small rain drops), hitting their lap with their hands (rain is picking up), stomping on the ground with their feet (to pretend violent rain), jumping up with a big loud clap (thunderstorm) and finally sitting down again quietly with rubbing their hands together softly (small droplets again). All throughout the actions, teacher A was explaining the rain cycle, how it started with little droplets and turned into heavy rain. Children were then asked to repeat the action with their eyes closed and follow the actions. Teacher A demonstrated her ability to elevate the level of play from what was random sound to a consistent pattern with soft and loud raining sounds in quick and slow tempo.

After that activity, Teacher A separated the class into four small groups with about eight children in each group for small group activities. One corner of the room was set up with two big buckets of water and plastic flowers held in Styrofoam and inside an inflatable water tub. Children were encouraged to scoop the water from the buckets using plastic pails and irrigate the flowers. They were learning the concept of different ways water can be used. In another corner, there were eight glass jars which were covered with a paper towel and some cotton balls on top of the paper towel. A jar of blue colored water was beside each of the covered jars. Children

were asked to use a squeeze pipette to suck the blue water up and release it on top of the cotton balls after which the cotton balls turned blue. When enough water had accumulated, saturating the paper towel and droplets of blue water can be seen dripping into in the empty glass jar. Teacher A skillful asked the children questions during the activity, “Oh wow, look at the blue cotton balls, What does it remind you of, Look at the sky outside what do you see?” One child replied, “Like the fluffy marshmallows in the sky”. The teacher replied, “Yes like marshmallow clouds in the sky, when it rains where does the rain come from?” One child replied, “Up in the sky, in the clouds” and the teacher replied, “Oh look! Water is coming out, just like the clouds in the sky”. In this short scenario, Teacher A did not intervene in the play episode except when some of the children had problems getting the water into the pipettes, otherwise, she was there to clean up a bit and ask more questions. In this short episode, it was observed that the children learned about where rain comes from and that water exists in different forms.

The teacher demonstrated the ability to elevate the level of play with questions and creating a play-based learning activity. The children were mesmerized with the water dripping out of the cotton balls, had fun with pipetting the water out of the jars and dropping the water on top of the cotton balls. Overall, in these two activities, the teacher facilitated the children to participate in self-initiated play, where they were experimenting and taking charge of the play process as constructors of knowledge. The teacher in the observation was able to elevate the level of play to guided play with questions and minimal intervention. Ultimately, children were able to understand the different ways water can be used and the learning objective of the different form of water and how it changed. The learning objectives were successfully transferred to the children using a planned “learn through play” activity. Hence, observation findings did not support the assumed cause that teachers lacked the procedural knowledge

involved with inappropriate intervention, elevating the levels of play and implementing a "learn through play" curriculum.

### Synthesis of Results and Findings for Knowledge Assumed Causes

Through the triangulation of survey results, interview findings and classroom observations, the data indicated that teachers of the Kindergarten lacked certain factual, conceptual and procedural knowledge.

Regarding factual knowledge, both of the survey results and interview findings revealed that teachers were not familiar with the exact time allocation for play and free-choice activities time as recommended by the EDB. Hence, the assumed cause was validated. Survey results indicated that Cantonese teachers knew of the recommendation better than teachers of other language groups perhaps because most Cantonese teachers were educated locally and received their teaching qualification in Hong Kong which could explain their familiarity with the local recommendation. The survey results and interviews confirmed that the teachers were not familiar with the definition of play-based learning and lacked the ability to identify when the children were playing by considering the characteristics of play, including the state of playfulness. Although teachers did give detailed accounts of what they felt were the characteristics in terms of the types of communication, internal motivation and engagement, none of the participants in the interviews were able to identify all of the documented characteristics. Survey results indicated that most teachers knew the different types of play. Teachers in the interviews described the different types of play frequently, therefore, the assumed cause that teachers were not familiar with the different types of play was not validated. Overall, among all the assumed causes for factual knowledge, Cantonese teachers knew more about the time allocation

recommendation of the EDB but English teachers seemed to be much more familiar with the definition of play and the characteristics of play.

Regarding conceptual knowledge, although teachers answered in the survey with confidence that they understood how principles of play emphasize the child as constructor of knowledge and that the benefits of play or guided play can help foster mathematical, literacy and social competence skills, teachers in the interviews offered contrary evidence in their understanding of the concepts in practice. This was especially true for mathematics and literacy when there was a mismatch of teachers' conception of playfulness using a play apparatus or simply SMARTboards for building Chinese characters as play. Interview findings also revealed that teachers are more didactic than they realized and what are intentions to promote play, may not necessary fits the definition of play for children. Hence, the assumed cause that teachers were not familiar with the concept of how principles of play help promote mathematical concepts and build literacy was validated by the triangulation of data.

Procedurally, teachers indicated in the surveys and the interviews that they were familiar with the skills to implement "learning through play", including elevating the level of play to meaningful focused learning. Teachers also demonstrated in the interviews and classroom observations that they knew how to use play to emphasize active learning in order to achieve learning objectives of their program of inquiry. This is perhaps the strength of the IB curriculum where teachers are acquainted with encouraging student's active inquiry and exploration that helps them to find the answers and facilitate the children's learning.

On the metacognitive level, no assumed cause was validated. Teachers in surveys and interviews indicated that they knew how to evaluate their strengths and challenges and that most teachers (80% in survey chose often and very often, 50% from the interview chose at least

weekly evaluation) consistently conducted self-evaluation to address problems and challenges in implementing learning through play.

Table 4 summarizes how the knowledge assumed causes were supported or not supported by survey results, interview findings and classroom observation records. The symbol Y indicates the statement/assumed cause was supported by the data gathered, whereas the symbol N indicates that the statement/assumed cause as not supported by the data gathered.

Table 4

*Summary of Validated Knowledge Assumed Causes*

| Knowledge Assumed Causes* | Supported by Survey Results | Supported by Interview Findings | Supported by Observations | Validated (Y/N) |
|---|---|---|---|---|
| (F) Teachers do not fully know the criteria of learning through play as prescribed by the Education Bureau | Y | Y | N/A | Y |
| (F) Teachers do not fully have the knowledge of the definition of play | Y | Y | N/A | Y |
| (F) Teachers do not fully know the common characteristics of play | Y | Y | N/A | Y |
| (F) Teachers do not fully know the different types of play | N | N | N/A | N |
| (C) Teachers do not fully know how play emphasize children as constructors of knowledge and how the interactive process provide a context for further learning | N | N | N/A | N |
| (C) Teachers do not fully know how the principles of play can help promote mathematical concepts | N | Y | N/A | Y |

Table 4, continued

| Knowledge Assumed Causes* | Supported by Survey Results | Supported by Interview Findings | Supported by Observations | Validated (Y/N) |
|---|---|---|---|---|
| (C) Teachers are not familiar with how principles of play can build literacy skills | N | Y | N/A | Y |
| (C) Teachers are not familiar with how principles of play fosters social competence and confidence | N | N | N/A | N |
| (P) Teachers are not familiar with the skills to/skills involved with implementing a "learn through play curriculum" | N | N | N | N |
| (P) Teachers are not familiar with how to use play to achieve the learning objectives of each unit | N | N | N | N |
| (P) Teachers are not familiar with how to use play as the means for transmission of teaching content | N | N | N | N |
| (M) Teachers are not familiar with how to evaluate their own strengths and challenges on implementing learning through play in the curriculum | N | N | N/A | N |

* Indicate if the category is Factual Knowledge (F), Conceptual Knowledge (C), Procedural Knowledge (P), Metacognitive Knowledge (M)

## Results and Findings for Motivation Assumed Causes

In the gap analysis, motivation is a critical factor in affecting an organization to achieve its goal (Clark & Estes, 2008). Schunk et al. (2009) identified three common indicators of one's motivation: active choice, persistence and mental effort. Motivation assumed causes which prevent teachers from reaching their goals were identified and assessed through surveys, interviews and classroom observations.

**Survey Results**

The survey contained nine items which were designed to investigate four motivation assumed causes. The relevant motivation issues were task value, self-efficacy and attainment value.

**Active Choice**. In examining how teachers can better incorporate more play-based learning, it is critical to examine whether the teachers are motivated to do it. An important factor is to gauge whether teachers experience a lack of extrinsic value before they choose to engage in the activities. Six survey questions on the survey using four points on the Likert scale were designed to assess teachers' extrinsic values.

***Children are learning through play***. One of the assumed causes that prevent teachers from engaging in more play-based learning is that teachers do not feel children are learning through play. Three questions were used in this connection: "I believe children can learn through play"(Q.17), "I believe play is just to fill-in time free time for children after they complete their assignment"(Q.18) and "I believe children learn faster through play activities" (Q.19). The responses were overwhelmingly that teachers believe that children can learn better through play. Respondents strongly agreed or agreed that children can learn through play (100%, mean=3.79, SD=. 40) and that children learn faster through play activities (95%, mean=3.46, SD=.62). Figures 16 and 17 display the survey results for questions 17 and 19.

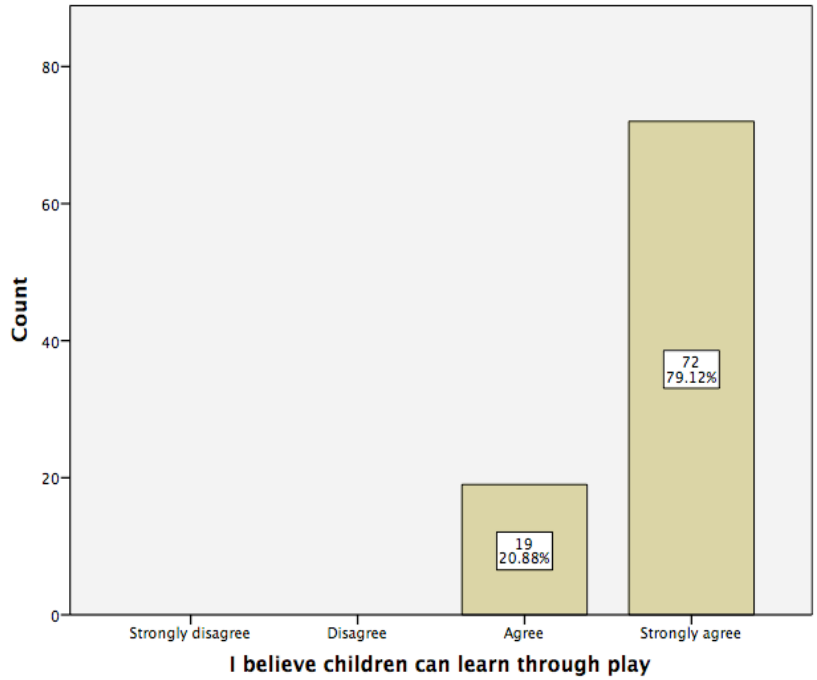


*Figure 16.* Responses to Question 17 About Children Learning Through Play

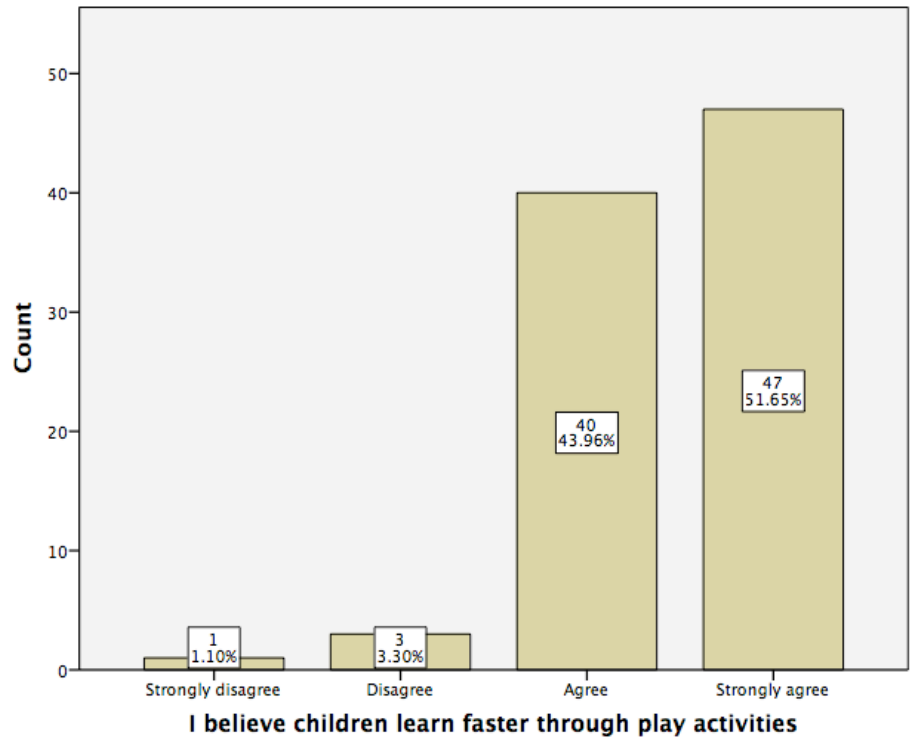


*Figure 17.* Responses to Question 19 About Children Learning Faster Through Play

It was also very positive to note that teachers (93%) in general disagreed that play is just to fill-in for free time only. Figure 18 sets out the survey results for question 18. Hence, the assumed cause that teachers do not believe children are learning through play as a motivational factor was not validated.

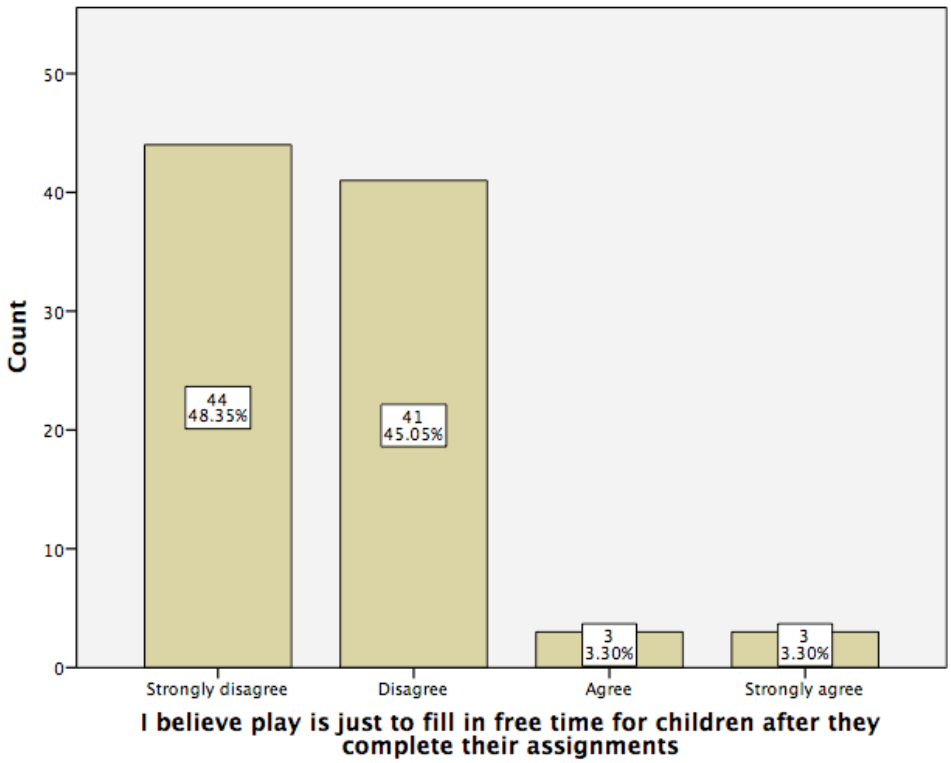


*Figure 18.* Responses to Question 18 About Play to Fill-In Free Time Only

***Play or learn through play can help children gain literacy and math skills***. Another reason why teachers may be reluctant to engage in implementing more play-based learning in the classroom is because they do not feel it is an effective pedagogy, especially for literacy and math skills. Hence, teachers were asked in a four-point Likert scale question whether they are knowledgeable in helping children to learn mathematical concepts and literacy skills through play activities. Almost all teachers strongly agreed or agreed that they are knowledgeable in helping children to learn mathematical concepts (91%) and literacy skills through play activities

(89%). Please see Figures 10 and 11 for results. In sum, results showed teachers felt play or learning through play can help children gain literacy and math skills and hence, the assumed cause was not validated.

**Mental effort: self-efficacy**. Once a task is started, motivation factors of mental effort and persistence come into consideration. Teachers could lack mental effort to implement more play or they might not feel confident lacking self-efficacy. As researchers have identified that a play-based curriculum incorporating learning through play is difficult to implement effectively and in an impactful manner (Wood & Bennett, 1997). Often teachers lack the experience and the opportunity to be proficient in identifying the interests of the children in class and negotiate them with the "object of learning".

Hence, teachers were asked in the survey whether they think that they are more knowledgeable about teaching through play activities compared to other traditional methods (Q.20) and whether they are confident in their ability to implement "learning through play" effectively and in an impactful manner in the classroom (Q.21). In both questions, most teachers (94%, n= 86, mean=3.16, SD=0.50)) and (94%, n=86, mean=3.11, SD=.46) responded that they strongly agreed or agreed with the statements. Therefore, the assumed causes that teachers don't feel that they are knowledgeable in teaching through play activities compared with other traditional teaching methods and that they do not have the skills to implement "learning through play" in the classroom in an impactful and effective manner were not validated. Responses to questions 20 and 21 are set out in Figures 19 and 20

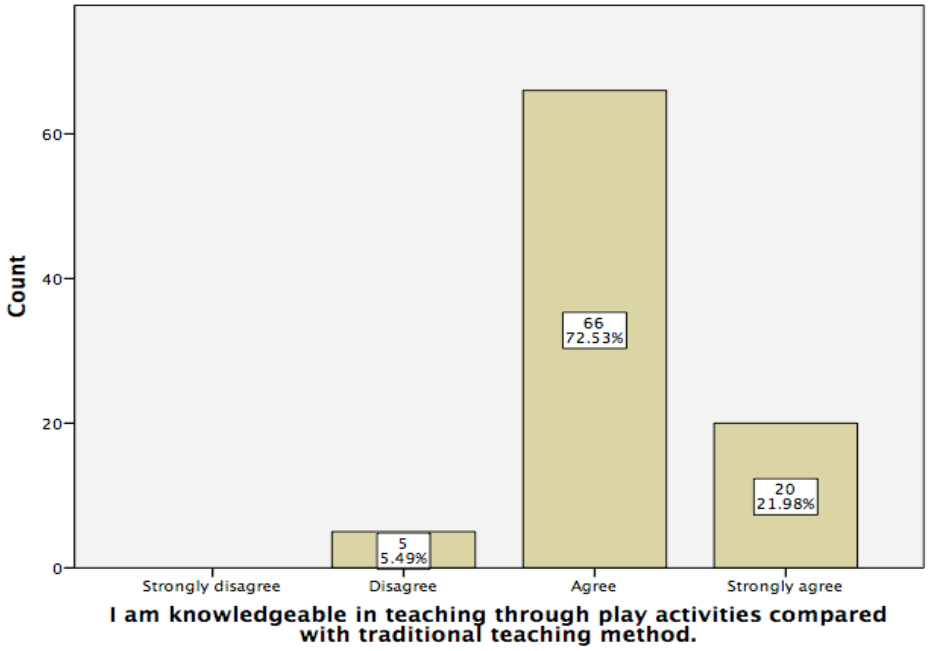


*Figure 19.* Responses for Question 20 About Teaching Through Play Activities Compared to Traditional Methods

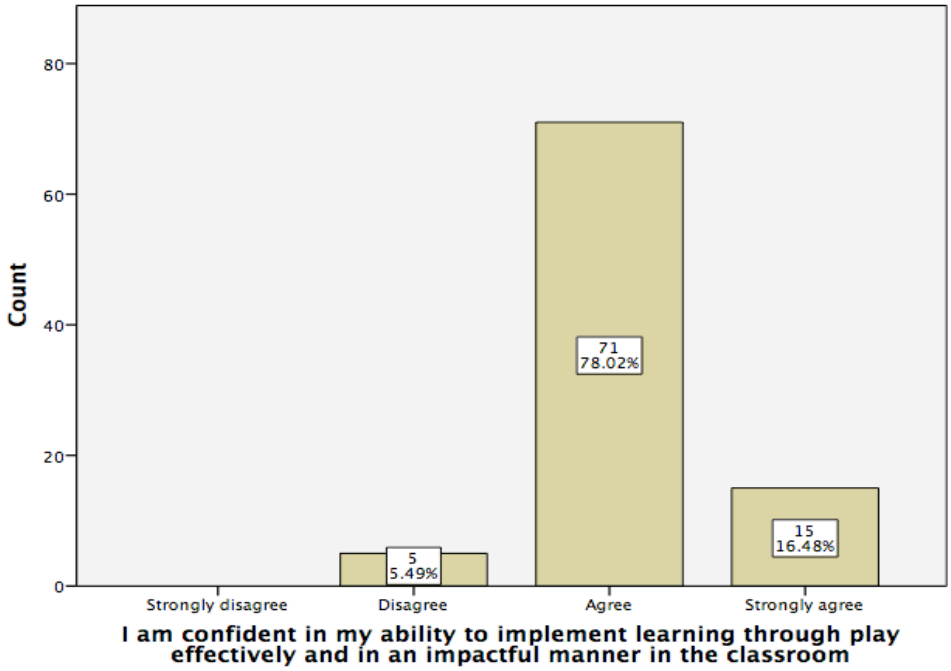


*Figure 20.* Responses for Question 21 About Confidence in Ability to Implement Learning Through Play

**Persistence**. The willingness of an individual to work hard and persist when tasks are difficult or challenging is an important factor in motivation and goal achievement. Participants were assessed on their attainment value and gauged whether they feel unappreciated when they want to promote more "learning through play" because parents value academic readiness and academic learning more than "play". Teachers were asked open-ended questions on "what are parent's general feeling regarding play and learning through play in the classrooms?"(Q.22) and "what are parent's expectation in terms of academic readiness and academic learning in the classroom?" (Q.23) Participants were assessed concerning the pressure parents assert from their feeling towards learning through play and academic readiness. Two questions were asked to assess the effect of the pressure from parents, "how often do parents directly ask you about their child academic readiness" (Q.24) and "whether you feel there are sufficient communication channels between teachers and parents to share learning objectives and recognition of the school's approach to children's learning?" (Q.31) This latter question was designed to assess whether teachers felt that there are sufficient open dialogue opportunities between parents and teachers so that parents can understand the issues surrounding "learning through play".

As for the open-ended question Q.22 most respondent's (55%) stated parents do not support play-based learning and do not understand play. Responses for this question were categorized as: (i) play is a waste of time. Playtime is just for fun; (ii) parents expect knowledge learning and results; (iii) parents have positive attitudes towards play but not necessarily a component of their child's learning or preparing them for primary school; (iv) parents support play-based learning partially but do not really understand it; (v) parents are enthusiastic about the concept of play-based learning and understand the benefits of play. From items (i) (play is a waste of time) to (v) (enthusiastic about play concepts and play-based learning), the degree of

preference for academic learning decreases and generally favors play more. In respondents' answers, 45 out of 81 teachers (55%) felt parents do not support and do not understand "learning through play". Survey results also indicated that teachers felt some parents may support play-based learning but generally parents do not understand it. When evaluating the data by sub-groups of grade level, it is interesting to note that the lower grade level teachers (pre-nursery and nursery) responded that parents are generally more enthusiastic about play compare to teachers of the older-age groups. 9 out of 17 pre-nursery teachers (52%) and 8 out of 14 nursery teachers (58%) felt parents are enthusiastic about play-based learning compare to 8 out of 22 lower class teachers (36%) and 11 out of 28 upper class teachers 9 (39%). Table 5 sets out the responses by teachers of different grade levels. There was also a direct difference in correlation between language teachers as 50% of English teachers felt parent's general feelings regarding play and learning through play is skewed towards knowledge learning and against play-based learning. Table 6 sets out the responses by teachers' language specialty.

Table 5

*Question 22 (What are parents" general feelings regarding play and learning through play in the classrooms? Responses categorized by grade levels)*

| | Play is a waste of time. Playtime is just for fun | Parents expects knowledge learning and results | Positive attitude towards play but not a necessary component | Support partially but do not really understand it | Parents are enthusiastic about the concept of play-based learning and understand the benefits | Total |
|---|---|---|---|---|---|---|
| Pre-nursery | | 4 (24%) | 2 (12%) | 2 (12%) | 9 (52%) | 17 |
| Nursery | 1 (7%) | 2 (14%) | 1 (7%) | 2 (14%) | 8 (58%) | 14 |
| Lower Class | 3 (14%) | 2 (9%) | 4 (18%) | 5 (23%) | 8 (36%) | 22 |
| Upper Class | 4 (14%) | 5 (18%) | 3 (11%) | 5 (18%) | 11 (39%) | 28 |

Table 6

*Question 22 (What are the parents' general feelings regarding play and learning through play in the classrooms? Responses categorized by language specialty)*

| | Play is a waste of time. Playtime is just for fun | Parents expects knowledge learning and results | Positive attitude towards play but not a necessary component | Support partially but do not really understand it | Parents are enthusiastic about the concept of play-based learning and understand the benefits | Total |
|---|---|---|---|---|---|---|
| English | 4 (20%) | 6 (30%) | 6 (30%) | 2 (10%) | 2 (10%) | 20 |
| Cantonese | 4 (9%) | 6 (13%) | 3 (7%) | 9 (20%) | 23 (51%) | 45 |
| Putonghua | | 1 (5%) | 2 (11%) | 3 (17%) | 12 (67%) | 18 |

In regard to question 23 concerning parent's expectation in terms of academic readiness and academic learning in the classrooms, teachers' answers were coded and categorized as: (i) happy learning environment and enjoy school. Children can learn through play; (ii) gain some knowledge and be able to tell parents at home and possess the right learning attitude, well rounded; (iii) gain some basic language and math skills at age-appropriate level - balance curriculum; (iv) preparing children for academic learning and to enter into a desirable primary school; (v) high expectation, lots of pressure on children's academic to exceed beyond their age group and often compare their child's progress with others. The answers were arranged in the order from less academic pressure for item (i) to most academic pressure for item (v). The majority of the teachers (46 out of 80, 58%) actually felt that parents do expect academic readiness or at least for their child to gain some basic language and math skills (mean=2.69, SD=.1.36). Thus, survey results validated that there are significant demands from parents for academic learning in the classrooms. Results also indicated English teachers felt the most

pressure from parents because eighteen out of nineteen English teachers (95%) responded that parents have high expectations or that preparing the children to enter into a desirable primary school was important. An analysis of variance showed that the effect of language specialty was significant, $F(2,77) = 23.56$, $p < .001$. Post hoc analyses using Bonferroni corrections showed that on the average English teachers experienced significantly higher parents' expectations ($M = 4.16$, $SD = 1.07$) when compared with Cantonese teachers ($M = 2.32$, $SD = 1.16$) and Putonghua teachers ($M = 2$, SD = .87), $p < .001$. Figure 21 and Figure 22 display the responses to question 23 based on teachers' language specialty and then based on grade level of respondents.

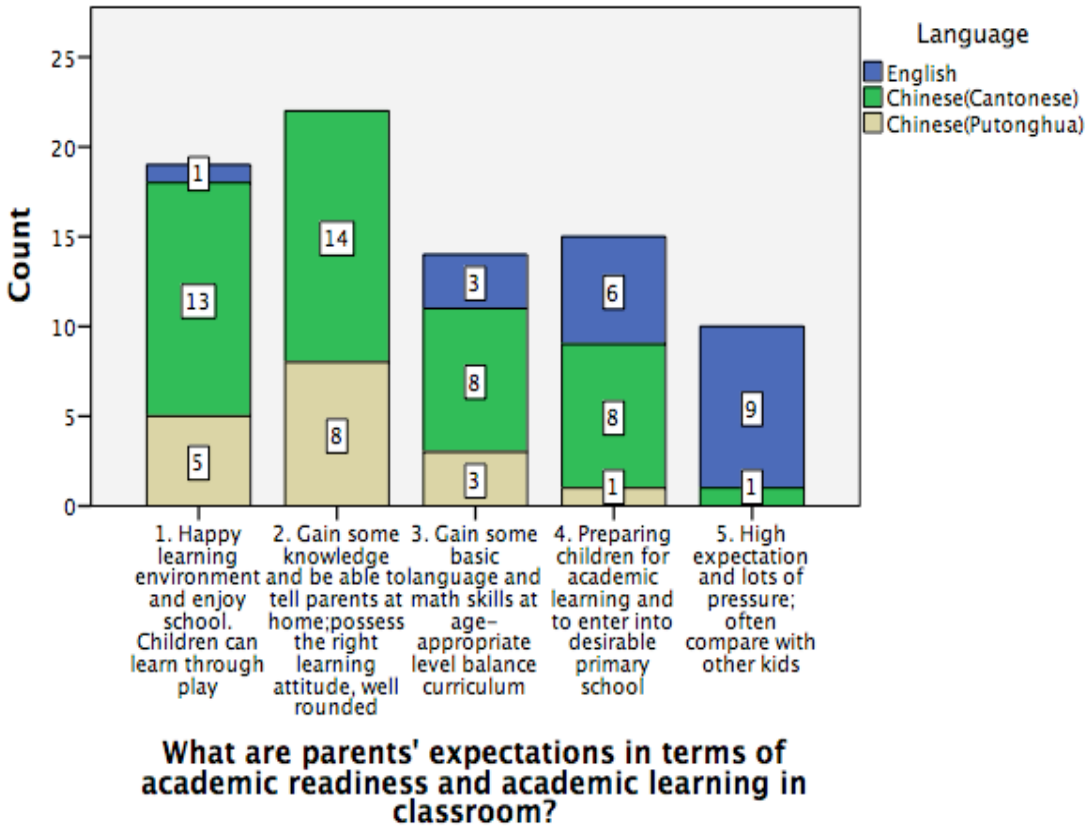


*Figure 21.* Responses to Question 23 Based on Language Specialty About Parents' Expectations

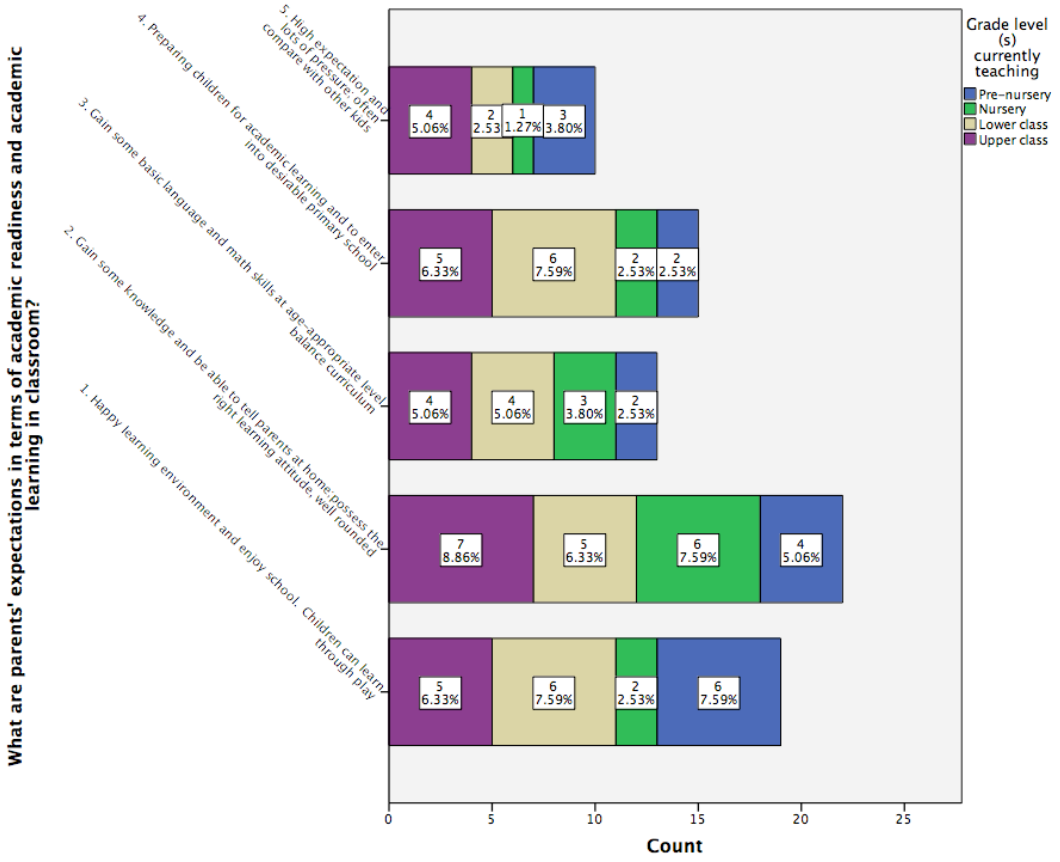


*Figure 22.* Responses to Question 23 Based on Grade Levels of Participants

In relation to parent's pressure on teachers for certain learning outcomes in the classrooms, 70 out of 86 teachers (81%) specified that they were asked about academic readiness at least once a week. Twenty-two respondents (25%) have replied that parents asked them two to three times a week. Figure 23 indicates teacher's responses to this question by language specialty.

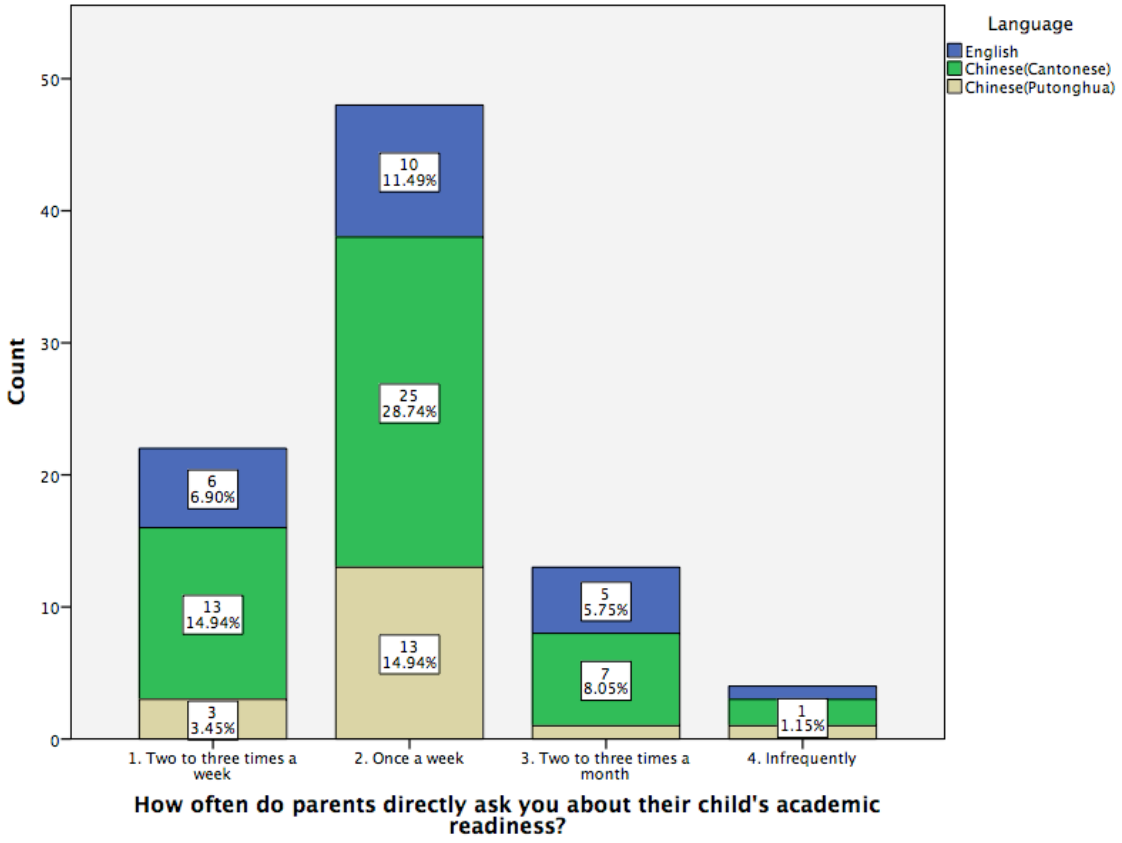


*Figure 23.* Responses to Question 24 About the Frequency of Parents Asking About Their Child's Academic Readiness 24 Based on Teachers' Language Specialty

In terms of sufficient communication channel, a majority 71 out of 90 teachers (78%) indicated that there are sufficient or more than enough communication channels between teachers and parents. Figure 24 indicates the results for question 31.

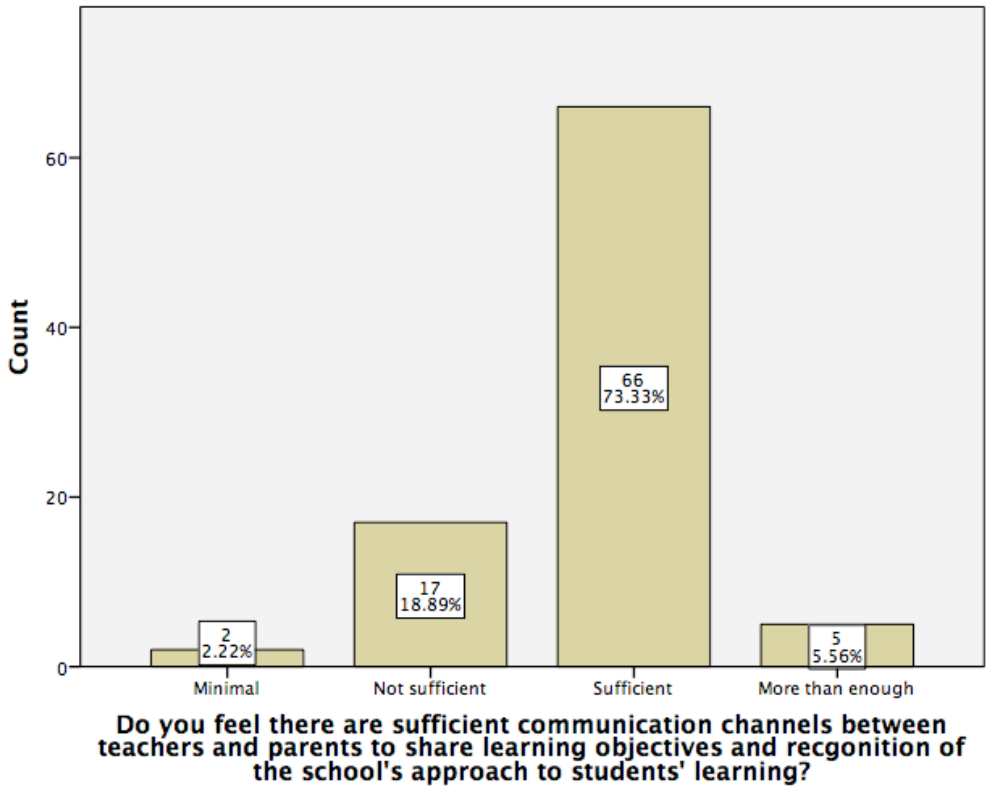


*Figure 24.* Responses to Question 31 About Communication Channels

From the survey results, it can be inferred that teachers do not feel appreciated as parents seem to only appreciate academic learning. From questions 23 and 24 data, it appears that parents do not support play-based learning. In addition, parents' expectations for their children's academic learning to be at a superior level along with the frequency that they ask about their child's academic readiness can create stress and ambivalence about play-based learning for the teachers. Survey results validated the assumed cause that teachers do not feel appreciated as a teacher since parents are critical because they value academic readiness and academic learning as opposed to play-based learning. Results also indicated that English teachers felt the pressure the most as a majority has expressed parents do not support play-based learning and that parents' expectation on academic learning is high.

**Summary of Survey Results for Motivation Causes**

In summary, only one motivation assumed cause was validated by survey results. The other three assumed causes will need to triangulate with data from the interviews. In general, the survey results validated that teachers do not feel appreciated when they want to promote more learning through play because parents only value academic readiness and academic learning. From the survey results, the assumed cause that teachers do not feel children are not learning through play was not validated because a majority of the respondents agreed that children can learn even faster through play and that play is not a waste of time. Survey results also revealed that teachers did not feel play is an ineffective pedagogy for math and literacy skills. Survey results also did not support that teachers lacked self-efficacy as they all felt confident in their ability to implement " learning through play" in the classroom effectively and in an impactful manner.

**Findings from Interviews**

Interview findings were very similar to survey results in supporting only one assumed cause. Interviewed participants were asked about motivational issues concerning the value in participating in the "learning through play" activity, their confidence in their ability to implement play-based learning and their attainment value for teachers to incorporate more play.

***Active Choice: Children learning through play***. To assess the assumed cause that teachers do not feel children can learn through play, teachers were asked "Do you feel you are making a difference in children's lives by getting them to do more guided play in the classroom?" Seven of the eight teachers concurred that they felt they are making a difference in children's lives by getting them to do more guided play. One commented, "We are making a difference because children enjoy play and they are learning without them realizing it." Another

one mentioned, “Learning through play equips children with inter-personnel relationships skills and social learning that we know will carry them through for the rest of their lives.”

Teachers were also asked “How would you rank ‘learning through play’ versus other teaching practices?” Seven out of the eight teachers replied that it was the preferred method as “the IB curriculum conducted by the school recognizes ‘learning through play’ and it complements well with making learning more hands-on and materialistic for the children.” The only teacher who felt it was not the preferred teaching practice because, “play is the preferred method except until the upper class when rote learning needs to take precedence to prepare them [students] for primary school.” From the interview result, it can be inferred that teachers felt children can learn through play and is the preferred teaching method. The assumed cause that teachers believe children are not learning through play was not validated by the interview findings.

***Active Choice: Play can help children gain literacy and math skills.*** The second assumed cause that teachers may not be as motivated because they do not feel that play can really help literacy and math skills (whereas traditionally these skills are reserved for rote learning) was assessed through the interview process. Overall, five out of eight teachers disagreed with the assumed cause and stated that play can advance mathematical skills and literacy. Of the five teachers who disagreed, four stated that play can advance literacy skills more than math skills as one teacher commented, “Of course when they role-play it is easy to get when they say the word of their action ‘I am jumping into the pool’ or vegetables they are preparing to buy ‘onions, carrots, tomatoes’ but it is a lot harder to get them to count the number of cars.” Also, grade-level also appears to make a difference as the two teachers who had doubt on whether play is effective were upper class teachers who felt “perhaps primary school math has

been pushed earlier to upper class level, so some worksheet typed based activities for math and literacy (especially Chinese literacy) may be what is necessary." Teachers also gave examples of how waiting in-line with bean bags can help promote mathematical concepts by learning about patterns and colors. In summary, although the majority opinion from the interviews did not support the assumed cause that teachers do not believe in play-based learning, when asked about teachers' beliefs in play as an effective teaching methodology for math and literacy skills, teachers of the upper classes hesitated to give their full support.

***Mental Effort: Self-efficacy.*** Teachers indicated in the survey that they are confident in their ability to implement "learning through play" effectively and in an impactful manner. In the interviews, teachers were asked "if you can give an example on how you can do it effectively?" Three teachers indicated that they felt confident but also stated it may be difficult for upper class teachers as they face more academic demands. The other five teachers expressed their confidence by describing their ability to set up a play environment and to promote opportunities for students to experience the learning process themselves. One teacher described "I may not be as confident as when first coming from a primary school background, but seeing how other teachers use every opportunity like waiting in line or lining up for dismissal in the playground to play games with the children, it made me felt there was a mission for guided play even when we are out in the hallways and when we rotate to different inquiry stations outside." Another teacher mentioned, "I play 'Open Sesame' with the children even on the slide to give them opportunities to learn about waiting, taking turns, asking question and being polite, so it is impactful." Teachers of all grade levels and different language specialties expressed confidence in their ability to implement "learning through play" effectively and in an impactful manner. Thus this assumed cause was not supported by majority of the interview data as discussed above.

***Persistence: Teachers do not feel appreciated***. The motivational assumed cause that teachers do not feel appreciated as parents only value academic readiness was assessed by interviews. Teachers were asked whether they felt there was pressure from the parents to conduct more academic learning instead of play and whether they believed that parents understood the benefits of play. Follow-up questions were asked if parents are overly concerned with academic readiness that they do not appreciate a teacher spending too much time on play. Findings showed that more teachers (five teachers) were experiencing pressure from parents than those who felt little or no pressure. Interview findings also supported the survey results which emphasized that English teachers tended to experience high academic expectations from parents along with their not understanding nor appreciating the value of play in the curriculum. One English teacher commented, "I was surprised the pressure is not as much as imagined but they do have expectations and they don't always understand play as a teaching style, so they ask for worksheets after school."

When asked whether parents do not understand play nor appreciate play, one English teacher commented, "There is a conflict among them [parents] between process and end goal…. They want children to enjoy school but at the same time they want them to get into good universities hence they ask you whether they know their ABCs and whether they can read in full sentences." Overall also it seems that pre-nursery teachers were found to be more sensitive to pressure as they anticipate there are more pressure at upper grade levels. One stated, "I believe there is less pressure in K1 but certainly more competition/comparison for K2 and K3." Whereas upper class teachers did experience less pressure from parents, "Parents seem to be in tune that play is important in an inquiry-based school." Nevertheless, when asked whether they feel parents are overly concerned with academic readiness so that they do not appreciate teachers

spending too much time on play, five out of eight teachers have expressed parent's lack of appreciation for spending too much time on play, as one teacher commented, "Happy is a basic requirement, but there are expectations for literacy, expectations for interview preparation, expectations for fluency in two or three languages, where inevitably they appreciate more worksheets to demonstrate their abilities." In conclusion, interview findings supported that teachers experienced a great deal of academic pressure from parents and that they do not feel appreciated for using more play-based teaching methods. Similar to survey results, English teachers seem to feel the pressure and lack of appreciation more than other language specialty teachers. In addition, they assumed that parents do not understand the purpose of play more frequently than other language groups.

### Synthesis of Results and Findings for Motivation Assumed Causes

Based on the synthesis of the survey results and interview findings, only one assumed motivation cause was validated. Surveys and interviews found that teachers do not feel appreciated as a teacher from the parents because they value academic readiness over play. Teachers felt a great deal of pressure because parents do not appear to value play as part of the curriculum. Results and findings showed that there is genuine pressure from parents to conduct more academic based learning rather than play. English teachers were most vocal in expressing their concerns. Pre-nursery teachers were sensitive to parents' pressure as they assumed that upper class teachers experience the most pressure from parents for academic achievement.

In reference to the assumed cause that teachers do not feel play or "learn through play" can help children gain literacy and math skills, the survey indicated that teachers do not feel play cannot help foster literacy and mathematical skills. However, in the interviews, two upper class teachers had doubts about whether play can foster literacy and mathematical skills when

worksheets seem to be more effective and necessary. Of the five teachers who disagreed with the statements, four indicated that play is not the preferred method to foster mathematical skill when rote learning may need to take precedence. Hence, although the interview findings did not support the assumed cause that play cannot help foster literacy and mathematical skills, there were doubts and some contrary evidence indicating a waiver in teachers' motivation to use play to foster literacy and mathematical skills. The other two assumed causes were not validated. These assumed causes include the participants' extrinsic value where teachers do not feel children are learning through play thus they resist implementing a play-based curriculum and self-efficacy where teachers are not confident in the skills necessary to implement "learning through play". A summary of how each motivation assumed cause was supported by survey results and interview findings are set out in Table 7.

Table 7

*Summary of Validated Motivation Causes*

| Motivation causes | Supported by Survey Results | Supported by Interview Findings | Supported by classroom observations | Validated (Y/N) |
|---|---|---|---|---|
| Choice, Extrinsic Value: Teachers do not feel children are learning through play thus they resist to implement a play-based curriculum in class | N | N | N/A | N |
| Choice, Extrinsic Value: Teachers do not feel "play" or "learning through play" can help children gain literacy and math skills | N | N | N/A | N |
| Mental Effort, Self-Efficacy: Teachers do not feel they have the skills to implement "learning through play" in the classroom as research has always shown it is difficult to do effectively and in an impactful manner | N | N | N/A | N |

Table 7, continued

| Motivation causes | Supported by Survey Results | Supported by Interview Findings | Supported by classroom observations | Validated (Y/N) |
|---|---|---|---|---|
| Persistence, Attainment Value: Teachers do not feel appreciated as a teacher since parents are unappreciative as they value academic readiness and academic learning | Y | Y | N/A | Y |

*"Y" indicates the assumed cause was supported by the data. "N" indicates assumed cause was not supported by the data.*

## Results and Findings for Organizational Assumed Causes

Achievement of a goal is often impeded because of organizational structures and settings. According to Ballymore and Goldenberg (2001), organizational assumed causes of goal achievement can be described by organizational cultural model and cultural setting. In the following paragraphs, organizational factors for the achievement of organizational goals were assessed by the survey and interview to determine which organizational barriers are preventing more play-based learning implementation in the classrooms at the Kindergarten.

### Survey Results

Nine survey questions were asked to assess the cultural setting and cultural model issues including issues relating to resources to build a play-based curriculum, the amount of administration work that is delaying efforts to incorporate more play, curriculum expectations and demands that make it difficult to incorporate more play, teacher's resistance to change culture and the culture of parents of a Confucian tradition exerting pressure for a more academic based curriculum.

**Resources**. Limited space and resources have always been found in Hong Kong to be barriers for implementation of play and play-based learning in the classroom (Lau & Cheng, 2010). Building a play environment requires a large amount of resources. Teachers were asked

if they believe they have enough resources to conduct and build play-based learning atmosphere (Q.25) and whether overall the school's environment is conducive for child-centered pedagogy (Q.26). Results showed that teachers (73 out of 93, 80%) agreed or strongly agreed that there are enough resources with a mean of 2.90 and a standard deviation of .54. Figure 25 displays the survey results for this question 25.

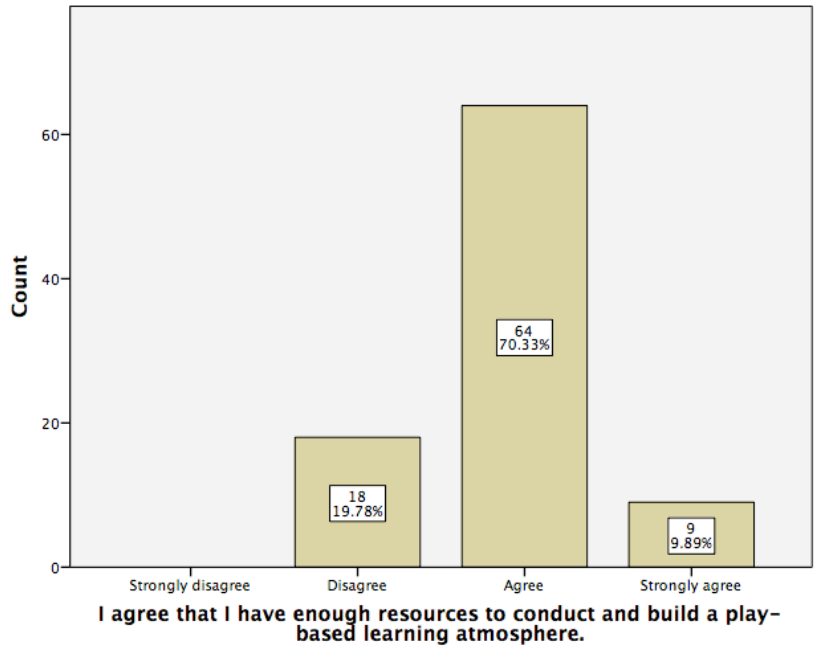


*Figure 25.* Responses to Question 25 About Enough Resources to Incorporate Play-Based Learning

In addition, teachers (81 out of 91 teachers, 89%) also felt the environment was conducive for child-centered pedagogy with a mean of 3.99 and standard deviation of .55. Figure 26 sets out the results for question 26. The results from both of these questions demonstrated that teachers do not feel they lack the necessary resources to build a play-based environment therefore the assumed cause was not validated.

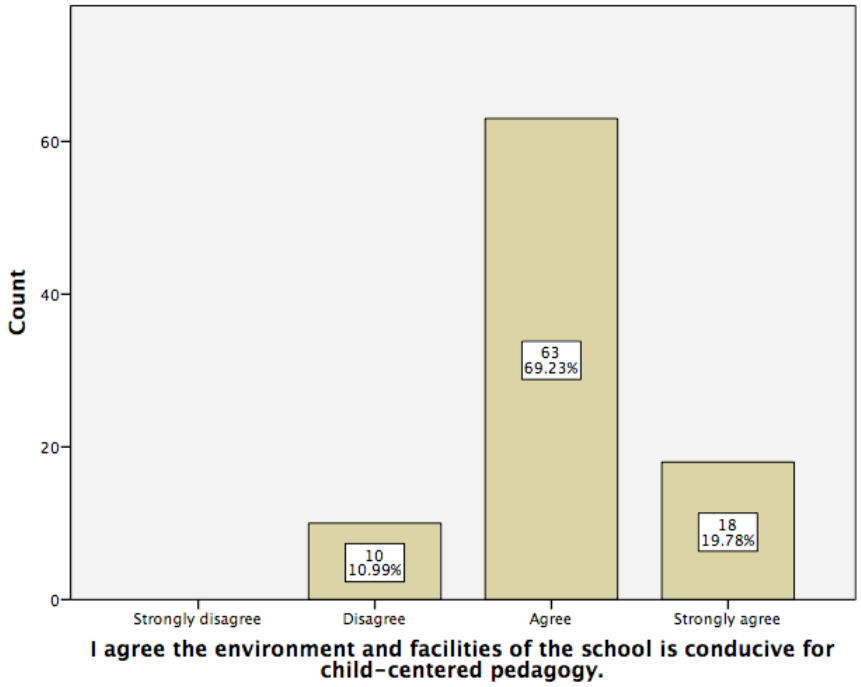


*Figure 26.* Responses to Question 26 About the Environment and Facilities for a Child-Centered Pedagogy

**Administration work and curriculum expectation**. Two organizational issues that could contribute to the organizational performance gap of incorporating more play in the curriculum are the large amount of administration work required by the teachers and curriculum expectations and demands from the institution. To assess the assumed causes, teachers were asked in the survey, " Do you feel there is too much administrative work (i.e. portfolio and assessment report writing), that you believe hinders your planning and effect to implement and make learning a better experience for the students, like incorporating more play?" (Q.30). A majority of the teachers (80 out of 90 teachers, 89%) felt there was too much administrative work which was hindering planning for more play. A mean of 3.21 with standard deviation of .063 indicated that most teachers strongly agreed or agreed with the statement. Hence, survey results validated the assumed cause that teachers felt there were too much administrative work

which hindered efforts to incorporate more play. Figure 27 sets out the responses to this question 30.

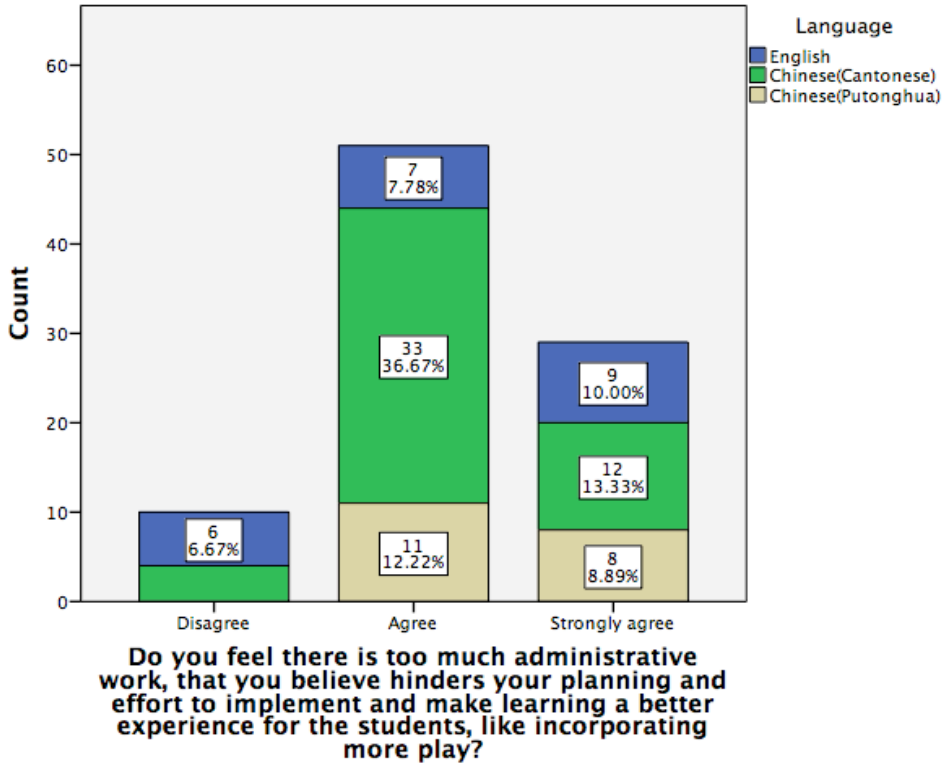


*Figure 27.* Responses to Question 30 About too Much Administrative Work to Incorporate More Play Based on Teachers' Language Specialty

In relation to curriculum expectations and demands affecting successful implementation of play-based learning, which a number of teachers had expressed this concern in scanning interviews, teachers were asked if they felt whether curriculum expectations and demands affect them to incorporate play into the curriculum (Q.32). Responses were coded and categorized by: not affected, affected but able to manage demands and incorporate play into curriculum, and much affected.

Almost all teachers (66 out of 71, 92%) felt and agreed that curriculum expectations and demands affected their ability to incorporate more play (mean=2.51, DS=.63). Nevertheless,

35% of the respondents stated that curriculum expectations and demands affected them but they were able to manage those demands and still incorporate play into the curriculum. Cantonese teachers being eighteen out of the twenty-five teachers who replied that curriculum demands affected them to incorporate more play but they were able to manage those demands. English teachers were among the largest group of teachers who agreed that curriculum expectations and demands affected their ability to incorporate more play. Figure 28 shows the survey results for this question based on language specialty.

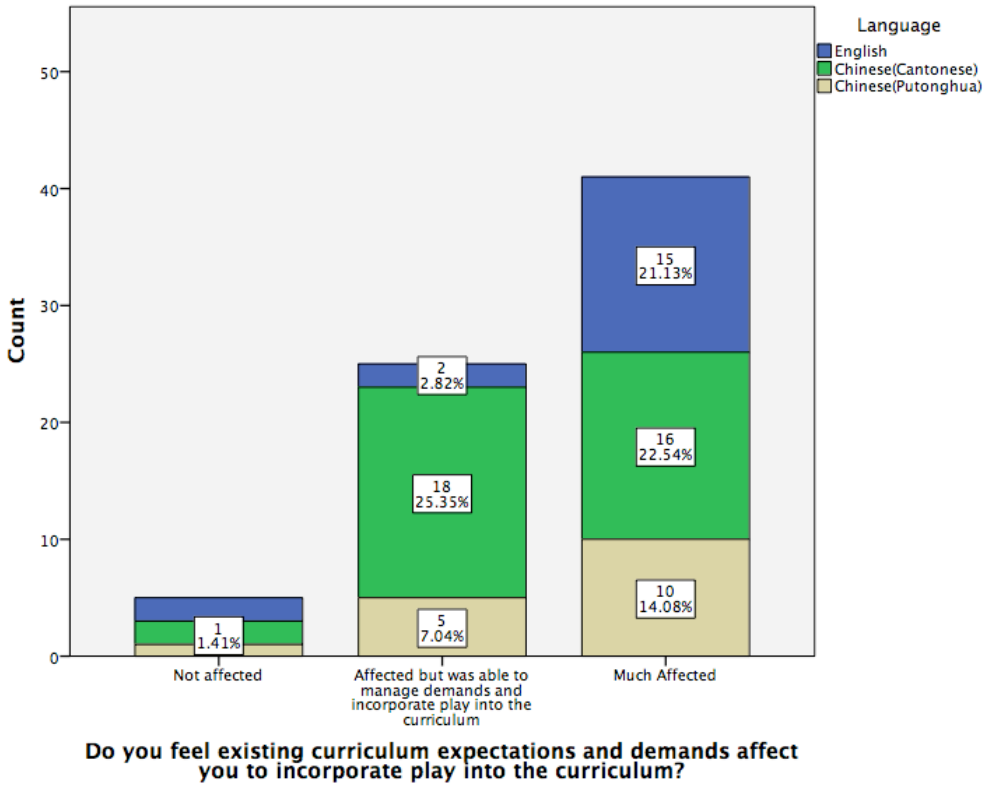


*Figure 28.* Response to Question 32 About Curriculum Demands and Incorporating Play Based on Teacher's Language Specialty

**Resistant to change**. One of the cultural setting assumed causes was that more experienced teachers (defined as those with thirteen or more years of experience in teaching) may be reluctant to change and tend to adhere to a more passive teacher-directed instructional style. The demographics of experienced teachers account are about 40% at the Kindergarten and

48% of the respondents. Therefore, they were asked in the survey to rank using a four-point Likert scale "I do not wish to try any new format with the curriculum such as 'learning through play'"(Q.27) and "I do not have faith in 'learning through play' as the preferred learning method."(Q.28). The respondents (94%, mean=1.62, SD=0.63) disagreed that they do not want to try the new format. Results also showed that (86%, mean=3.21, SD=0.51) of the respondents stated they have faith in "learning through play" as the preferred learning method. Therefore, teachers indicated they are not resistant to change, even those who are more experienced agreed that "learned through play" was the preferred learning method. The cultural setting assumed cause was not validated. Figure 29 displays the responses to question 27 about the resistance to change and Figure 30 displays the responses to question 28 concerning the faith in "learning through play".

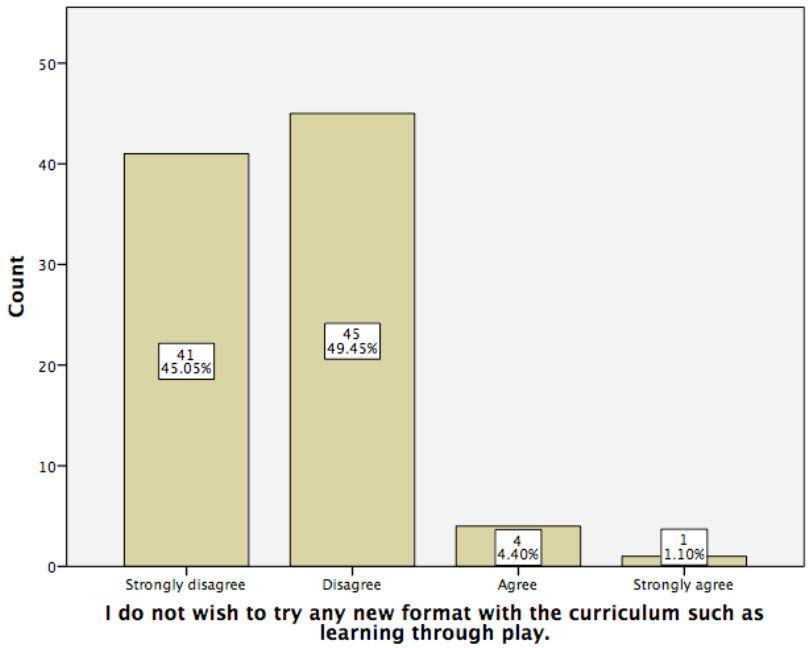


*Figure 29.* Responses to Question 27 About Resistance to Change

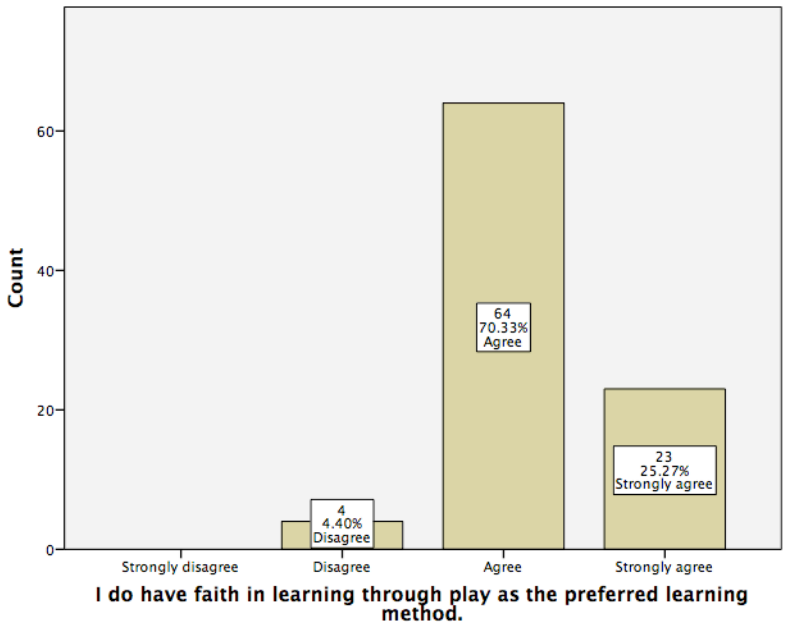


*Figure 30.* Responses to Question 28 About Faith in Learning Through Play as a Preferred Learning Method

**Parents' academic focused expectations**. Under the strong influence of the Confucian tradition, parents in Hong Kong expect that schools will teach academic skills early (Opper, 1994). An assumed cause relating to the organizational cultural model that could prevent teachers from incorporating more play is the pressure exerted by parents for more time spent in academic skill based learning. Three survey questions were asked to gauge teacher's pressure from parents: "What are the parent's expectation in terms of academic readiness and academic learning in the classroom" (Q.23); "How often do parents directly ask you about their child's academic readiness?" (Q.24) and "How would your rank which assets are most valued by parents?"(Q.29).

In relation to the first two questions, we have discussed the results in the motivation section and found that there are significant demands from parents for academic learning in the classrooms. In regard to parent's expectations for academic readiness and academic learning in

the classroom, a majority of the teachers (58%) agreed that parents do expect academic readiness or at least for their child to gain some basic language and math skills. The parents' pressure on teachers was verified by the findings as 70 out of 86 participants (81%) specified that they are asked about academic readiness at least once a week. Twenty-two respondents (26%, n=86) have replied that parents asked them two to three times a week.

In relation to the question which assets are most valued by parents, survey results indicated that academic skills of math and literacy were ranked in the first two choices with a significant difference from art and socialization skills. Figure 31 shows the distribution of rankings among each skill. Art skills was ranked by most respondents (59 out of 92, 64%) as the least valued. While 55 out of 92 teachers (60%) ranked math skills as the first two most valued assets for parents and 65 out of 92 teachers (71%) ranked literacy skills as the first two most valued assets for parents. When comparing the results by grade levels, it showed that teachers of lower and upper class tended to rate math and literacy skills higher as first or second choice more than Pre-nursery and Nursery class teachers. Please see Figures 33, 34, 35 and 36 for the results of the rankings by grade level.

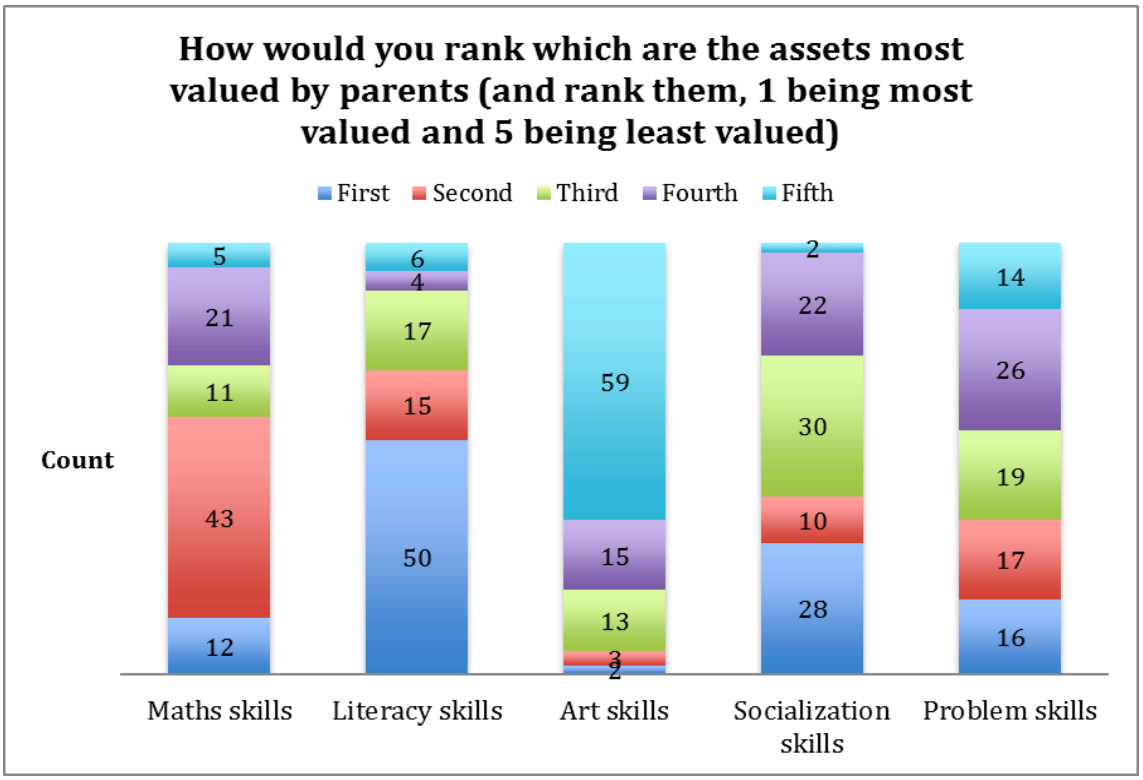


*Figure 31.* Responses to Question 29 by Number of Participants Ranking Each Asset

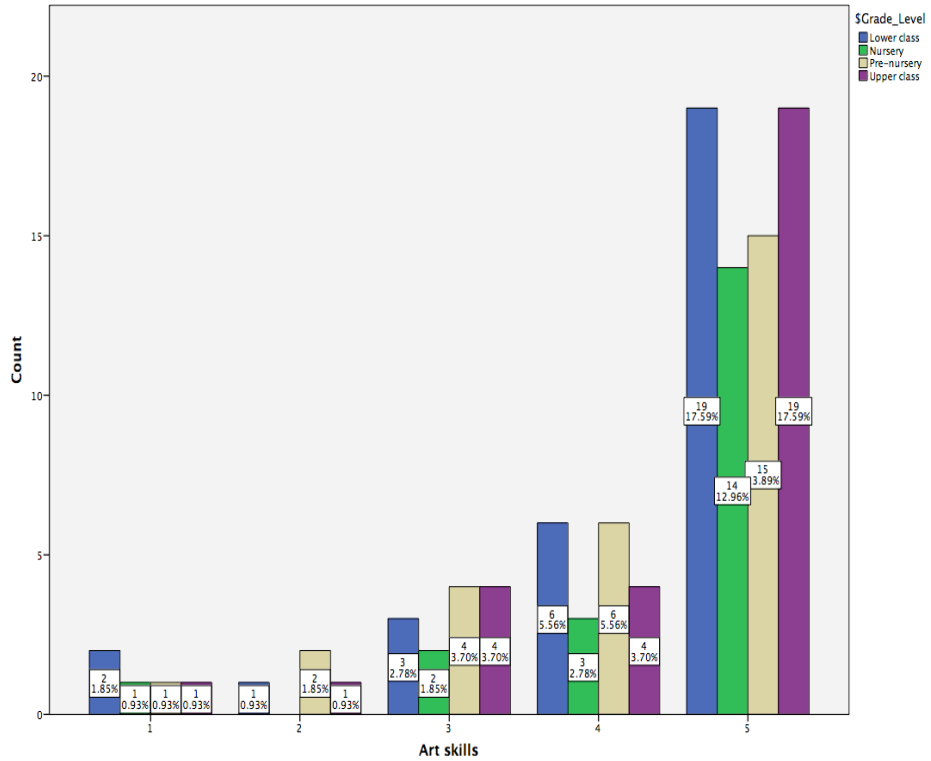


*Figure 32.* Responses to Question 29 Ranking the Importance of Art Skills Based on Teachers' Grade Level

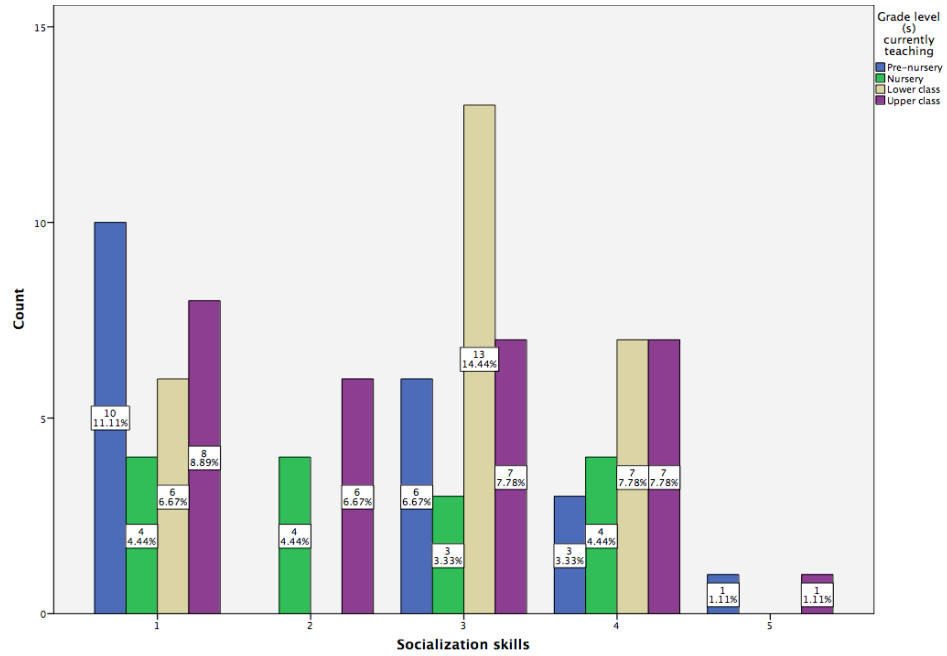


*Figure 33.* Responses to Question 29 Ranking the Importance of Socialization Skills Based on Teachers' Grade Level

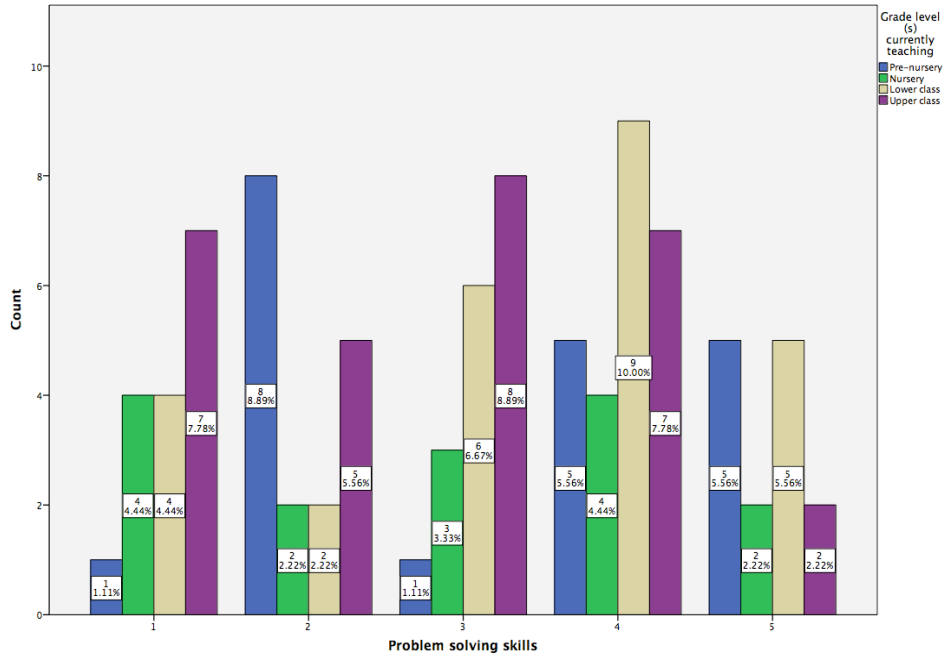


*Figure 34.* Responses to Question 29 Ranking the Importance of Problem Solving Skills Based on Teachers' Grade Level

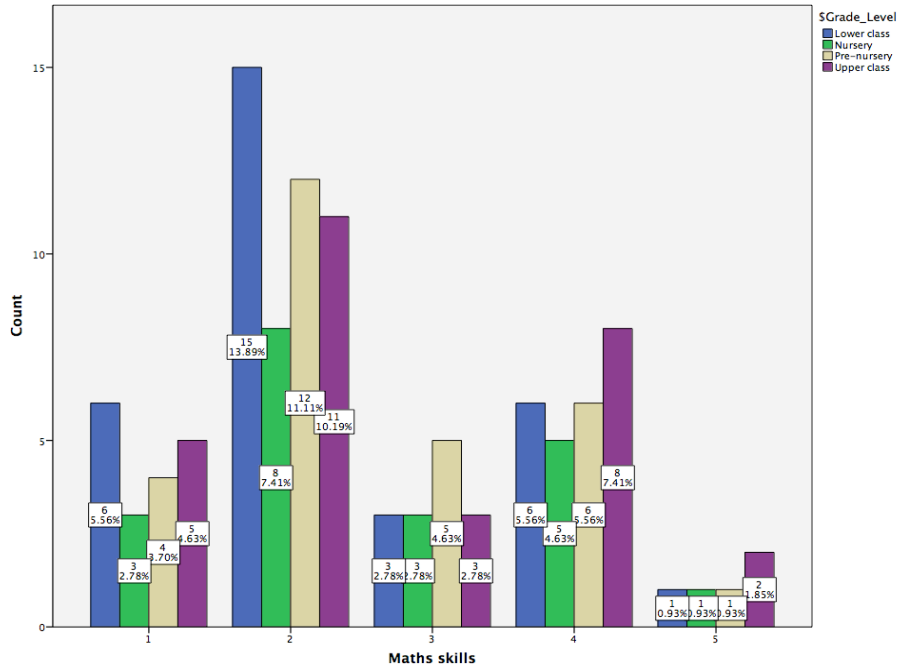


*Figure 35.* Responses to Question 29 Ranking the Importance of Math Skills Based on Teachers' Grade Level

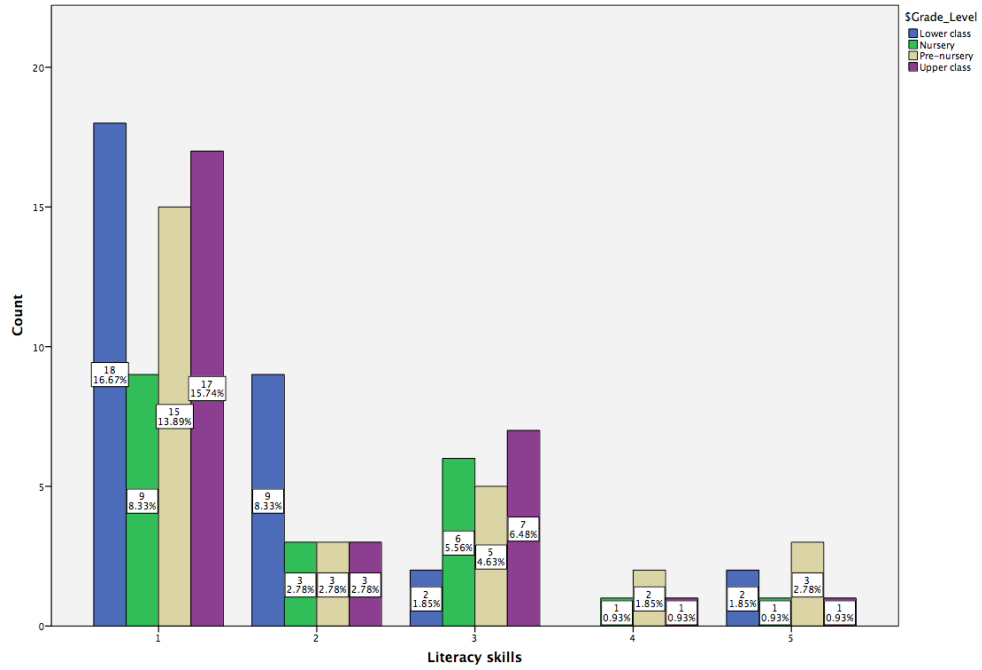


*Figure 36.* Responses to Question 29 Ranking the importance of Literacy Skills Based on Teacher's Grade Level

The survey data indicated that teachers felt parents requested or desired more academic learning than child-centered play. In sum, strong data supported the feeling of an overwhelming parents expectations on academic readiness, the pressure from the frequency on parents' demands on their children's academic readiness and the clear indication that math and literacy skills were most valued by parents. Hence, the cultural model assumed cause was validated as there is a strong indication that Confucian traditions are driving academically focused parents to exert pressure on teachers for a more academic skills based curriculum and even reward teachers to have this type of curriculum compared to child-centered play-based learning.

**Summary of Survey Results for Organizational Causes**

Of the five organizational assumed causes, three were supported by the survey results and two were not. For the two not supported by survey results, teachers indicated that there were enough resources to build a play-based learning atmosphere. A large majority felt that the schools' environment and facilities were conducive for child-centered pedagogy. Survey results also showed that there was no resistant to change culture as "learn through play" was indicated as the preferred learning method. Nevertheless, the survey results revealed that many teachers felt there was too much administrative work hence hindering efforts to implement more play. Also, the assumed cause that formal curriculum expectation and demands made it difficult for teachers to incorporate more play into the daily schedule was validated. In addition, survey results validated the explicit cultural model that parents' pressure for academic focused curriculum limit teachers from implementing a more play-based curriculum.

**Findings from the Interviews**

To understand in detail about organizational assumed causes, four questions were asked during the interviews with teachers as a follow-up to survey questions.

**Curriculum expectations and demands.** Although there was not a direct interview question assessing the assumed cause that curriculum expectations and demands made it difficult for teachers to incorporate more play into the daily schedule, many teachers have mentioned this point when asked, "What is the single most important reason you feel that is preventing you from incorporating more play in the classroom?" Six out of eight teachers referred to curriculum demands and time constraint to do all that is required by the curriculum as the single most important reason. One teacher commented that "there is just not enough time to implement all play-based activities, where inevitably language and literacy learning time, which is primarily academic or rote learning driven, will eat into the schedule and take up a portion of the children's time at school." One common theme of teachers' comments was "conducting an extra session on reading and writing is only made possible by reducing the time on exploration." Also, it appeared that other activities of the curriculum have affected play-based learning as explained by one teacher, "Time constraints mean that we are unable to focus on the play aspect of learning. Once a month we spend time making birthday party crafts and there is a lot of time spent on portfolio pieces, work to showcase to the parents and assessment that it leaves little time for playing in a three-hour day." As for curriculum demands, reading and writing academic training have been expressed by teachers as one concern, "literacy especially in two different languages is set in such a structural program that it leaves little room for children to learn through hands on play." Hence, interview findings supported the assumed cause that teachers felt curriculum expectations and demands affected incorporating play into the curriculum.

**Resistant to change culture**. In regard to teachers' culture to change, all eight teachers agreed in the interviews that " learning through play" is the preferred teaching method and they readily accept it as part of the curriculum. One teacher stated, "Because the school's emphasis is

on inquiry learning, teachers had to change to strike a balance between rote learning and play learning." Another teacher commented that "The whole school agrees that inquiry-based learning curriculum seems to draw the attention of the children better, thus promote much better motivated learning." Nevertheless, one teacher specified that "learning through play is the preferred teaching method, however it may vary with the upper class where they will inevitably do more rote learning for more academic preparation." Overall, the findings do not support the assumed cause that there is a resistant to change culture among teachers.

**Parents' academic focused expectations**. The survey results indicated that there was significant support for the assumed cause that parents from a Confucian tradition are heavily academic focused which exerts pressure for more academic skills based learning rather than a play-based learning model even at the pre-school level. In addition, strong academic expectations from parents who value academic skills more than art and socialization skills were evident from the survey results. In order to triangulate these findings and interviews were used. Participants were asked whether they thought that parents understand the benefits of play and whether the school is providing enough guidance to parents about "learning through play." In addition, it was proposed that if the school were to provide opportunities for the parents about the benefits of a play-based curriculum, would this serve as a solution to the pressure from parents about academic skills education?

As a motivation concern, it was established that parents are overly concerned with academic readiness that they do not appreciate a teacher spending too much time on play. As an organization issue, academic pressure turns into a cultural conflict with the "learning through play" culture, which the EDB and the Kindergarten are trying to promote. Therefore, when teachers were asked whether they believe parents understand play lays a good foundation for

future learning, six out of eight teachers replied that parents probably do not understand this concept. Even the two teachers who mentioned that parents appeared to understand the philosophy, also said that probably academic expectation at higher grade level will demand otherwise. Another teacher mentioned that "[parents] understand but with the looming pressure of entering primary school, some upper class parents may have certain academic expectations and will demand academically related activities." Of the teachers who thought that parents do not understand, they generally commented that "parents don't really understand the importance, they have an emphasis on outcomes and academic performance." One teacher made a point that "Parents are focused on reading techniques rather than allowing children to stay for exploration. They don't understand that play is where children learn and build their relationships." In the extreme, one teacher responded, "Parents only ask about what words or numbers that their children learn in school."

When teachers were asked about whether they believe the school was providing sufficient guidance to parents about "learning through play", five out of eight teachers stated that the school was not providing sufficient guidance. They mentioned that there is a need to teach parents more about how play makes relationship and to encourage play. One mentioned the school "can guide parents along the way with teaching them that even copybook exercise can be used in a way to be more interactive and playful." While those who believed the school was providing enough guidance reported that the "expanded unit reports is good way to communicate with parents and it helps them to further understand the benefits of play-based/inquiry-based activities happening in the classroom." Overall, interview findings supported and validated the assumed cause that the culture of academic readiness exerts pressure on teachers to provide academic skills based learning rather than incorporating more play.

### Synthesis of Results and Findings of Organization Assumed Causes

Of the five organizational assumed causes, three were validated by the survey results and interview findings.

In relation to the assumed causes of cultural settings, teachers indicated that the assessment reports required by the Kindergarten created large amount of administrative work which limited teachers' efforts to incorporate more play. In the survey, teachers demonstrated overwhelmingly that the administrative work leaves minimal time for planning for more play. This assumed cause was also supported by interview findings where teachers mentioned that the assessment report is comprehensive but takes too much preparation time. In relation to curriculum expectation and demands, survey and interview data supported that they have made it difficult for teachers to incorporate more play in the daily schedule. Several comments from the interview detailed how time spent on the demands of reading and writing was only possible by reducing the time on exploration through play.

The main concern which was overwhelmingly supported by survey results and interview findings was the culture of pressure from parents for more academic skills based learning rather than play-based exploration. Participants in both survey and interviews indicated that parents consistently regard literacy and math skills and academic readiness as top priorities. The survey and interview results also showed that pressure from parents are extreme in that a majority of the teachers (81%) are being asked about their child's academic readiness at least once a week. In terms of whether this culture is in conflict with the play culture, six out of eight (75%) teachers in the interviews believed that parents do not fully understand play and how it lays a good foundation for future learning. A majority of the teachers thought more communication from the school to the parents about "learning through play" would help improve the pressure from

parents to incorporate academic skills learning which creates a cultural conflict with play-based learning. The assumed cause was validated by survey and interviews. A summary of how each organizational assumed cause was supported by survey results and interview findings are set out in Table 8.

Table 8

*Summary of Validated Organizational Assumed Causes*

| Organizational Assumed Causes | Supported by Survey Results | Supported by Interview Findings | Supported by classroom observations | Validated (Y/N) |
|---|---|---|---|---|
| Cultural Setting: There are not enough resources to build a play-based environment | N | N | N/A | N |
| Cultural Setting: Many teachers have complained that the revised assessment reports have created large amount of administrative work and hence delaying other efforts like incorporating more play | Y | Y | N/A | Y |
| Cultural Setting: Curriculum expectations and demands have made it difficult for teachers to incorporate more play into the daily schedule | Y | Y | N/A | Y |
| Cultural Model: Teachers are resistant to change (implicit) as they are experienced and feel complacent in their ways | N | N | N/A | N |
| Cultural Model: Parents of a Confucian tradition are heavily academic focused and that exerts pressures or rewards for more academic skills based curriculum rather than a play-based curriculum | Y | Y | N/A | Y |

*"Y" indicates the assumed cause was supported by the data. "N" indicates assumed cause was not supported by the data.*

## Summary of Results and Findings

Survey results, interview findings and observation findings for each category of knowledge, motivation and organization were assessed for validation through triangulation of the data. Among the twenty-one assumed causes, nine were validated and twelve were not validated.

Regarding the category of knowledge and skills, five of the twelve assumed causes were validated. Factually, survey results and findings validated that teachers were not familiar with the exact time allocation for play and free-choices activities as recommended by the EDB. Survey results and interviews findings also confirmed that teachers did not fully know the definition of play and the characteristics of play, including the state of playfulness. Overall, among all the assumed causes for factual knowledge, Cantonese teachers knew more about the time allocation recommendation of the EDB but English teachers seemed to be more familiar with the definition of play and the characteristics of play. Regarding conceptual knowledge, interview findings found that teachers were not familiar with how principles of play help promote mathematical concepts and build literacy as interview evidence revealed that teachers' intention to promote play do not necessary fits the definition of play.

Of the four assumed motivation causes, only one was validated. Surveys and interview findings confirmed that teachers did not feel appreciated as a teacher from parents because they value academic readiness over play. Essentially, teachers felt a great deal of pressure because parents do not appear to value play as part of the curriculum. All the other three assumed motivation causes were not validated.

In regard to the category of organization, out of five assumed organizational causes three were validated by survey results and interview findings. For cultural settings, survey and interview findings revealed that large amount of administrative work, such as assessment reports

and portfolio preparation required by the Kindergarten, limited teachers' efforts to incorporate play in the curriculum. At the same time, data supported that curriculum expectations and demands made it difficult for teachers to incorporate play in the daily schedule. Both surveys and interview findings revealed that Cantonese teachers were especially confident that curriculum demands can be managed and yet play can still be incorporated. Regarding cultural model, findings overwhelmingly supported there was a culture of pressure from parents for more academic skills based learning rather than play-based exploration. That culture exerted pressure on teachers for more academic skills based learning and even rewarded teachers to implement more academic learning compared to child-centered play-based learning. A summary of all validated knowledge, motivation and organizational causes are set out in the following Table 9.

Table 9

*Summary of Validated Knowledge, Motivation and Organization Causes*

| Category | Validated Causes |
|---|---|
| Knowledge (Factual) | Teachers do not fully know the criteria of learning through play as prescribed by the Education Bureau |
| Knowledge (Factual) | Teachers do not fully have the knowledge of the definition of play |
| Knowledge (Factual) | Teachers do not fully know the common characteristics of play |
| Knowledge (Conceptual) | Teachers do not fully know how the principles of play can help promote mathematical concepts |
| Knowledge (Conceptual) | Teachers are not familiar with how principles of play can build literacy skills |

Table 9, continued

| Category | Validated Causes |
|---|---|
| Motivation (Persistence) | Teachers do not feel appreciated as a teacher since parents are unappreciative as they value academic readiness and academic learning |
| Organization (Cultural Setting) | Many teachers have complained that the revised assessment reports have created large amount of administrative work and hence delaying other efforts like incorporating more play |
| Organization (Cultural Setting) | Curriculum expectations and demands have made it difficult for teachers to incorporate more play into the daily schedule |
| Organization (Cultural Model) | Parents of a Confucian tradition are heavily academic focused and that exerts pressures or rewards for more academic skills based curriculum rather than a play-based curriculum |

# CHAPTER FIVE: SOLUTIONS, IMPLEMENTATION AND EVALUATION

After the identification of the validated knowledge, motivation and organizational causes in Chapter Four, the next step of the gap analysis is to present the evidence-based solutions to address the validated causes and narrow the performance gap. In particular, Chapter Five presents solutions for the Kindergarten and will address the second research question, "What are the knowledge and skills, motivation and organizational solutions necessary to make improvements in providing more child-centered, play-based pedagogy?" Discussion on the solutions will be based on applied research theories in order to demonstrate the relevance, applicability, and effectiveness of the solutions in closing the gap. In the latter part of the chapter, an integrated implementation plan is proposed to address the knowledge, motivation and organizational barriers. At the end, an evaluation plan is presented, which provides guidance for implementing the proposed solutions and assessments in order to achieve the expected outcomes.

As discussed in Chapter Four, the study found nine validated causes. Solutions are provided for all nine validated causes and categorized in themes of knowledge, motivation and organization. A synthesized solution is presented in the implementation plan which integrates all solutions for a significant impact to achieving organizational goals. A summary of the knowledge, motivation and organizational validated causes and solutions are set out in the following Table 10.

Table 10

*Summary of Knowledge, Motivation and Organizational Validated Causes and Solutions*

| **Validated Causes** | **Solution Principles** | **Implementation** |
|---|---|---|
| Knowledge (Factual): Do not fully know the recommendation of the Hong Kong Education Bureau, the common factors which define play and the characteristics of play | Reconnect with prior knowledge; Segmenting complex materials with schema; For those who completed training but need reminders – job aids | **First Staff Development Day & Suppmental Guide**<br>-Supplemental guide to explain recommendation, common factors which define play and characteristic of play<br>-Explanation session on recommendation especially for English and Putonghua teachers<br>-Supplemental guide with worked examples of assesement reports and portfolios<br>-Voice-over presentation with tips for efficiency for assement reports and portfolios<br>-Peer coaching w/Cantonese teachers handling curriculum expectations<br>- Senior administrators clearly communicating curriculum expectaions and changes |
| Organization (Cultural Setting): Large amount of administrative work (assessment reports and portfolios) and curriculum expectations hindering efforts to incorporate play | Segmenting and pre-training; Offloading cognitive load to other senses; Peer coaching to promote culture of collaboration; Constant & Candid communication to align culture with organizational goals | |
| Knowledge (Conceptual): Do not fully know how the principles of play can help promote mathematical and literacy skills | Learning conceptual knowledge needs to involve all cognitive processes not only retention (understanding, applying, evaluating, creating) | **Play workshop**<br>-where teachers get to experience being constructors of knowledge themselves by playing with open materials and by participating in group play with emphasis on math and literacy skills<br>-self-reflection session and group sharing session to build identity with play |
| Motivation (Persistance): Lack of attainment value as teachers do not feel appreciated for spending time on play | Addressing human needs for competence, relatedness and autonomy | |
| Organization (Cultural Model): Culture of heavily academically focused parents | Constant & candid communication to align culture with organizational goals | **Casual Breakfast Meeting**<br>– opportunity to share and relate the benefits of "learning through play" |

## Solutions for Knowledge and Skills Causes

There were five validated causes relating to the gaps of knowledge and skills. As highlighted by Andersen and Krathwohl's (2001) knowledge framework, there are four types of knowledge including factual, conceptual, procedural and metacognitive along with six dimensions of cognitive domains consisting of remembering, understanding, applying, analyzing, evaluating and creating. Two types of the knowledge, factual and conceptual, and six dimensions of cognitive domains will provide guidance for developing solutions to the validated causes.

### Factual Knowledge Solutions

Survey, interview, and observation findings confirmed that teachers were not familiar with the specific recommendation of the EDB for the amount of time allocated for play and free-choice activities. Teachers also demonstrated that they were not familiar with the definition and the characteristics of play, which are important concepts for the teachers to identify and understand in order to apply play in practice. The six dimensions of cognitive processes are hierarchical in that each dimension is a prerequisite for the next (Anderson & Krathwohl, 2001). Thus, in order for teachers to apply their knowledge on the definition of play and the characteristics, it is important for them to remember and understand them first. Therefore, in order for teachers to incorporate more play, they have to first be able to readily identify if the children are indeed playing and hence increasing their factual knowledge.

In order to address these factual knowledge gaps, teachers will need to gain concrete knowledge of the recommendation from the EDB as well as the definition and characteristics of play. There are a number of ways to handle complex materials so that the amount of essential processing can be managed efficiently. Mayer (2011) suggests three evidence-based approaches,

(i) segmenting complex material into meaningful parts, (ii) providing learner with relevant prior knowledge (pre-training) for the intrinsic load to be managed and (iii) offloading some of the visual material to the auditory channel or modality. In situations where teachers are not familiar with the definition and characteristics of play, providing a schema and organizing the information in another format may assist teachers in remembering all the information. As Mayer (2011) has described, meaningful learning occurs when learners engage in cognitive process of organizing where by techniques are used for providing a signaling effect, such as outline, headings and pointer words, etc. According to the author, meaningful understanding occurs with connection to prior knowledge, allowing an individual to create a cognitive system to learn and understand additional information (Mayer, 2011). In a situation where experts who have completed training and need reminders about how to implement what they have learned, Clark and Estes (2002) have suggest job aids.

One of the recommended solutions would be to distribute a supplemental guide to the curriculum guide as a job aid during "Staff Development Day" hosted at the beginning of the year. The supplemental guide would incorporate the recommendation of the EDB, the definition of play, the six characteristics of play and the qualities of the state of playfulness of a child. It is believed that teachers, especially Cantonese teachers who are trained locally and have studied this kind of factual knowledge as part of their qualified kindergarten teacher degree, would be able to use the supplemental guide to connect with their prior knowledge. Since English teachers were not as familiar with the specific recommendation of the EDB, a dedicated section in English should set out the salient features of the recommendation and the "Guide to the Pre-primary Curriculum".

**Conceptual Knowledge Solutions**

Teachers in the survey indicated that they were very familiar with how the principles of play, which emphasize children as constructor of knowledge and how the interactive process provides context for further learning. Nevertheless, during the interviews, when asked about the principles of play and how play can help foster mathematical and literacy skills, participants gave examples that did not express the concept of children as constructors of knowledge learning from who learn from interactive experiences. Doubts were expressed by the teachers about whether the principles of play can achieve mathematical and literacy skills. Conceptual knowledge cannot just be learned by simply explaining the concepts. To close this knowledge gap, it is suggested that teachers become "constructors of knowledge" similar to the way children learn through experiencing hands-on play as a solution.

Researchers indicated that conceptual knowledge, knowledge of relationships and understanding, cannot be learned by rote. It must be learned by thoughtful, reflective mental activity (Mayer, 2002). As elaborated by Mayer (2002), meaningful learning can only be viewed as learning in which learners seek to make sense of their experience. In meaningful learning, learners are engaged in active cognitive processes, such as paying attention to relevant incoming information, mentally organizing incoming information into a coherent representation and mentally integrating incoming information with existing knowledge (Mayer, 2002). The relevant cognitive processes involved should be those that go beyond retention or remembering but by transferring such as understanding, applying, analyzing, evaluating and creating. These processes are ways learners can actively engage in the process of constructing meaning.

Therefore, the solutions necessary for teachers to gain better conceptual knowledge is to learn first-hand the principles of play by constructing knowledge from participating in a teacher

only “play workshop”. Self-active play workshops were found by researchers and practitioners as an effective learning strategy as they apply constructivist principles to create a learning community in which adults build their own knowledge through hands-on play, reflect on their play experience, and collaborate with peers (Nell & Drew, 2013).

The goal of the workshops will be for teachers to reinforce the concept of play with emphasis on children as constructors of knowledge and to experience the benefits of the interactive hands-on learning process whereby they can better transfer knowledge to children in the classrooms. During the workshops, teachers will be asked to participate in solo play and group cooperative play where they can explore how open-ended materials can be used to promote math and literacy skills and concepts. The workshop objectives are for participants to: (i) engage in quality hands-on play experience using open-ended materials; (ii) construct, implement and evaluate approaches to teaching; (iii) deepen their understanding of the role as constructor of knowledge and materialize those concepts in the classrooms to foster math and literacy skills; and (iv) strengthen teachers’ vision of themselves as play advocates.

## Solutions for Motivation Causes

The only validated motivation assumed cause was that teachers did not feel appreciated when they provided more learning through play in their classrooms, meanwhile parents appeared to value only academic readiness and academic learning, which resulted in a lack of motivation for the teachers. The teachers became caught in the issues of “attainment value” and persistence.

### Attainment Value Solutions

An important motivational principle is that the more an individual values an activity, the more likely they will chose, persist and engage in it (Rueda, 2011). It is important for people to be considered as valuable contributors to their social groups and institutions. Researchers have

conceptualized “attainment value” in terms of the needs, personal interests, and personal values that an activity fulfills (Eccles & Wigfield, 2002). The attainment value an individual attaches to an activity and the desire to perform the task reflect that person’s self-image while being central to their self-definition. If teachers do not understand the value in incorporating more play, they will not persist in the activity. Autonomy or being able to feel responsible for an individual’s behavior and their goals support building attainment value (Eccles & Wigfield, 2002).

In this connection, studies suggest addressing the human needs for competence, relatedness and autonomy as the best solutions to influence attainment value (Eccles & Wigfield, 2002). In the case of the teachers at the Kindergarten, the issues of teachers’ belongingness and teachers’ autonomy are of special concern. One strategy to solve these issues is to provide tasks, materials, and activities that are relevant and useful to teachers, allowing for some personal identification with the organization (Clark & Estes, 2008). Cooperative and collaborative groups allow opportunities for attaining both professional and social goals along with helping teachers to identify with play-based pedagogy. Hence, teachers participating in an all teacher play workshop can enhance this identity of the organization by sharing with peers the motivation behind play and the content of their experience. At the same time, cooperative play can be viewed as an opportunity to accomplish a task where teachers experience what the children experience in their classrooms, such as discussion, negotiation, and compromise. In large-group discussion sharing sessions, teachers can share the relevance of the workshop to their work with children in the classroom, again ensuring that the participants understand the importance of play in the classroom. Finally, teachers will experience during the workshop their own behavior in solo play where they will experience being the constructors of knowledge themselves and being empowered with the feeling responsible for one’s behavior.

## Solutions for Organizational Causes

Three organizational causes were validated by survey results and interview findings. In relation to cultural settings, participants demonstrated that the assessment reports and portfolio reports created a large amount of administrative work which that hindered their efforts to incorporate more play. Also, in relation to cultural settings, curriculum expectations and demands were found to have made it difficult for teachers to incorporate more play in the daily schedule. In relation to cultural models, data validated the assumed cause that parents of a Confucian tradition are heavily academically focused and that exerts pressures or rewards to create a culture model for more academic skills based curriculum rather than a play-based curriculum. Organizational solutions are drawn from solution principles of knowledge and motivational issues. Strategies of cognitive processes are also discussed.

### Cultural Settings: Administrative Work

Regarding teachers finding too much administrative work in assessment reports and portfolio reports, strategies from cognitive load theory are relevant to encourage learners to optimize intellectual performance, such as decreasing extraneous cognitive load by providing a worked example or reducing redundancy (Kirschner, 2002). The organization can encourage these strategies to help teachers with too much administrative work in assessment and portfolio reports. In addition, off loading some visual materials to auditory channel (modality) will also help to decrease cognitive load (Mayer, 2011). In the case of the Kindergarten, administration can reduce teachers' cognitive load by reducing the time to fill out the assessment report with worked examples. Also, teachers can be encouraged to manage assessment and portfolio work daily in order to segment complex materials into manageable parts. A voiceover presentation

addressing common problems with efficiency suggestions from head teachers can help to change to the modality mode taking advantage of the auditory channel recommended by the experts.

**Cultural Setting: Curriculum Expectations and Demands**

In relation to curriculum expectation and demands hindering efforts for planning more play, the relevant solution strategy is for the organization to align organizational culture to organizational goals. Social cognitive theory emphasizes goal setting importance as it identifies desired outcomes so that individuals can plan accordingly to achieve those outcomes. Having clear communication of an organization's performance goals and plans helps to align organizational culture with organizational policies and goals (Clark & Estes, 2008). Communicating constantly and candidly to those involved about goals, plans and progress is also an effective measure to enhance performance. Clark and Estes (2008) found that good communication promotes trust, helping individuals to adjust their performance to accomplish goals. Ultimately, senior management at the Kindergarten will need to make a commitment to organizational changes. Studies of effective organizational changes have shown the need for the vision and commitment of upper management to be communicated to everyone with visible management involvement in the process (Clark & Estes, 2002). Peer coaching is also relevant as a solution where it fosters a culture of collaboration along with the necessary social support (Swafford, 1998).

In view of the above, curriculum goals should be introduced to teachers using clear and concise communication concerning the organization's goals for academic skills learning to be balanced with more guided play during the small group activity times. Also, findings indicated that some upper class teachers felt academic demands were higher for the upper class curriculum. Therefore, curriculum goals clarification can be organized into grade levels where

specific guidance for upper class teachers would demonstrate how to incorporate guided play to meet academic expectations. Since Cantonese teachers were especially confident that curriculum demands can be managed and yet play can still be incorporated, Cantonese teachers can peer coach other language teachers to adapt curriculum demands and incorporate more play. There is also a need for a strong commitment on the part of senior administrators of the Kindergarten to clearly communicate expectations of the curriculum, perhaps by grade level. This would be beneficial at the beginning of the year when teachers meet for the new schedule. The meeting would be an opportunity for the organization to communicate changes, such as goals for grade level curriculum, balancing parents' expectations, and developing appropriate pedagogy.

**Cultural Model: Parents' Academic Focused Expectations**

In order to mitigate the strong academic focus of parents that create much pressure and stress for the teachers, the organizational strategy to solve this issue could be to treat the issues as knowledge gaps and use similar solutions as discussed in the above knowledge section. At the same time, constant and candid communication of goals relevant to the stakeholders to align culture with organizational goals as discussed above are important.

One of the solutions would be to engage parents in a casual meeting to further discover the benefits of the play-based curriculum and how play can be integrated into the curriculum to foster mathematical and literacy skills. Findings indicated that a majority of the teachers thought more communication from the school to parents about "learning through play" would help improve the pressure from parents to incorporate academic skills. Research indicated that parent-teacher communication has a positive effect on parents' perspective of their children and their involvement, which in turn has a positive effect on their children's interest in learning (Ames, 1993). Some studies suggested that parent-teacher conferences are not an effective form of

communication because often the perception of a teacher holding "official evidence" of a student's achievement hinders a parent's active participation (Graham-Clay, 2005). Hence, it is suggested that communication be more informal where teachers and parents can communicate in a less teacher-directed format with sharing opinions from both sides. A parent-teacher breakfast meeting is suggested where teachers can participate in group meetings to share their experience in implementing various teaching and learning strategies, like play-based learning. The objective is to provide an informal channel to build parental confidence through partnership. Meetings could involve teachers conducting an informal presentation with perhaps videos of students in class playing and learning in order to help parents to visualize the principles of play and how play-based learning can promote mathematical and literacy skills. Head teachers could share their experience as parents would be invited to raise questions at any time and share their expectations.

## Implementation Plan

As discussed above, various solutions are offered to address the gaps created by validated causes in themes of knowledge, motivation and organization. Many of the solutions can be combined and implemented together in practice. The following describes the integrated implementation plan which will be conducted in three stages: (i) Supplemental Guide and First Staff Development Day; (ii) Play Workshop Training; and (iii) Parent-teacher Breakfast Meetings.

### Stage One: Supplemental Guide and First Staff Development Day

At the start of each academic year, the Kindergarten will host a "Staff Development Day" for the whole organization where the yearly curriculum handbook will be distributed. Usually the principals at the school address the staff concerning new programs, the general calendar of

events, and any new administrative measures. The first stage of the implementation plan is to use this opportunity to provide a supplemental guide for teachers with detailed information of the EDB's recommendations, in addition to the details of the definition and the characteristics of play. Salient features of the recommendations can be highlighted in a separate explanation session with English and Putonghua teachers since most of the English and Putonghua teachers indicated in the survey that they did not have as much prior knowledge as the Cantonese teachers.

At the same time, the supplemental guide should also contain worked examples of assessment reports and portfolio reports with a link to a brief voice-over presentation or demonstration on how the reports should be filled-in and assembled efficiently. Head teachers can provide some guidance on user-friendly tips and methods to segment the preparation work on a daily basis so the work is not left until the last minute. Senior administrators should also make an announcement at the Staff Development Day in relation to the Kindergarten's commitment to a play-based learning curriculum. If there are changes to the curriculum, it should be explained that emphasis on math and literacy skills can still be conducted through play activities and inquiry-based activities. Special attention should be placed on addressing curriculum expectations and how they can be included in the curriculum. Since survey results indicated that Cantonese teachers were especially confident that curriculum demands can be adapted so that more play can be incorporated, an experienced Cantonese teachers could conduct a peer coaching session to share their views with the English teachers on how best to manage specific curriculum demands.

**Key implementation action steps**. In order to implement the initiatives at the start of academic year meeting, a few preparation tasks need to be taken. A supplemental guide should

be prepared with head teachers and curriculum administrators reviewing the guide first, taking into account its applicability and comprehensiveness. The guide should include explaining the EDB's recommendation, the definition and characteristics of play, and a detailed description of how to identify a child in a state of playfulness along with the benefits of play. Head teachers along with more experienced teachers can help prepare some examples and a video link or voice-over presentation of the worked examples to help with completing the assessment reports and students' portfolios efficiently. Curriculum expectations will need to be reviewed to find the balance between the emphasis on reading and writing proficiencies in the children and emphasis on play and guided play during small group activities. Experienced Cantonese teachers who were especially confident that play can be incorporated in the curriculum would need to be identified for sharing their ideas on how best to manage curriculum demands.

**Stage Two: Play Workshop Training**

In the second stage of the implementation plan, teachers would be asked to participate in a three-hour play workshop to enhance their conceptual knowledge of play. Another goal of the workshop would be to help promote relatedness to build attainment value. The workshop would be conducted in two segments, a solitary play segment and a cooperative play segment. In the solitary play segment, a play workshop coach would guide participants to conduct solo play with open-ended materials, then engage participants to reflect on their experiences through personal journal reflections, partner sharing and group debriefing. Open-ended materials, which are usually non-representative and manipulative reusable resources, allow players to express and elaborate physical patterns and ideas in order to help participants foster connections between materials and participants' ideas (Nell, Drew, & Bush, 2013). The purpose would be to let participants experience all the cognitive processes such as problem solving, analyzing,

synthesizing and evaluating their understanding of principles of play and its emphasis on constructors of knowledge. The emphasis should also be for participants to experience their individual control and to be responsible for their behavior.

In the second segment of cooperative play, participants would be encouraged to form small groups (preferably in teachers respective language groups) to work together to build a common structure using with different materials. In particular, teachers could work together through collaboration to develop ways that math and literacy concepts can be represented or emphasized during play. Afterwards, participants in each group would be asked to reflect on their experience and how it relates to the classroom. The emphasis would be to have teachers identify with play, to discover the importance of play and the benefits of play-based learning. At the same time, an essential part of the second segment is to share in large-group discussion and compare viewpoints among teachers of different language groups (and if possible among teachers of different grade levels). Since findings revealed that English teachers were most susceptible to parent's academic pressure, they are encouraged to share their experience and build identity with other English teachers. In the large-group discussion, English teachers could also share their experience with teachers of other language group who felt less pressured. Key topics of discussion should also expand on the personal direct play experience of teachers and any discussion on implications and strategies for applying what teachers have learned to their practice in the classrooms.

**Key implementation action steps.** The first preparation task for this initiative would be to locate a qualified "play" coach who is well versed in conducting this type of workshop for teachers. The Institute for Self-Active Education might be a possible organization to contact because it has been conducting play workshops called, "Hands, Heart and Mind", for early

childhood educators since 1989. At the same time, a big open venue would be required to ensure participants can spread out with their creation and their imagination. Gathering open-ended materials and making sure there is an abundance of them would be important. Not many human resources need to be deployed for the implementation of this task. Nevertheless, conducting this play workshop and obtaining sufficient budget will require the approval of principals and senior administrators.

**Stage Three: Parents and Teachers Breakfast Meetings**

In the third stage of the implementation plan, it is suggested that each campus of the Kindergarten should host a parent-teacher breakfast meeting. A significant number of teachers in the interviews mentioned that perhaps more communication from the school about play-based curriculum would be beneficial. The breakfast meetings would be casual rather than formal, such as a parent-teacher conference. The teachers would be asked to participate in group meetings with parents to share their experience in implementing various teaching and learning strategies, like play-based learning as the first topic. They would share with parents the objectives of play-based learning and help parents to understand what the teachers are doing in the classrooms to reach their learning objectives. The initial proposal from this study is to have at least two meetings per year, one every 6 months. The meeting would be hosted at one of the campuses first, and then evaluate the implementation and location, before expanding implementation to other campuses. The format would be under the direction of the senior administrators and teachers. Possibly each meeting could begin with an informal presentation on designated topics, such as relating to learning through play. The meeting should also include imagery or video of different children playing and engage in the learning process. Head teachers and senior curriculum administrators could speak about specific topics sharing their experiences. After the

short presentation, parents should be allowed to contribute by making comments and asking questions. They could also share their views or discuss their expectations in general. Parents should be invited to submit questions before the meetings to assist with topic selection.

**Key implementation action steps**. Some of the key implementation tasks would be to seek senior administrators and teachers' opinion and inputs on the format and substance of the meetings. It is suggested to form a selected panel of head teachers and teachers to share views and discuss about format, budget, logistics, venue and presentation style of the breakfast meetings. Most importantly, preparation work needs to be conducted to highlight the effective strategies to support parent motivation. It is important to collect relevant imageries and videos of children playing in class which can provide context for the interactive learning process and help parents better understand play-based learning. Essential to address in the presentation would be how concepts of play and play can help promote mastery of mathematics and literacy concepts. The importance of social competence and self-regulation skills should also be emphasized and demonstrated through play-based activities. Select members of the Parent-Teacher Association should also be consulted for ideas for the presentations, format of the meeting and expectation management. In the final stages of the preparation, an invitation outlining the general topic of the meeting, purpose and intention should be sent to parents, so that they come to the meeting with certain expectations.

**Implementation Plan Timeline**

It is envisage that the implementation plan will take two years to complete all three stages starting August 2016. Table 11 describes a breakdown of the cascading implementation plan for the years 2016, 2017 and 2018.

Table 11

*Implementation Plan Timeline*

| | Stage One: Supplemental Guide and First Staff Development Day | Stage Two: Play workshop | Stage Three: Parent-Teacher Breakfast Meeting |
|---|---|---|---|
| Aug 2016 | -preparation of supplemental guide<br><br>-preparation of worked example of assessment report/portfolio<br><br>-preparation of voice-over presentation<br><br>- curriculum review | | |
| Sep 2016 | -staff Development Day: distribution of supplemental guide<br><br>-senior administrator announcement of commitment | -begin to search for a play workshop coach | |
| Oct-Dec 2016 | -Cantonese teachers to share their views on how to manage curriculum expectations in regular meetings | -begin to look for a suitable venue<br><br>-consider the open-ended materials | -seek teachers' inputs for hosting the meeting<br><br>-consult senior administrator |
| Feb 2017 | | -gathered open-ended materials<br><br>-start advertising for the event and recruit | -consult selected PTA members<br><br>-form selected teachers & head teachers panel |
| Jun 2017 | | -host the 1st workshop<br><br>-revaluate before hosting 2nd workshop | -host 1st meeting of selected panel<br><br>-determine format, topic and preliminary logistics |
| Sep 2017 | | | -look for venue<br><br>-seek senior administrators' approval<br><br>-gather image and video for presentation |
| Dec 2017 | | | -host meeting to finalize details<br><br>-prepare presentation<br><br>-finalize invitation and logistics |
| Jan 2018 -August 2018 | | | -issue invitations<br><br>-host meeting in October |

## Evaluation Plan

The final stage of the gap analysis is to evaluate and measure the success of the implementation plan in closing the identified performance gaps. The Kirkpatrick Model (Kirkpatrick, 2006) will be used to assess the impact of the various aspects of the implementation plan on teachers' performance. The framework is based on four levels that measure of the effectiveness of the training program: reaction, learning, behavior, and results. The first level of "reaction" is to assess participants' general attitude, perception and reaction towards a training program or initiative. The second level is evaluating "learning" by assessing the extent that a participant has acquired the skills, knowledge, attitudes and commitments after a training program/initiative. It also measures what has been understood and absorbed pre and post training, providing immediate feedback to improve the training programs. The third level of evaluating "behavior" entails measuring whether the participants' behaviors have changed as a result of learning the knowledge and skills during the training initiatives. This level also intends to measure how participants may apply the knowledge learned from the training context to the workplace. In the fourth level of evaluation, results of the training are to be assessed. Level four evaluation should consider whether the training has achieved the intended impact hence results that have contributed to the organization's performance and to closing any performance gap.

For the purposes of this study, the four levels of evaluation should be used to assess each stage of the implementation plan.

### Stage One: Supplemental Guide and First Staff Development Day

**Level 1 Evaluation, Reaction**. In order to evaluate the reaction level, a general survey could be distributed to measure teachers' perception of the information contained in the supplemental guide relating to play-based learning. It would be helpful to include in the survey

items relating to the explanation session on the recommendation of the EDB, the worked examples of assessment reports and portfolio reports and the tips offered by head teachers in the short voiceover presentation. A post training survey could cover senior management's announcement of their commitment to the play-based learning curriculum and any specific change which might be made that year.

**Level 2 Evaluation, Learning.** Substantive questions concerning concrete examples of the common factors in the definition and characteristics of play, along with the qualities of the state of playfulness could be included in the post training survey. Informally, the teachers' understanding of the process for efficient completion of assessment report and portfolios after studying the worked examples and the demonstration by the more experienced teachers can be assessed during regular meetings. In the follow-up with assessment report and portfolio report demonstration, teachers could be asked to complete a sample report during regular meetings to assess their efficiency in completing the required assessment and portfolio reports.

**Level 3 Evaluation, Behavior**. In order to evaluate behavioral change or knowledge transfer, teachers should be assessed via classroom observations to measure if they have applied the concepts of recognizing the characteristics of play and state of playfulness in their practice. Also, changes could be assessed in terms of the way teachers lead the children when they play and how teachers set up the play environment to reinforce the characteristics of play. The amount of time that teachers need to submit the assessment and portfolio reports could be used to evaluate the effectiveness of the worked example and voice-over presentation. In addition, whether they can submit the reports before the due date could indicate their efficiency before and after the supplemental guide training. It would be a comparison of the number of days that a specific teacher needs to submit the reports before the designated deadline before the Staff

Development Day and after. Having an improved timing due to efficient report writing could provide an indication of how effective the training was and whether more training needs to be incorporated.

**Level 4 Evaluation, Results.** Results or impact can be seen or measured from the changes that have occurred in the activities planned by teachers in the curriculum. Impact can also be measured by the amount of time teachers are spending on average in play-based activities each day and each week. Efficiency in completing the reports can be assessed by the outputs of the teachers before the submission deadline. Impact from senior administrators' demonstration of their commitment to a play-based curriculum can be seen via teacher enthusiasm for play-based curriculum and perhaps, potentially on the turnover rate of teachers employment. Ultimately results are measured by parents' satisfaction with the play-based learning and the number of times parents complained.

**Stage Two: Play Workshop Training**

**Level 1 Evaluation, Reaction.** A post workshop survey could be conducted to assess teachers' reaction to the workshop, in particular how their experience enhances their understanding of the principles of play and how the interactive process provides context. In particular, an assessment of their experience or explanation on whether the cooperative play interaction enhanced their understanding of constructing knowledge and how that experience helped them to provide ways to foster and promote mathematic and literacy concepts. The survey could also assess whether the sharing session build identity for the teachers and their reaction to the shared experience of other teachers experience in their practice of incorporating play in the classrooms.

**Level 2 Evaluation, Learning.** The teachers' conceptual knowledge could be tested three months after the workshop to assess if their conceptual knowledge on how principles of play can strengthen mathematic and literacy skills. They could also be asked questions in their regular meetings a few weeks after participating in the workshop about whether they think that the workshop helped to reinforce their belief in play and how parents' expectations can be managed.

**Level 3 Evaluation, Behavior.** The transfer of knowledge can be assessed through observing how teachers are implementing play activities that foster mathematics and literacy concepts in the classrooms. In addition, an evaluation could be conducted through informal conversations concerning the workshop effects and teachers' attitude and values.

**Level 4 Evaluation, Results.** The effectiveness of the workshop can be measured via classroom observations on whether implementation of more play-based activities to promote math and literacy, especially in the upper class classrooms. Also, increase in motivation factor of value can be assessed by informal conversation and by exploring during annual review whether those who attended the workshop experienced increased job satisfaction compared with those who did not come to the workshop.

**Stage Three: Parent-Teacher Breakfast Meeting**

**Level 1 Evaluation, Reaction.** In respect to the breakfast meetings, teachers are requested to complete a reaction assessment survey after the breakfast meeting. Topics of the survey would include the format of the meeting to the general attitude of the parents concerning the topics covered in the meetings such as play-based learning. In particular, it is important to assess whether teachers think parents appreciated the opportunity for this meeting.

**Level 2 Evaluation, Learning.** Measuring attitude changes would be an important assessment to the breakfast meeting. Perhaps, teachers could be asked three months after the survey whether they believe parents' attitude has changed after the meeting and whether they are asked about academic learning as often as before the meeting.

**Level 3 Evaluation, Behavior.** Evaluation for the level 3 behavioral changes can be assessed through observations of any signs of increased value in teachers' perception in promoting play manifested in the increased amount of time for play in their classroom. In addition, informal feedback from the teachers and head teachers could reflect whether there are changes in behavior after the meeting, such as increased implementation of play-based curriculum in the planning of small group activities.

**Level 4 Evaluation, Results.** At this level, evaluation will concentrate on measuring teachers' expectation from parents and whether the increased understating of play-based learning by parents helped the communication between teachers and parents and help manage parents' expectations about play-based learning in their classroom.

## Limitation and Delimitations

**Limitations**. There are a number of limitations which may affect the accuracy of this study. First, the study is limited by the bias of the responses created by the perception of the teachers that participation in this study was a work-based performance review, which is true for both interviews and surveys. Second, the study is limited by the accuracy of the translation of the questions and various responses from Chinese to English; and hence, participants may not understand or interpret the survey items and interview questions in the manner intended. Third, participants answered survey questions on a voluntary basis and were allowed to skip questions so not all survey questions were answered, which may affect the accuracy of the survey results.

Fourth, various key stakeholders, like administrators and parents, were excluded to limit the scope of this study. Therefore, their specific views examined through the lenses of knowledge, motivation, and the organization would make this gap analysis more comprehensive and complete. Fifth, statistical analysis was based on a correlational, not a causal relationship.

**Delimitations.** The literature and evidence reviewed was mostly pertaining to the younger age group of the kindergarten and nurseries ages 2-4, as play is most appropriate for that age group. In relation to the recommendations of the Guide to the Pre-primary Curriculum, references to the recommendations were made pertaining to half-day programs only. The Kindergarten has whole-day classes for some upper class students in the kindergarten (age 5-6).

## Future Research

On an organizational level, it would be interesting to study the integration of teachers from different cultural backgrounds in a bilingual or trilingual classroom setting. In a bilingual setting, one is bound to have teachers of different cultural backgrounds who are required to work together in the same classroom. Many management studies emphasized the integration of employees from different backgrounds, for example, several studies discussed the difference between the hierarchical society like the Asian culture and the egalitarian society of the Western culture. One issue is the distance between managers and employees in a hierarchical society is much greater than in an egalitarian society. In a hierarchical society, there is a perception that managers just need to instruct their employees what to do where in an egalitarian society, employees respond better to more freedom. It would be interesting to examine these differences in an education setting and how to bridge the gaps between teachers of different cultural backgrounds.

How to use play to foster resiliency in children would be an interesting topic for future research. Some of the latest longitudinal studies and research indicated the importance of resiliency and executive functions like self-regulation and their effects from children to adulthood. The research showed that the earlier children are equipped with such skills such as resiliency and self-regulation, the more successful children and adolescents will be in their social competence, academic demands and workplace tensions. Hence, it is a belief of the researcher that children at a very young age can be trained in resilience and self-regulation and there is no better way to do this than through play at a very young age.

## Conclusion

This dissertation studied how the Kindergarten can improve their curriculum by incorporating more play-based learning to enrich students' learning experiences. A gap analysis was used to identify areas of improvement in teachers' knowledge, motivation and organizational resources.

Key survey results, interview findings and observation findings revealed overall that teachers had strong competence with regards to knowledge, motivation and organizational issues relating to play-based learning. Nevertheless, in the area of knowledge and skills, teachers indicated that they were not familiar with the exact time allocation recommendation of the EDB for play and free-choice activities. In addition, the research findings from this study supported the performance gap that teachers were unclear about the common factors that define play and the characteristics of play, as well as, the qualities that indicate a state of playfulness. Teachers were found to be unfamiliar with some aspects of conceptual knowledge such as, how the principles of play can foster mathematical concepts and literacy skills. It was revealed that

participants' intention to promote play sometimes did not fit the definition of play for children, such as using a "SMARTboard" or toy clock was considered play by some respondents.

The findings also indicated that teachers were motivated to incorporate more play-based learning; however, the challenges of not feeling appreciated by the parents, who seem to value academic readiness over play, affected their persistence to incorporate play in the curriculum.

As an organization, teachers had issues with the large amount of administrative work such as assessment reports and students' portfolios, which hindered their efforts to incorporate more play. Teachers also revealed that the curriculum expectations made it difficult for them to incorporate more play, because of the expectation of parents for academic learning to take precedence over play. The overwhelming concern of teachers was how the culture in Hong Kong creates pressure from parents for more academic skill based learning. Over 81% of the teachers were asked by parents about their child's academic readiness at least once per week; and, over 60% of the teachers in the survey ranked mathematical and literacy skills as the top two assets valued most by parents.

A comprehensive three-stage implementation plan was devised to help the Kindergarten to close the performance gaps for achieving its goals in two years. The plan included the preparation of a supplemental guide to help teachers refresh their understanding of the recommendations from EDB and the definition of play. The plan also proposed providing a play workshop for teachers to gain a better understanding of their identity with play and, at the same time, to give them a hands-on experience about how principles of play can help to foster mathematical and literacy skills. Finally, a parent-teacher breakfast meeting was proposed as an informal opportunity to share with parents in order to raise their awareness about play and play-based learning.

Although the study is focused on one kindergarten organization in Hong Kong, it is the hope of the researcher to encourage this continued debate on the most appropriate learning strategies for children and kindergartens around the world. Play is undervalued in education. Its importance must be realized today to help future generations to grow and develop the necessary skills needed to cope with an increasingly complex society.

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Appendix A

Survey Instrument

## 問卷調查

Teacher's name 老師姓名:

Language specialty (please circle): English, Chinese (Cantonese) or Chinese (Putonghua)
專諸語言(請圈): 英文 / 中文(廣東話) / 中文(普通話)

Years of Experience 年資:

Grade level currently teaching: Pre-nursery, Nursery, Lower Class, Upper Class
現時教授級別: 小組 / 幼兒班 / 低班 / 高班

1. Do you know if the EDB prescribe requirements for "learn through play" in the pre-primary curriculum?
   你知否教育局對學前教育課程有關「從遊戲中學習」的規定要求?

   1. Yes 知道
   2. No 不知道

2. Do you know what is the appropriate time allocation for free choice activities and music and art in half-day curriculum as advised by the EDB?
   你知否教育局對半日制課程中，有關自由選擇活動、音樂及美藝建議的適當時間?

   1. 165 minutes 分鐘
   2. 155 minutes 分鐘
   3. 85 minutes 分鐘
   4. 55 minutes 分鐘

3. What are the common factors you feel will define an activity as play? (may choose multiple answers)
   你認為有什麼因素令你把活動定性為遊戲? (可選多項)

   1. Children's feelings or motivation
      幼童的感覺或積極性
   2. The types of behavior children partake when they play
      當幼童玩耍時，他們參與時表現出來的行為
   3. The environment in which children play
      幼童玩耍時的環境
   4. The process and procedures children take when they play

幼童玩耍時的過程及程序

4. What do you feel are the common characteristics of play? (may choose multiple answers)
你認為遊戲應有什麼特質是最合適的? (可選多項)

   1. Play is intrinsically motivated
   遊戲是源自內在動機
   2. Play is relatively free from rules
   遊戲是比較沒有規則的
   3. Play is carried out as if the activity is real
   進行遊戲時要使活動像真的一樣
   4. Play is focused on the process rather than any product
   遊戲著重過程多於結果
   5. Play is a product of the players making their own choices
   遊戲是幼童自己作出自由選擇的結果
   6. Play requires the active involvement of the players
   遊戲需要幼童主動參與

5. How do you know when a child enters a state of playfulness? (may choose multiple answers)
你從何得知幼童已進入嬉戲的狀態? (可選多項)

   1. Child seems to have clear goal
   幼童似乎有清晰的目標
   2. Have focused attention
   專注力強
   3. Seem to be immerse in the activity
   幼童似乎融入遊戲中
   4. Have an altered sense of time
   幼童有時間概念
   5. Seem intrinsically motivated
   幼童的內在動機
   6. Believe the activity is worthwhile
   幼童相信活動是值得的

6. I am knowledgeable about the types of plays.
我很了解不同種類的遊戲 。
   1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
   非常同意 同意 不同意 非常不同意
7. Play emphasizes children as constructor of knowledge.
遊戲強調幼童是知識的建構者。
   1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
   非常同意 同意 不同意 非常不同意

8. I am knowledgeable about the limitations of teacher intervention during play.

我很清楚在遊戲時老師介入的限制 。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

9. I am knowledgeable of evaluating level of play activities for children.
我對評估不同程度的遊戲活動有着深入了解 。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

10. I am knowledgeable with using different methods and techniques to increase level of play activities.
我對以不同的方法及技巧去提升遊戲程度有着深入的認識。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

11. I am knowledgeable in helping children to learn mathematical concepts through play activities.
我擁有豐富知識去幫助幼童從遊戲中學習數理概念。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

12. I am knowledgeable in helping children to learn literacy skills through play activities.
我擁有豐富知識去幫助幼童從遊戲中學習讀寫技能?
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

13. I am knowledgeable in helping children to learn social competence and self-regulation skills through play activities.
我擁有豐富知識去幫助幼童從遊戲中學習社交及自律的 能力。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

14. Have you set goals to evaluate your strengths and challenges you face on implementing learning through play?
在實踐從遊戲中學習時，你有沒有訂下目標去評估自己的長處及挑戰?
1. Yes 有
2. No 沒有

15. How often do you evaluate your strengths and challenges when you implement learning through play?
當實踐從遊戲中學習時，你會多久去評估一次自己的長處及挑戰?
1. Very often 經常
2. Often 有時
3. Seldom 很少

4. Never 從不

16. What is the role of a teacher in the kindergarten classroom?
老師在幼稚園課室扮演着什麼角色?

17. I believe children can learn through play.
我相信幼童能從遊戲中學習。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

18. I believe play is just to fill in free time for children after they complete their assignments.
我認為遊戲只是讓幼童完成他們的功課後填滿自由時間的一種選擇。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

19. I believe children learn faster through play activities.
我相信從遊戲中學習，幼童學習會較快。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

20. I am more knowledgeable in teaching through play activities compared with traditional teaching method.
相比傳統的教學方法，我對從遊戲中學習的教學方式較為了解。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

21. I am confident in my ability to implement “learning through play” effectively and in an impactful manner in the classroom.
我有信心我能夠以一個有影響力的方式在課室內有效地實踐「寓遊戲於學習」。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

22. What are parents’ general feeling regarding play and learning through play in the classrooms?
家長對於玩遊戲以及在課堂上通過遊戲學習一般抱以什麼看法?

23. What are the parent’s expectations in terms of academic readiness and academic learning in classroom?
家長對於課堂上的學術準備和學習有什麼期望?

24. How often do parents directly ask you about their child’s academic readiness?
家長大概多久會詢問你關於小朋友的學術準備？
1. Two to three times a week 一周 2-3 次
2. Once a week 一周 1 次
3. Two to three times a month 一個月 2-3 次

4. Infrequently 幾乎不問

25. I agree that I have enough resources to conduct and build a play-based learning atmosphere.
我同意我有足夠的資源去構建一個以遊戲為基礎的學習氛圍。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

26. I agree the environment and facilities of the school is conducive for centered pedagogy.
我認為學校的環境和基礎設施有助於中心教學法。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

27. I do not wish to try any new format with the curriculum such as "learning through play".
我不想嘗試任何新形式的課程設計，如:在遊戲中學習。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

28. I do have faith in "learning through play" as the preferred learning method.
我有信心「寓遊戲於學習」能成為首選的學習方式。
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

29. How would you rank which are the assets most valued by parents? (rank them with 1 being the most valued and 5 being the least valued)
你會如何排列以下在家長心中認為最有價值的技能? (1-5，1 為最有價值，5 為最少價值)

| | | |
|---|---|---|
| Math skills | 數理技能 | _____ |
| Literacy skills | 讀寫技能 | _____ |
| Art skills | 美藝技能 | _____ |
| Socialization skills | 社交技能 | _____ |
| Problem solving skills | 解困技能 | _____ |

30. Do you feel there is too much administrative work i.e. portfolio writing, that you believe hinders your planning and effort to implement and make learning a better experience for the students, like incorporating more play?
你是否認為過多的行政工作，如評估寫作等，會使你缺乏時間和精力去為學生規劃更好的學習經歷，如融合遊戲於學習當中？
1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree
非常同意 同意 不同意 非常不同意

31. Do you feel there are sufficient communication channels between teachers and parents to share learning objectives and recognition of the school's approach to children's learning?

你認為老師與家長之間有足夠的溝通渠道去互相交流學習目的及其認可的學習方式嗎？

1. More than enough 非常足夠 2. Sufficient 足夠 3. Not sufficient 不足夠 4. Minimal 非常不足夠

32. Do you feel existing curriculum expectations and demands affect you to incorporate play into the curriculum? Please explain?
你認為現時對課程的期望及要求如何影響你將遊戲融合於學習課程中？

Appendix B

Interview Questions

Teacher:

Years of Experience:

Grade level currently teaching:

**Knowledge**

1. What is the average amount of time your class spends on free choice/play-based activities in the classroom per day or per week?
   你每日或每星期平均花多少時間在課室進行自由選擇活動/以遊戲為基礎的活動?

2. What are the characteristics you look for to define an activity as play?
   活動要有什麼特質會使你把它們定性為遊戲?

3. Do you know how play emphasizes children as constructors of knowledge? How can this interactive process provide context for further learning? How do you get them to do higher level of play?
   你知道遊戲如何強調幼童是知識的建構者嗎? 如何令這個互動過程提供進一步的學習環境？

4. In consideration of the principles of play, what are some ways to use guided play to foster mathematical concepts? Any example
   鑒於遊戲的原則，有什麼方法利用遊戲/指導遊戲去培養數學概念？請舉例。

5. In consideration of the principles of play, what are some ways to use guided play to enhance literacy skills? Any example
   鑒於遊戲的原則，有什麼方法利用遊戲/指導遊戲去加強語文能力? 請舉例。

6. In consideration of the principles of play, in what ways do you believe guided play can help foster/enhance social competence and self-regulation in the classroom? Any example?
   鑒於遊戲的原則，在那一方面，你相信指導遊戲能培養/加強幼童的社交及自律能力? 請舉例

7. How would you use play to achieve the learning objectives of each unit? Any example
   你如何以利用遊戲達到每一項學習目標？請舉例。

8. How would you use play as means for transmission of teaching content? Any example
   你如何以遊戲作為一個渠道傳達學習的內容？請舉例。

9. How do you evaluate your performance in implementing learning through play and the problems you have encountered?
你如何評估自己在實踐從遊戲中學習的表現及遇到的問題？

10. What are some of the steps you have taken to help you implement learning through play successfully?
你用了什麼方法去幫助你成功實踐從遊戲中學習？

11. What are some of the challenges you face in implementing learning through play?
在實踐從遊戲中學習時，你遇到什麼挑戰？

**Motivation**

12. Do you feel you are making a difference in children's lives by getting them to do guided play in the classroom?
你覺得你在課室跟幼童進行指導遊戲時，你是為幼童帶來正面的影響？

13. How would you rank "learning through play" versus other teaching practices?
你如何評價「從遊戲中學習」及其他教學方法？

14. Do you feel children can effectively learn literacy and math skills through play-based activity?
你覺得幼童能從遊戲中有效地學習語文及數學嗎？

15. Do you do you feel confident in your ability to implement "learning through play" effectively and in an impactful manner in the classroom? May be give an example how do you do it effectively?
你有多信心你能在課室有效地及有影響力地實踐「從遊戲中學習」？或試舉例子說明你如何有效地做到？

16. Do you feel there are lots of pressure from parents to conduct more academic learning instead of play?
你會否感到很多來自父母的壓力去進行更多學術學習而不是遊戲？

17. Do you feel that perhaps parents don't understand the benefits of play hence they do not appreciate play?
你會否覺得或許父母不明白遊戲帶來的益處，因此他們不懂得欣賞遊戲？

18. Do you feel that parent's are overly concerned with academic readiness they do not appreciate a teacher spending too much time on play?
你會否覺得父母過多於關心學術準備，並不欣賞老師放太多時間在遊戲上?

**Organization**

19. Overall, do you feel teachers are agreeable to use “learning through play” as the preferred teaching method?
整體上，你認為老師會同意利用「從遊戲中學習」作為優先的教學方法嗎？

20. Do you believe parents understand that play lays a good foundation for future learning?
你相信父母會明白遊戲是為將來奠定學習的好基礎嗎?

21. Do you believe the school is providing enough guidance to parents about “learning through play”?
你相信學校向父母提供足夠有關「從遊戲中學習」的指引嗎？

22. What is the single most important reason you feel that is limiting you from incorporating more play in the classroom?
什麼是你最重要原因阻礙你在課室融入多些遊戲於課堂？

# Appendix C

## Classroom Observation Protocol

Teacher:

Grade level currently teaching:

**Observation items**

Observe teachers implementation of the curriculum or his/her usual teaching style

Observe teachers implementation of a lesson on the program of inquiry
-are the children playing?
-are the children being constructor of knowledge?
-how to elevate the level of play?
-level of intervention from the teacher?
-able to bring forth the central idea, concepts and line of inquiry?

Observe behaviors to assess teacher's level of engagement in learning through play

Observe teacher's behavior to assess his/her confidence level in carrying out him/herself in a classroom when using learning through play