

CHILDREN INTERACTION PATTERNS EXHIBITED DURING LEARNING ACTIVITIES: A CASE STUDY AT A SELECTED PUBLIC KINDERGARTEN IN MALAYSIA

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ABSTRACT

This qualitative research aims to explore the nature of children interaction patterns during their learning activities. This study involved six 6-year old children (4 boys and 2 girls) from a selected public kindergarten in Malaysia. Employing the case study design method, data was collected using non-participant observation techniques. The findings of this study revealed that there were two types of children interaction during learning activities: children-adult interaction and children-peers interaction. The patterns of children interaction in children-adults interaction comprised; constructive-dialogic and explicit correction while in children-peers interaction, children engaged in three patterns of interaction namely; sociable, creative and non-verbal. Finally, implications of this study for preschool education in particular will be discussed.

Field of Research: *Children, Interaction, Learning Activities, Social Constructivism, Qualitative Research.*

1. Introduction

Kindergarten and preschool centres are the first place for formal education that initiates the process of interactions and socialization among children. Activities that are carried out in those education centres are mostly done in groups. Throughout the day, preschoolers learn to share, tolerate, and collaborate with each other. Their engagement in group activities will lead to development of certain values such as tolerance, respect, cooperation, leadership and so on. The values are essential ingredients for social skills which are much needed as adults in the future.

Social interactions especially peer-interactions serve a variety of important roles for the children. Building friendships for example promotes positive social and emotional development. The formation of the social skills varies according to the capability of the children to participate, understand and appreciate the activities. A child with better capability is more ready to recognize the social signs and develop more complex skills such as problem solving and conflict resolving abilities. In fact, social interaction among preschool children is one of the most important characteristics of social skills that will help children to understand the environment and build their self-confidence. It will also shape their personality in years to come.

However, not all children manage to go through this process successfully. Some of them face difficulties in dealing with their friends such as inability to tolerate certain behavior or appreciate another person's view and action or generally weak in developing an understanding of the social rules. As the result, they are left behind and become irrelevant to the rest of the group and consequently become lonely. Children who are quiet, unable to portray their ability and not willing to participate in group activities in the classroom may be neglected by their peers. This situation will get worse if it is not recognized by the teachers. When children experience serious difficulties in peer relations, the development of emotional and social competencies may be threatened. Peer rejection and victimization is one of the most significant sources of stress to children and it will lead to the feeling of isolation and low self-esteem. This stigma could deny their opportunity to learn social behaviour and adapt to changes. Children will develop a deep feeling of social incompetence and inadequacy.

For some children, being ignored and rejected by peers may have a lifetime effect. They tend to develop into an anti-social, involve themselves in avoidance of school and criminal acts, have low achievement and self-esteem, poor mental health, and finally tend to deal with difficulties in relationship and poor work history at a later stage (Parker & Asher, 1987; Hartup, 1992; Katz & McClellan, 1997; Sutton, Smith & Swettenham, 1999) Early childhood is a very important and remarkable period in human development because as early as age of 5, children cultivate 85 percent of their intellect, personality and social skills (National Research Council and Institute of Medicine, 2000). Children who have excellence and quality of early childhood education will start on a better life trajectory (UNESCO, 2010). Therefore, it is believed that an early identification and recognition of interaction incompetence among children will have a significant impact on their lifelong development especially in their cognitive domains, emotional self-being and social ability.

Regarding students' interactions, many studies have been done before and they vary across the age of developments with a variety of spheres of discussion. A study done by Sagar, Schofield and Snyder in 1983 for example, sought to investigate the race and gender barriers with special attention to the preadolescent peer behaviour in academic classrooms. The nature of interactions between both sexes across races among 92 black and white students of 6th graders was the main focus of behaviour in this study. The findings showed that generally, students of both races were not really different in their interracial and intraracial behaviours. This means that both races interacted mutually across their colours and sex differentiation. The study results also indicated that interactions across races were practiced more by boys than girls and that the blacks are twice more progressive in initiating conversation compared to the whites.

A more recent study done by Ann-Marie Faria, a Ph.d student from University of Miami in 2009 on the other hand aimed to explore the relationship between peer interactions and school readiness through three constructs of displayed and received physical aggression, relational aggression and pro-social behaviours. This study, which analyzed the school readiness of 119 children from 18 classrooms in six Head Start centres in Florida, involved a direct observation of peer interactions and a direct assessment of structural equation modeling (SEM). From the result, it was found that peer interactions in preschool were related to school readiness. Here, it is shown that relational aggression has as significant correlation to school readiness as compared to physical aggression as well as pro-social behaviours.

Consequently, this present research intends to explore and develop an understanding of children interactions pattern during their early learning period. It is hoped that the findings may serve as an overview in order to help teachers, educators and administrators to better understand this situation as well as produce guidelines and necessary policies for implementation and probably develop a curriculum suitable for this age group.

2. Young children Interaction and learning

There were many approaches and interventions embarked through researches and pilot projects to foster children interaction in educational setting especially during learning at school.

An example of this is the study originally carried out by Mirella (2012) recently on introduction of mediating tool such as puppet into learning. This was presented to twenty children aged 3 to 5 years old in an early childhood classroom in a large city in Sweden. The research undertaken ethnographic approach where the researcher follows thoroughly the reality of what had been studying for a year, during autumn 2004 and spring 2005. The underpinning arguments on the use of puppet as a tool in preschool were based on several significant premises for instance; sociocultural perspective, activity theory perspective, language and thinking, dialogue and meaning, motive and activity, mediation and tool, communication and contest and interaction and the zone of proximal development. Interestingly, during this study, children were encouraged to communicate with the puppet in their daily life at preschool, so that it became their cultural practices and it was hoped to elicit naturalness of children to talk with the puppet, about the puppet and because of the puppet. Findings offer a promise on the application of puppet to enhance communication through processes of 'subjectivisation', facilitation and external party associations. Generally, this research was succeed in generating the use of puppet in preschool classroom as it appeared to assist children to develop their affective domain (the puppet's relational potential), to stimulate their formation of knowledge and expand their symbolic, analogous and persuasive language (the puppet's linguistic potential) and to promote collaboration between children and teachers and well as to nurture creativity (the puppet's action-related potential).

Teacher plays a major role in children interaction at school. Children observe how people surrounding them talk and develop their knowledge of vocabulary and understanding about their context progressively as states by Genishi (1988); "Adult are the main conversationalists, questioners, listeners, responders, and sustainers of language development and growth in the care center or classroom." There are boundless opportunities for teachers to interact with children at school either during learning or outside learning time.

Massey (2004) conducted a descriptive research to discover the interaction between preschool children and their teachers in the classroom environment. Some critical avenues suggested for teachers to utilize this purpose such as during book reading period, playtime and recess. Findings demonstrated several types of interactions that can be exemplified and applied by teachers in order to foster child's verbal interaction and literacy skills during schooling which include using props and levelling voices when presenting a piece of literature, sharing views on illustration of the reading books, probing the talk on items during pretend play and introducing new related words during mealtime. Indeed, research from Massey suggests that preschool teachers need to involve children in cognitively challenging conversations to foster their language growth.

Study done by Durden and Rainer (2008) supported the idea. They studied the nature of teacher-involvement interactions in small group activities with 2 years and 3 years old children (N=30) at two university sponsored child development center at a large urban university in a city in the Southeastern United States. The centers are recognized by the National Association for the Education of Young Children (NAEYC) which focused on children's cognitive and affective development and promoted student-centered approaches to learning. Both teachers hold college degrees and teachers certification and been serve the location for 2-3 years. They had an average of 10 years' experience of teaching. Findings concluded that the ways and nature of teacher talk can be a powerful tool in provoking critical thinking. Few recommendations to empower the practice include the maintenance of harmonious environment to elicit children's contribution and the usage

of reflective and analytical questions by teachers and providing resolute feedbacks to extend children's thinking.

Bundle of articles on reason to research young children interaction precisely expose the researcher into broad and wide horizon of this particular domain. It benefits the present research in term of its operational definition of learning activities that will be examined. The present study aim to explore and understand the perceived normal young children interaction during learning activities which referred to the regular activity that children engaged in (i.e individual task and group activity, play) through their school subjects (by following the timetable and course outline). The setting for the learning activities can be outside or inside classroom.

3. Young children interaction and patterns of interaction

Fisher (1993), in his writing "*Distinctive features of pupil-pupil classroom talk and their relationship to learning: How discursive exploration might be encouraged*" assessed how classroom discussion leads to initiate pupil's learning in groups. His research used qualitative approach which involved children in primary age that were working on computers This study focused on the nature of communication and its roles in maintaining a subject's discussion within the involved group as well as the level of group understanding on a particular topic of discussion.

The findings showed that there were three major categories of interactions; exploratory, cumulative and disputational talk. Fisher explained on how each of these categories affected the children's learning process. He described disputational talk as an introduction speech that can be in various form such as an opinion or an order, followed by an objection for instance a counter opinion or justification on some issue. This is caused by either misunderstanding or improper explanation on the previous discussion. Cumulative talk in the other hand is described as a form of initiation that is mutually agreed by both parties with or without additions and amendments. The third type of interaction is exploratory talk which is characterized by the debatable and counterchallenged discussion through opinions and views from both parties. This exploratory talk, according to Fisher, is important to motivate help children in constructing their understanding through expansion of their learning experiences and knowledge. The conclusion made was that teachers play a vital role in initiating strategies and ways especially through exploratory talk.

Another study was done by Heft and Swaminathan (2002) on the impact of computers on the social behaviour of preschoolers. It involved fourteen preschoolers that were observed while they worked with computer for a period of two months. Three methods of data collection were employed; the direct observation, informal interviews with the children and the interviews with the teachers. The result showed a total of 91 peer interactions and 33 teacher interactions took place during the study. The interaction patterns varied in frequency throughout one whole day. They included children acknowledging each other, children commenting and being ignored, and children sharing or helping each other. Peer interactions were categorized by Heft and Swaminathan (2002) as follow:

1. Children observing and acknowledging each other,
 - a. One child observes another child but has no reaction;
 - b. One child observes another child and does the same action, without comment;
 - c. One child observes another child and comments, but does not do the same thing;
and
 - d. One child observes another child and comments, and then does the same thing.

2. Children commenting and being ignored
3. Children sharing or helping each other

This finding shows an abundant means of flexibility of children's interaction at the computer. Gender variation was found in frequency of use, with the boys using the computer more than the girls. The implications of the study highlight the educational value of the social environment at the computers, the value of using appropriate and sophisticated software, and the need for teachers to teach such cooperative learning behaviours as sharing of ideas and group problem solving.

Lim (2008) in his study, *A Descriptive Study on Young Children's Social Interaction with Peers at the Computer Area in a Korean Public Kindergarten Classroom* described six patterns of children's social interaction with their peers at the computer area in a Korean public kindergarten classroom. The study was carried out in one classroom which had two computers that children could use during their free time every day. There were two teachers and 20 children in this full-day kindergarten classroom. The children had 45 to 50 minutes free time a day where all of them played at each activity area including the computer area. It was during this period that the patterns of young children's social interaction with peers in classroom were examined. Short interview sessions had also been carried out by the researcher with the children and teachers in that particular classroom.

From the result, the identified patterns of young children's social interaction included parallel play, conflicts, sociable interaction, knowledge construction through positive interaction and through negative interaction, and non-verbal communication. These were summarized in Table 1 below:

Table 1: Patterns of Social Interaction (Lim, 2008)

Patterns of Social Interaction	Explanation
Parallel play	Similar to regular play situation monologue
Verbal conflicts	Simply exchange words of disagreement without information
Sociable interactions	Simply exchange words of agreement without information
Knowledge gaining through positive process	Exchanging information positively
Knowledge construction through negative process	Exchanging information through negative conflict
Non-verbal communication	Observing, imitating, triggering to new interest

From the mentioned findings, it can be concluded that there is no distinctive framework of the types and patterns of children interaction in learning. This is perhaps due to the nature of human itself which are both unique and subjective. As a social creation (Qurroti A'yun, 2006) humans interrelate between them and with their surroundings. It is strongly believed that the social context of individual interactions and experiences determine the degree of individuals in developing their abilities and also realizing their potentials.

Therefore, by conducting a qualitative case study particularly in exploring the children interaction during their learning time, it is possibly for the researcher to tabulate and present the type, themes and categories of children interactions during learning activities for this particular group of children at the respective centre.

4. Theoretical framework

Social constructivism and children interaction

Many questions have been raised on how human think and learn. Constructivism is a set of belief which emphasizes that learning and construction of knowledge are achieved through the active role played by the learners (Dufresne, Gerace, Leonard, Mestre & Wenk, 1996; Palinscar, 1996; Geer, & Rudge, 2002; Swan, 2005; Ciot, 2009). The immersion of knowledge is viewed as the best result of contact and socialization made by learners with his or her surrounding, physical environment and experiences. This entails both adaptation of concepts and reorganization of knowledge structures. In fact, the process depends of the competency and the extent of knowledge that learner has; different individual will develop from a vast experiences with their unique understanding and vice versa. Constructivism holds on to individual responds positively, constructs accordingly, become more aware and take more responsibility to increase their understanding and appreciation of their own mental frameworks and other people's thinking as well.

From a social constructivist perspective, learning is in its utmost success when it is socially mediated (French, 2007; Cornu & Peters, 2005; Pei-Lun Kao, 2010). Undoubtedly, human engagements to learning in its actual context facilitate this process.

With regard to children and development, a renowned psychologist and educator, Lev Vygotsky emphasized that children are dynamic and energetic participants in learning process. According to him, children construct and form their understanding mainly through social interaction. Certainly, the cultural engagement and experience with the context and surroundings that they live in play a major role in facilitating their cognitive development (Holzman, 2009). Vygotsky further observed that thinking, reasoning and translation of knowledge which take place in a direct, spontaneous and explicit ways may contribute to child development and their adaption to be more mature members in their community. Thus, it becomes important to understand how the numerous and lively social contacts such as conversations, joint-tasked, play, asking questions, observation and the like be it between children and adults as well as among peers during schooling can be used to enhance students' learning and maturation.

5. Methodologies

5.1 Research Design

This study employs a **qualitative** research design. This research design was chosen based on the research problem of the study – to explore the children interactions during learning activities. By using this type of research design, the researcher is able to understand the phenomenon, learn the variables as well as learn from the participants through exploration (Creswell, 2008) in the following terms:

They (qualitative data) are a source of well-grounded, rich descriptions and explanations of processes in identifiable local contexts. They help researcher to get beyond initial conception and to generate or revise conceptual frameworks. Finally, the findings from qualitative studies have a quality of “undeniability.” Words, especially organized into incidents or stories, have concrete, vivid, meaningful flavor that often proves far more convincing to a reader-another researcher, a policymaker, a practitioner than pages of summarized numbers (p.1).

A case study is applicable in this particular study because it is closely tied to and has been used in conjunction with children interaction. Moreover, a case study is a suitable and useful mean to seek and to add to an existing body of research as well as providing the practitioners with a detailed account of a series of events that can help them to apply the findings into their own classroom planning.

5.2 Methods of Data Collection

According to Yin (1994, p.13), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real life context.” This descriptive case study allowed the researcher to present a comprehensive account of the phenomenon of children interaction during learning activities. Merriam (1998) asserted that the descriptive case study is appropriate when presenting basic information about areas of education where little research has been conducted. Hence, the descriptive case research design is considered to be the most befitting to the purpose of this study which is to obtain detailed descriptions of young children’s interaction during learning activities.

The data source for this study is obtained through direct observation of children’s social interaction during learning activities.

Direct Observation

Baker (2006) defined observation as the systematic recording and accumulating of observable occurrences or behaviour in a natural site. Creswell (2008) proposed that in this method, a researcher is able to access open-ended and direct information by watching carefully people and place at a research location.

As this study involved children at aged 6 years old during their learning activities, the direct observation (which had been done in several sessions) is suitable because the researcher was able to observe their behaviour in the real-world setting; classroom or outside classroom. In addition, the researcher has chosen this method to avoid any attempt to manipulate and control the situation.

Time sampling observation is also employed. This method was used in order to observe an event (children interactions) that has been defined in advance and what occurs before and following the event. Fieldnotes had been recorded during observation sessions.

5.3 Participant of the Study

The participants were selected according to the purpose of this research which is to explore the interactions that occur during learning activities among preschool children. Six (*A, B, C, D, E and F*) of 6 year old children whom parents had been informed about this research and two informants were solicited for the study. Of the 2 children were girls.

This study used purposive sampling where the participants were intentionally chosen by the researcher due to some characteristics. The type of purposive sampling that been used in the study was the random purposive sampling because the purposive sample is too large for the study (though it is still a small sample size). This random purposive sampling increases reliability of the sample and brings the least judgment within a purposeful category (Patton, 1990).

Children's general characteristics:

1. Those who regularly attend the selected public kindergarten administered by Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS in Penang.
2. Those who have been described as frequently demonstrate active participation in social interactions while they were in the classroom.
3. Those who are known by their teachers to have good relationships with other children.
4. Those with the informed consent of the parents.

5.4 Setting/Context and Time Frame

This study took place in one kindergarten classroom at one selected public kindergarten governed and funded by the Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS. It is located in a rural section of Penang state, Malaysia where majority of the children enrolled produce Malay as their primary language.

The children had been observed by the researcher during their learning activities in which most of the time, took place in and outside of the classroom based on the timetable of the kindergarten. Observation sessions were conducted over a four-week period beginning May 5 to May 27, 2011, 2 to 3 days per week, for approximately 110 to 210 minutes per day. The total hours of the observations were 13 hours and 25 minutes (805 minutes).

5.5 Research Instruments

The data in this study was obtained through direct observations and the instrument used in the observations was the field notes.

The Fieldnotes

The fieldnotes refer to the writings or text accounts recorded by the researcher during an observation. In this study, the descriptive field notes of the events, activities, behaviours of the students (i.e what happen, how it is happen) and reflective fieldnotes – the researcher's own narrative and personal thoughts, ideas and themes that emerge during the observations – were recorded.

5.6 Data Collection Procedures

In conducting this study, several steps and procedures are to be adhered to.

Prior to the Data Collection

Before direct observations were carried out, the process of identification of participants and setting is done to making sure these participants and setting can best help the researcher to understand the central phenomenon. In this case, the participants have been acknowledged as the kindergarten children aged 6 in a selected public kindergarten managed by Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS.

Approval

Before the study was conducted, a formal letter of requesting permission to do a research had been sent to the Director of Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS, Penang headquarters. It is to ensure the office will give their consent and assist the study. The letter

was supported with a document from the Institute of Education, International Islamic University Malaysia stating some details of the involved researcher and a brief background of the research.

Informed Consent

Upon the approval from the Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS, Penang headquarters, the permissions from the parents and guardians of the children (participants) were obtained through informed-consent letters. In this letter, all available information regarding the research were provided including the risk which may involve so that each individual can make rational and informed decision as to whether they would like to participate.

Confidentiality, Privacy and Anonymity

A clear statement had been made to the parents and guardians that the data from the study will be treated as confidential, protected and only to be used for academic purposes. It was also been stated that the data will be sent to Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS in Penang upon completion. Pseudonym was also applied where names and other identifying information in this current documentation were removed.

During the Actual Data Collection

Direct Observation

During the actual data collection particularly in direct observations, the researcher observed the children during their learning activities which took place in both settings of within the classroom as well as outside of the classroom. Each interaction demonstrated by the children was recorded precisely.

5.7 Data Analysis Procedures

After collecting all the data, the next procedure was analyzing the data itself. The data analysis for a descriptive case study is described as a process of making a detailed description of the case and its settings (Creswell, 1998; Huberman & Miles, 1998; Marshall & Rossman, 1999; Merriam, 1998; Yin, 1994).

In order to provide detailed descriptions of children's interaction during learning activities, the general analytic procedures as described by Nik Suryani, Suhailah & Mastura (2008) will be followed. This process involved: (1) organizing the data, (2) generating categories, themes and patterns, (3) focusing the analysis and (4) testing the emergent hypothesis.

The organization of data is done in various ways; by reading repeatedly the words for word transcriptions, listing down the data available as memo and reminder, performing a slight editing when necessary, deciding a clean-up to the overwhelming data, and keeping the data into computer in several copies. The second step which is generating categories, themes and patterns is the most complex and demanding task as it involves cross-case analysis. The third step involves focusing the analysis in two ways: description and interpretation. Finally, the fourth step which is testing the emergent hypothesis deal with the process of evaluating the plausibility of developing hypothesis and testing them through the data systematically.

6. Finding and Discussion

6.1 Data Analysis

In this study, the emphasis was given to the occurrences of children interaction during learning activities in these 5 subjects; Physical Education, *Bahasa Melayu*, English Language, Islamic Education, and finally Arts and Aesthetics. In doing so, the interactions between 6 years old children (A, B, C, D, E and F) and teacher/assistant teacher as well as between these children and peers were carefully noted during these times. There were 13 sessions of observation that had been recorded with a total of 805 minutes (13 hours and 25 minutes).

The observation sessions basically took place in the classrooms either at the main hall (children sitting on the floor) or children learning area (with table and chairs). There was only one observation that had been recorded outside the classroom which was the field during Physical Education session. The minimum time length of observation per session was 30 minutes and the longest was 1 hour and 55 minutes.

Patterns of Children's Interaction

There were two forms of children's interaction pattern identified through the course of this study namely children-adults interaction and children-peers interaction.

Children-Adult Interaction

The children-adult interaction was the first type of children's interaction during learning activities acknowledged in this study. It is categorized as follows: the constructive-dialogic and explicit correction.

In this study, explicit correction denotes the teacher indicated the errors or mistakes committed by the children, where the teacher identified the faults and then provided the right answer for it.

i. Constructive-dialogic

The first apparent pattern identified was constructive dialogic interaction. Referring to this study, constructive-dialogic interaction represents the conversation between teachers and children in sharing their different core values, worldviews and identities. Through this interaction, the teachers specifically were able to explore the pre-existing knowledge of children and help to construct children understandings on the particular subject matter.

From the observation, the constructive-dialogic interaction had been recorded through the communications between children and their teachers (the teacher and the assistant teacher) where the children responded to the enquiries, replied to the probing questions and accepted the giving feedbacks and directions.

In the classroom of this study, children primarily studied in mass; they gathered and sat on the floor in the main hall during teaching session. The teacher used a whiteboard with marker pens and sometimes she used smart board with software CDs. Additional learning materials were also prepared and utilized such as flash cards, educational blocks and work books during this time. Often, this teaching session lasted for about 15-30 minutes per session.

Constructive-dialogic interactions were observed in several occasions during the beginning of teaching sessions for example during English, *Bahasa Melayu*, Islamic Education and Arts and

Aesthetics. The observation indicated that the teacher introduced subject matters by posing questions and encouraging children to share their experiences. Thus, children's attention was focused on the teacher's talking and teaching.

Excerpt 1 revealed the constructive-dialogic interaction between the teacher and children during English lesson. The teacher began the lesson by showing a model of zebra to the children.

Excerpt 1

- Teacher : What is this?
Children : Kuda belang (all)
Teacher : We call it is zebra in English (the teacher wrote the word zebra on the whiteboard and spelt it together with children)
Teacher : We can see zebra at the zoo. Have you ever visited the zoo?
Child A : Yes, I have been there with my grandfather.
Teacher : What is the colour of zebra's stripes?
Child B : It is black and white.
Teacher : Yes, it is true boy. Zebra has stripes which are black and white.
(The second animal model showed was giraffe)
Teacher : What is this animal?
Child C : It is a giraffe
Teacher : Yes, good. Why a giraffe does have a long neck?
Child B : Because it has to eat leaves from a tall tree.

From the observation, children engaged in a leisure interaction with the teacher. They were free to answer the questions asked based on their experiences and prior-knowledge. The teacher was able to listen and provide feedbacks to one and each children's responses and directed it to the gist of discussion. The teacher later taught them the spelling of those particular animals and their details. It is observed that children got familiarization with the subject matter through this kind of interaction.

In another session of English subject where the children were asked to colour the pictures of a sea animal; a fish, this constructive-dialogic interactions were observed between the teacher and some children. In this session, children received a picture of a fish and were asked to colour it independently. Excerpt 2 below showed children frequently asked their teacher on which colours that they should use to colour the fish and the water.

Excerpt 2

- Child A : Teacher, what is the colour of fish?
Teacher : Have you seen one? What is their colour?
Child A : It is red.
Teacher : Ok then, good answer. The fish with red colour is called '*ikan merah*'
Child C : Teacher, can I use grey to colour this fish?
Teacher : Yes, you may use it. What is the name of the fish with grey colour?
Child C : It is a grey fish.
Teacher : Grey fish has various names, perhaps that one is *ikan temenung*, the one that your mom used to cook.

From this event, it is understood that the children made contacts with teacher in order to affirm the information and confirm their doings. The feedbacks from the teacher played significant roles in instilling the understanding of new information and helping children to connect it with their experiences.

Constructive-dialogic interaction between children and teacher were recorded as dominant interaction in Arts and Aesthetic subject. In most of the time, teacher cooperated with the assistant teacher to conduct the sessions. Children involved in independent learning with a goal to produce and display their final product. Both teachers acted as facilitators. Interactions took place when the teachers guided the children on how to do things. During glue collage session for example, there were many events where the children asked their teachers on how to glue the coloured paper onto the drawing. The teacher responded to the questions appropriately and sometimes feedbacks were given to guide the children.

Excerpt 3

Child D : Teacher, is it correct what I am doing? (Asking and showing hercollage)
 Teacher : Yes, you have to put the glue on it first, and then paste the pieces on it.
 Child D : Okay. I will do that (After a couple of minutes..) Teacher, is it likethis?
 Teacher : Yes. That's a nice one. Please continue your collage until you complete it.
 Child D : Yes teacher. I will finish it as soon as possible.

In paper folding session as well as making lion mask craft, it is observed that children involved in a plenty of interactions with their teachers and actively utilized their kinesthetic abilities. Through children's constructive-dialogic interaction with their teachers, children received assistance and help to sort out the task and to achieve the goals. Throughout the process of trying to solve tasks, even if the work was not solved, their attempts – both trials and mistakes – were also very significant.

In another event, children responded to their teacher's questions when being asked about the characteristic of animals in *Bahasa Melayu* class. Upon seeing the flash card hold by the teacher, children already replied it with 'Bird' together.

Excerpt 4

Teacher : Yes, this is a bird (smiled and agreed)
 Teacher : Where does the bird lives? (Children took times to answer it.)
 Child B : In a nest.
 Teacher : Correct answer. Bird lives in a nest. How do birds sound?
 Child A : Chrip..chrip...chrip

Another constructive-dialogic talk reported during the observation took place during the same subject, *Bahasa Melayu* when the discussion was about where do animals lives.

Excerpt 5

Teacher : What is the example of farm animals?
 Child A : Fish
 Teacher : Where does fish live?
 Child B : In the water
 Teacher : Where do we live?
 Child B : We live on earth
 Teacher : Yes, we live on earth. It is not the same with fishes. We breathe through the [open air]. Fish cannot live on earth, it will die.
 Teacher : Okay, how about bird? Where does bird live? In water or on theearth?
 Child A : It lives in the air.
 Teacher : Bird lives in a nest. What types of birds that you are familiar with?
 Child B : I know *Kenari, Puyuh*.
 Teacher : Good, okay, how do we spell bird?
 All children : B-I-R-D

These constructive-dialogic interaction motivated children to engage in the conversation critically and practically. Referring to the above excerpt, the questions raised by teacher opened up and gave the children A and B in particular and to the rest of children the opportunity to share their inputs and views. The attempts done by these two children; A and B in giving answers led them to further understand the concept and the theme discussed for that day.

ii. Explicit Correction

The second pattern of interaction acknowledged from the observations was that of explicit correction. With regards to this study, explicit correction denotes the teacher indicated errors or mistakes that have been committed by the children in which the teacher identified the error and then provided the right answer for it.

An example of explicit correction was reported during *Bahasa Melayu* class. Both teacher and children were discussing on tame animals and their characteristics (like hatching eggs or giving birth). This time, the teacher used flash cards of a picture of a chicken and asked open-ended questions to the students.

Excerpt 6

Teacher : Do chicken hatch eggs or give birth?
Child A : It hatches eggs.
Teacher : Where does this chicken live?
Child A : In a house
Teacher : Yes, chicken lives in a house, but not the typical house that we live in. It is called a coop.

Another event of explicit correction interaction that was observed during this *BahasaMelayu* session was as follows.

Excerpt 7

Teacher : Do cow give birth or hatch eggs?
Child C : Hatches egg
Child D : Give birth
Child C : the cow hatches eggs. Its egg is very big and it can explode, Pumm!
Teacher : Whoaa. You are so imaginative. That is incorrect. A cow does not hatch eggs, but it gives birth. The cow's baby is called calf.

From these two events, the teacher supplied the correct answers to the incorrect ones after identifying where they got wrong. Through this interaction, other students can also benefit from the answers.

The observation also revealed a few explicit correction interactions that took place during Islamic Education. The teacher was reported initiating the session by asking the children on the previous lesson which was about Pillars of Islam.

Excerpt 8

Teacher : How many pillars of Islam that we have?
Child C : It has 6 pillars.
Child B : No, it has 5 pillars.
Teacher : It is not the right answer C, it is not 6. Pillars of Islam consist of 5.

What is the first pillar?
 Child B : Pronounce the *syahadah*
 Teacher : Good, very excellent answer.

In the same session, the teacher posed a question to all children before telling a story on the Prophets.

Excerpt 9

Teacher : How many prophets do we have to know?
 Child A : 10
 Teacher : Are you sure 10? Any other answers?
 Child D : It is 15
 Child C : 25
 Teacher : It is not 10, nor 15. It is 25. We have to learn and know about them all. So, today I will tell you a story about the Last prophet, which is our prophet Muhammad (PBUH).

From the observation, it is found that the teacher appreciated each one of children's view. The wrong answers given by the children had excellently corrected by teachers through simple explanations and justifications.

Children-Peers Interaction

The pattern of interactions between children and peers was the second type of interaction observed throughout the sessions. These included sociable interaction, exaggerative talk and non-verbal interaction.

Most of the time, these patterns occurred during children's working period which was after teaching sessions; the teacher usually distributed task to every student and they need to complete it in their designated work book. Usually this session will take around 30-45 minutes per session. During this time, children sat comfortably at their working station (a group of 4-5 children according to their age level) and the teacher assisted the average children to finish their tasks as well as checked the completed tasks of the children.

i. Sociable Interaction

The first noticeable pattern identified during the observation was sociable interaction. Sociable interaction means that children interact with their peers in a positive and casual way without exchanging any information or gaining knowledge. The sociable interactions occurred in various ways.

The observation during *Bahasa Melayu* class revealed that children kept on giving support and encouragement to their peers when doing the assigned task. Three of the children did their work independently and competed with each other to finish it. They enjoyed the time and smiled happily during the session. The short excerpt (Excerpt 10) of the interactions illustrated as;

Child A : Hurry up, we have to do this.
 Child B : Ya. I am doing it.
 Child C : [Stopped; looked at the other two; continued her work].

The sociable interaction was also observed during Physical Education session at the field. The excerpt below illustrates the conversation between four 6 years old children.

Excerpt 11

For the third activity, children had been asked to stand in lines according to their gender. They had to take turns to run for two times in a square shape as instructed by the teacher. The first child ran after listening to the teacher's weasel. They waited and listened carefully for their turn. Those who had finished their task would wait at the back of the lines. It took some time to wait for other friends to finish running, thus those who were waiting chatted with their friends. They talked about their surrounding which was about to start raining at that time. The cloud was getting so dark and moving slowly and the children could clearly see that. Four 6 years old boys were talking about the dark clouds.

Child A : See, the cloud is so dark.
Child B : It's going to rain.
Child A : The rain will come down heavily.
Child B : Look, my hand; there is water from above.

In one event which happened during Islamic Education, two 6 years old children, C and D were working on the given task in their work book. They talked about their last night activities.

Excerpt 12

Child C : Did watch the TV program yesterday?
Child D : Chinese program, right?
Child C : TV 2, right?
Child D : No, it is on TV 5.
Child C : I watched them fighting, pump um pum.

The same pattern of interaction had also been recorded during folding activity in Arts and Aesthetic class. Children did this activity in a big circle at the main hall. They sat together, listened and watched how their teacher folded an A4 paper into 16 boxes. Child A, a six year old boy shared his experience in folding papers to the younger children during this session. He managed to fold it nicely and correctly after being confirmed by the teacher. Thus he conversed, instructed and corrected his peers and showed them how to do the folding.

ii. Creative Talk

Undeniably, children involved in countless interactions with their friends through their days. It was exciting indeed to watch and listen to the context of their talk. As far as this study is concerned, children occasionally engaged in magical, illogical, symbolic, humorous and exaggerative conversations. These interactions were referred as creative talk where the ideas and inputs uttered by children are novel and playful.

In Islamic Education session, there was an event where the children engaged in illusory and illogical talk. This had been identified when the children were busy completing the task. The occurrence is demonstrated by the excerpt below:

Excerpt 13:

The lesson started with the teacher writing on the board the Arabic numbers; 1 to 5. Children then were asked to pronounce it together. Those particular numbers were repeated for 3 to 5 times. After that, she distributed a piece of A4 paper to each

child. They were asked to outline their right hand on the paper, write an Arabic number on each of the outlined finger and colour it. Some children managed to outline their hand by themselves, while the others were helped by the teacher. Some of the children managed to get their work done earlier. They were assigned to read a spelling book individually. The teacher scaffolded some of them.

- Child A : What is the colour of your hand? (Referring to the outline of the hand)
Child B : [Quiet; just showed the drawing to his friend which was green in colour].
Child A : It looks like a ghost's hand. [Ghost dance].
Child B : My father had seen a ghost.
Child A : Ghost does not dance. If you say ghost exists, it will come you tonight.
Child B : If we colour it with red, the ghost will be bleeding.

It was also apparent that during the observation, children communicated with their friends through symbolism or symbolic thought in Arts and Aesthetics subject where children normally engaged in painting, drawings and handicrafts. In the task of making a lion mask craft, upon finishing the mask, they wore it and pretended to be a lion.

Excerpt 14

- Child A : See, I'm a lion in a jungle.
Child B : Haha..I'm also the fierce one in jungle. I'm going to eat you!
Child A : You cannot eat me. Let's us find C.
Child B : Let's go and eat him.

The two examples below showed the events where the children engaged in exaggerative talk during learning activities. Excerpt 15 was a conversation between two children about a cow, of whether it hatches eggs or gives birth during *BahasaMelayu* lesson.

Excerpt 15

- Child C : Hatches eggs
Child D : Gives birth
Child C : The cow hatches eggs. Its egg is very big and it can explode, Pumm!

In another event of the same session, a child was telling his friend about ray fish during discussion on characteristics of animals.

Excerpt 16

- Child B : Do you know ray fish?
Child A : Yes, ray fish hatches eggs.
Child B : Ray fish is very dangerous, especially the tail.
Child A : We can eat ray fish.
Child B : Ray fish is yummy; the taste of its flesh is like a big crab!

iii. Non-verbal Interaction

Another pattern that was recognized during this study was non-verbal interaction. Non-verbal communication occurs when children observe and imitate their friends' actions without conversing, and through this, they can expand their knowledge and information.

Excerpt 17

Child A : What is the colour of your hand? [referring to the outline of the hand]
Child B : [Quiet, just showed the drawing to his friend which was green in colour]

Even though it was a non-verbal communication where there was no verbal exchanges, child A understood the information he got from his peer about the colour that he used in the activity.

The other non-verbal interaction involved in this study was through copying the movements made by friends. This pattern was recorded during the three sessions of Physical Education where the teacher introduced games for them to play and the children followed the instructions. Children observed how their friends play first and later performed it. Through this process, children developed understanding and achieved the goals of those particular activities.

During glue-collage activity in Arts and Aesthetics class, children worked at their table and each was given one drawing sheet and a piece of coloured paper. They had to share together as a group the glue which had been put in two pallets and placed at the centre of the table. It is observed that children involved in non-verbal interaction when someone took the pallet and put it near to him/her, the other friends would later take the pallet back and put it at the centre of the table.

The patterns of children's interaction that had emerged from this study are summarized in Table 2. and Table 3. Overall, the patterns of children-adult interaction are constructive-dialogic and explicit correction while the patterns of children-peers interaction are sociable, creative and non-verbal.

Table 2: Patterns of Children-Adults Interaction

Patterns of Interaction	Explanation
Constructive dialogic	Communication between children and their teachers including the assistant teacher where the children respond to the enquiries, reply to the probing questions and accept the giving feedbacks and directions
Explicit correction	Teacher indicates an error or mistakes that has been committed by the children, identifies the errors and provides the right answers for them

Table 3: Patterns of Children-Peers Interaction

Patterns of Interaction	Explanation
Sociable	Children interact with their peers in a positive/casual way without exchanging any information or gaining knowledge
Creative	Children involve in a novel and playful talk through magical, illogical, symbolic, humorous and exaggerative conversations with their friends
Non-verbal	Children observe and imitate friends' actions without conversing, and at the same time are able to expand their knowledge and information

6.2 The pattern of children's interaction during learning activities

The patterns of children's interaction that emerged from the data were categorized as follows: (1) children-adult interactions that include constructive-dialogic and explicit correction talk and, (2) children-peers interactions that comprise sociable, creative and non-verbal interaction.

The first pattern of children-adult interaction observed was that of constructive-dialogic. Dialogue is not a new term in education and learning arena. It has been used widely decades ago as a teaching tool and as a medium to express opinions. According to Freire (1970), dialogue is a legendary form of written or spoken interaction and information exchange between two or more people. Usually, in some circles, dialogue is used in an organized planned conversation to avoid conflict and anger. In other situation, dialogue is used as a problem solving method. Dialogue demands partnership relationship between students and teachers. Through dialogue, people can practice to attend to different viewpoints, encourage support, work on difficulties issues and develop skills. Moreover, this open and comprehensive process does significantly benefit the individual or group that participates in it.

Dialogue also leads to organizational and community level changes in terms of better match and reciprocal understanding. Banathy (2003) describes dialogue as "a discipline, consensus-building process of collective communication based on shared values and beliefs". William Isaacs (1999) in his book, *Dialogue: And the Art of Thinking Together* posited five important elements for a learner to use dialogue in classroom which are "respect, listen, suspend judgment, free yourself and communicate your reasoning process" (as cited in Kenefick, 2004, p. 1). Through respect, a learner put himself/herself as equal to others; everyone is important and legal to the learning process. For listening, that person tries to understand and not to correct other's opinions while suspend judgment is to learn to hold them apart without feeling the urge to act upon them. The fourth element which is free yourself refers to balancing the inquiry and free from having a narrow mind. Finally through reasoning process, a learner talks about his or her assumption and how he or she derives it. Here, there must be underlying facts that support his or her belief.

From the proceeding points, it comes to our understanding that dialogue emphasizes listening to dig out understanding, initiate discoveries, ripens common values and permits participants to share their own opinions. Dialogue anticipates that each member will develop understanding and may decide to act together with collective goals.

Constructive dialogue is a typical term used in educational technology field. It denotes the interaction which takes place between a receiver of knowledge and the technology and media he or she use. In this context, learners make use of the information that they received from technology and form their own understanding which centers to the new inputs gained together with the existing knowledge and experiences. In this sense, the learning process involved is independent, individualized, interactive, interdisciplinary and intuitive. Some features that are essential for constructive dialogue include mutual respect, specified goals, clear statement and explanations, tolerance to variances and communal ground for dialogue (Watson, Correia, Lee & Schwen, 2004).

As far as teaching and learning approach is concerned, constructive-dialogic interaction is a term coined based on characteristics of constructivist teaching. The basic principles of constructivist teaching comprise the cooperation between children, teacher and peers during working in classroom, stimulation and recognition of children's interests, acknowledgment of children existing knowledge and learning styles, invites questions and inquiries from students, challenge their abilities, allocate time for children's quest and investigation and assessment (Devries, Zan,

Hildebrandt, Edmiaston & Sales, 2002). Constructivist teaching demands learners to be active, inquisitive, critical and independent in dynamic and energetic atmosphere.

With regards to this present study, constructive-dialogic interaction can be understood as the interaction between two or more people who converse in a harmony and dynamic environment by having a framework of not to conquer the process but to progressively construct and expand the knowledge and understanding on a particular subject matter. The data gathered reveal that children engaged in this type of conversation during the introduction of subject matters, the explanation of the subject and in most of the time during in-class tasks.

The implication of constructive-dialogic interaction varies. Through this process, children get familiarization on the subject taught, able to affirm and confirm the information received with their doings, able to connect the inputs with their experiences and thus can further understand the concept learnt. This interaction also grants time for children to think deeply, creatively and effectively about the solutions (Gooding and Stacey, 1993; Mulryan, 1995; Whicker, Bol & Nunnery, 1997).

The observation also revealed explicit correction interaction between teacher and children. In a study to measure the effectiveness of different types of feedback on students writing abilities, Robb, Ross and Shortreed (1986) explained that explicit correction is where mistakes are pointed out and right answers are offered. In this present study, explicit correction refers to communication between teacher and children in a way that the teacher pointed out mistakes done by children, identified the errors and provided right answers. It is recorded that the children involved in this type of interaction when they were trying to connect the subject taught to their prior knowledge and experiences. In most cases, children got it wrong. However, the teacher did appreciate their responses and provided them with the right answers and appropriate explanations. Children felt at ease to share their opinions and free to interact with their teachers. By giving opportunities to children to express their views, children would feel appreciated and confident with themselves.

Next, the children-peer interaction that was observed involves sociable interaction. Sociable interaction refers to conversation between children and their peers in leisure and positive ways. Generally, children were novice artists, so they needed their friend's help to confirm and help them in their art works. Watching and talking to children indeed triggered more ideas about what to do with the materials or tasks. In most cases, the feedbacks and responds from friends were accepted as guidance and they tried to improve where they did wrong. By this interaction also, children developed their interests and discovered the appropriate and the best solution that they can apply to solve the given task.

In fact, children explored and experienced lots of opportunities to communicate during working or learning. This is because in the setting of this study, children primarily worked individually yet collaboratively (like sitting in a small group of 4-5 children) in completing the given tasks. Most of the time, when involving in this activity, the children noticed their friends' progress next to them and they often interacted with each other through verbal communication. It is through this sociable interaction children could express themselves and establish harmonious rapport with their friends. . There was also a pattern of creative talk identified between the children. Creative talk refers to novel and playful inputs expressed by children when conversing with their friends. In the observational notes, the researcher found that children commonly engaged in exaggerative, imaginative and magical things such as ghost and abstract variable such as romance. The data showed that they also involved in pretentious play. Indeed, young children learn a lot through imagining, exploring and discovering new things as their mind are fresh, capable and resourceful.

Through pretentious play, children imagine and transform objects, imitate roles of other people, give voices to toys and create scenes for their play.

Finally, non-verbal communication was also observed as one of interactions between the children and their peers. Non-verbal communication refers to children involvement in non-spoken interaction where they use their body language and facial expression to respond to their friends' questions. The result reported that they also involved in copying their friend's movement during Physical Education session.

7. Conclusion and Future Recommendation

7.1 Implications of this Study

Since this study is a case study rooted in the tradition of naturalistic inquiry, it is not intended to be able to be generalized to other investigations. Rather, it was conducted to explore in details about the concerns associated with children's interaction during learning activities at the selected public kindergarten classroom governed by the Social Development Department (*Jabatan Kemajuan Masyarakat*), KEMAS in Penang, Malaysia. The result of the findings is directed to build on and provide additional inputs to the current array of researches that have been conducted in the areas of social development, learning and interaction in the early childhood education. Though there are an extensive body of research in the area of children's interaction in terms of early childhood education settings, this study provides a broader understanding of social development through interaction of 6 years old children during learning activities. The findings of this study also offer possible practical strategies of how children in one classroom would be able to interact with adults and peers during learning activities.

From the observations of children interaction and the analysis of observational field notes, this study revealed three implications for practice. They relate to pedagogical approaches precisely in the approach to children with diverse intellectual abilities and deliberate planned creative activities as well as the ways to boost children interaction and the apprehension of information from children's utterances.

First, the patterns of children interaction during learning activities found from this study and this is able to serve as a basic foundation and information for teachers to utilize effective pedagogical approaches in teaching. Teachers can benefit from the children's abilities and strength to empower their intellectual, social-emotional development by designing practical and inspired learning activities inside and outside the classroom.

Second, early identification of patterns of children interaction will allow teachers to focus and plan effective activities that will encourage and increase children's engagement and socialization actively among their friends and adults.

Additionally, this study revealed and required concern of the context of topic-based conversation between children and teachers as well as peers in mass and small group activities. There are a number of explanations that can be put forward here especially in light of data relating to the utterances content and types.

7.2 Limitations of this Study

The limitations of this study can be divided into two broad categories: limitations of the particular study and limitations of the methodology used to conduct this study. In this present research, there

are limitations of information gathered as children were only studied by observation. Perhaps, more interesting facts will be revealed if other methods were employed such as interview session with the children themselves as well as their parents. A lack of generalization is always a limitation of naturalistic exploration. This qualitative research focuses on examining what was happening and their implied meanings, but a wider picture or generalization of findings is impossible. Qualitative study also depends partially by the researcher and can be influenced by his or her biases.

7.3 Conclusion

There were extensive researches done to understand children development in various ways. With regards to children's social and cognitive development through interaction, this present study showed significant explanations in the area of 6 years old children's interaction which describes qualitatively their pattern and nature as well as factors that supports and hinders their interaction during learning activities. Also provided are several suggestions for teachers, parents, policy makers, administrators as well as respected bodies to understand this situation better and work together towards betterment.

Nevertheless, there are still many loops and gaps that can be explored within this domain. Since a long journey is ahead us as the 'specialists' in this education and psychology field, we must not remain dormant where we are. We should move forward to investigate and reveal interesting and fruitful facts about children's world to the society in order to appreciate and value these young minds and to educate them well.

7.4 Possibilities for Future Research

The findings of this research study have brought about new directions for future research. There are four recommendations for future research. First, this study did not employ interview with the teachers to know their perceptions and opinions on children's interaction during learning activities. The interviews with children as well as their parents can also be very exciting for investigation. In particular, of parents influence on children's interaction, children's level of communication at home with their siblings and so on.

Secondly, another recommendation is how children's interaction during learning activities differed at different setting and time. During recess, free-time and outside classroom activities, children's interaction may vary in terms of the pattern of interaction and the frequency of interaction.

Next, the comparison of patterns and factors that support and hinder children's interaction during learning activities at different types of Malaysian pre-school or kindergarten such as PERPADUAN preschool, ABIM and private kindergarten can be very interesting to be investigated.

Finally, the influence of children's interaction on physical, cognitive, language as well as emotional development can be an important research topic as well. Because children's development cannot be separated from the above-mentioned entities, therefore all developmental domains should be dealt with in future research.

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