I, Man-Ching Yen, hereby submit this original work as part of the requirements for the degree of: Master of Design in Design. It is entitled: Principles For The Successful Development of Social Playthings.

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Principles For The Successful Development of Social Playthings

A thesis submitted to the
Graduate School
of the University of Cincinnati
in partial fulfillment of the
requirements for the degree of

Master of Design

in the Department of Design
of the College of Design, Architecture, Art, and Planning

by

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ABSTRACT

The purpose of this study is to enhance interpersonal skills between preschoolers and their peers. Young Children, ages 3 through 5, learn mostly from people and the outside world by mimicking and interacting with others. Most preschoolers are not able to express their thoughts and feelings properly. However, since children are social learners, they need to learn how to communicate with others in order to contact with and learn cognition from their surroundings. The better and sooner children learn how to communicate well; the more easily they can form good friendships, which in turn, will increase their self-confidence and self-esteem.

Current educating settings are specially designed to help children in some ways that are academic intended. However, early childhood educators and parents are concerned about the children’s social ability instead of pre-academic skills. Finally, the outcome of my study would be principles for designers, educators and parents. These principles intend to enhance opportunities for preschoolers to play with peers as well as share their emotions and opinions with others. The benefit of good communication skills is invaluable.
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CH 1. Introduction

1.1 Purpose of this Study

Designing playthings and environments to enhance peer interaction skills for children, ages three to five years old, requires that designers become acquainted with academic knowledge such as child development, child psychology, child ergonomics, behavioral science, and play research.

“Respect” and “communication” skills are important elements in preschool education, and learning to respect others has long-term influences on children, providing them with a neutral point of view towards people and complicated social circumstances. Preschoolers with good communication skills will benefit in the future by having more and better opportunities in schools, jobs and life experience.

Another important issues in preschool education are expanding the possibilities in children's daily life for interacting with peers and making friends in situations that may include some conflict. Creating an environment for preschoolers that teaches them communication skills that will benefit them in the future and cultivates a willingness to play with others is a virtual educational core that makes parents want to send their young children to schools.

Focusing on communication skills is important because many young learners usually cannot express their feelings and thoughts in the right words and appropriate behavior. The development of language skills is a part of the communication skill set, and is increasingly considered a major necessity for preschool years. Educators working with preschoolers need to listen carefully and help children learn how to express themselves so that adults can provide what they needed.
Children are “social learners” and they learn to interact with the world by copying the behavior of other people. Children need to know that they are being listened to and heard. This helps them to build a trusting rapport with adults and peers and also helps them build better relationships. The more children learn how to listen to others, the better they will be able to assess their abilities and interests and the better educators can help children plan for their next steps in learning and development. Preschoolers can easily form their friendships, be confidential and increase self-esteem through good interpersonal skills. Parents, regardless of nationality, have increasingly developed a special expectation that their children practice peer-to-peer interaction and communication skills in preschool education.

Preschool education plays an increasingly important role because it provides an environment that relieves the pressures of parents and society on the children. In preschool, children can learn to speak their mind and develop skills for solving problems. This research has focused on one of many important aspects of preschool education; an exploration in preschool children’s peer interactions. The very important qualities of sympathy, empathy, and concern for others, which are necessary for developing successful interpersonal skills, can all be learned in preschool.

This topic introduces new principles, early childhood education observant of Universal Design, and then relates these principles to solve the basic social needs of children. These principles would ideally help improve children’s skills in communicating and create good relationships within family, friends, school and society in general. This study will focus on families and children of ages three through five who experience diverse culture surroundings. As Patricia Ramsey, an expert in early childhood
development specifically in social development, states, children’s ability to be socially competent in various circumstances is limited by the lack of diversity (Ramsey, 1986). Preschoolers spend most of their time around their families and preschools; their parents construct their own culture to compose a family but also send their children to preschools constructed by the cultures of children and educators who come from different backgrounds.

1.2 Background Research

Preschool is a time of pre-education that allows children to prepare social and academic skills prior to the beginning of their formal education. Both in America and Taiwan, preschool is an optional elective part of the statutory education system, after which most children begin their formal schooling at the age of five or six. Children between the ages of three and five are in a special period for the formation of their personalities and the development of positive social characteristics. Also, it is a time of extreme and rapid developmental changes, and young children make these transitions with varied degrees of speed and dimensional changes. All the developmental aspects in this period are so significant that not one of them could be left out of our consideration.

One of the important components of preschool education is teaching children to develop a positive awareness of the differences within peer communities and the ability to accept these differences with respect and understanding. At this stage, children develop social skills that are crucial for interaction with others. Parents and educators should know the milestones (both physical and mental) of this stage in order to have realistic expectations for their children. Knowing what children can do at a given age can benefit
adults in finding potential problems and creating opportunities to practice and hone children’s ability to function healthfully in their natural settings. Knowing their developmental milestones, we can also discover the special possibilities and characteristics of the child.

Today, we are facing a problem of rapid globalization in which cross cultural situations abound and this study benefits by comparing Eastern and Western preschool education systems. America is ultimately a nation of immigrants and, as a result, is a cultural blend in every sense of the word. Not only do recent immigrants from all over the world bring their cultures to the United States but also all Americans, in one way or another can trace their ancestry back to another culture. Taking this background into account, this paper uses America to represent the Western education approach. The preschool educational focus in America and Taiwan are quite different in purpose. Children with different cultural contexts will behave and learn in different ways. Preschools need to provide an environment that gives all children equal opportunities to communicate. By applying a cross-culture education study in different societies, we can find a better and more rational way to provide children with an environment that offers equal sharing and communication opportunities.

In the United States, people educate their children through language learning to cultivate an independent personality, an ability to solve problems, and cognitive development. Preschoolers absorb the ideals of an education that is not only focused on building skills for different means of expressing themselves, but also is also geared toward training them to present their emotions and opinions orally. In America, preschool education emphasizes self-development and self-expression so that children might easily
gain necessary abilities from group activities. Asian preschools not only teach reading, writing and mathematics, but more fundamental pre-academic skills, including perseverance, concentration, and the ability to function as a member of a group. In the United States, preschool educators view words as the key to promoting individuality, autonomy, problem solving, friendship, and cognitive development in children. Children are taught the rules and conversations of self-expression and free speech. In contrast, Taiwan’s point of view believes enunciation, diction, memorization, and self-confidence in speaking and performing are the core skills that parents and society expects preschoolers to have. They believe that letting children speak is a shortcut to success.

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1.3 Methods of Research

This study began in June 2009 and has continued to May 2010, and is built on literature and observational research.

*Figure 1. Thesis Development Timeline*
CH 2. Research

2.1 Literature Review

2.1.1 Research Overview

American psychologist and education reformer, John Dewey has said that good education should have both “a social purpose” and purpose for the individual student. Once a person establishes their unique patterns of belief and interaction with others in a social environment it is very difficult to alter their patterns. As we get older, we gradually accumulate experiences that we believe in, thus it becomes much more difficult to abandon something that matches that which we believe to be factual or right. For education, the long-term influences really matter, but so does short-term quality of educational experiences. Parents and educators are responsible to educate the next generation. Consequently, it is essential to facilitate educational experiences for children that are valuable and beneficial for their future quality of life and which can better enable them to contribute to society. The fact that children enjoy and engage in play seems to be a proposition that is universally true. Friedrich Froebel, a German educationalist, has had a great impact on American society in the nineteenth century. He brought attention to the influences of play on children and confirmed the role of play as essential in cognitive, social, and academic development. According to many researchers, play is beneficial to preschoolers for inner personality learning, self-discovery, and interaction with others. Froebel's continuing influences lay in his concern for learning through playful activity. There is a growing body of evidence supporting the connections between cognitive competence and social play.
Jean-Jacques Rousseau (1762) proposed that each time young children play something; they find some instructions from the material. Rousseau placed importance on young children’s rights and suggested that children should have the rights to control and direct their own learning. Children are unique and valuable, so the proper education for them should be designed according to their nature, and in respect of individual differences, instead of imposing too much limitation. Rousseau also states that what children learn from their peers during play is worth much more than what they learn in the classroom. Considering this fact, how to develop joyful and educational playthings for children that can engage them in interactions with their peers is a fundamental ingredient of plaything design.

The culture of the family directly impacts a child, even if the child has a sense of his or her own culture though understanding cultural differences. Preschoolers who engage together currently influenced play were viewed as being influenced by the major media in their development and learning. How we look at and interpret children’s play is different from culture to culture. Play also serves as an acculturative mechanism (Schwartzman, 1978). Through play, preschoolers can learn their social roles, norms, viewpoints and values. Playful social interchanges start in an inherent family interaction with their young children. Children, from aged three to five, and who are from families with extended family members or a multi-generational family, usually exhibit multi-age or cross-age development stages. In this cultural context, preschoolers can easily develop their social-cognitive skill so that they may first explore more about the meaning of “others” and then “self”. In other words, a single child who comes from a nuclear family tends to develop more slowly with less frequency in social exchanges. Young children with these cultural
phenomena will automatically have an increased ability to visualize playing with others, observing others intercommunicative expressions, and bringing awareness of the existence of peers engaged in this type of play. This is so even though many psychologists and researchers have put forth some theories that knowledge of “self” comes prior to the knowledge of “others” during the preschooler period. For example, in the cultural context mentioned in the previous paragraph, the developmental stages of children can be a cross age result or even reversed in multi-age and multi-generational family environments.

Mildren Parten’s Theory (1933) provides a fundamental knowledge for examining the increasing social maturity of children. Her theory is based on the following developmental stages: (1) Solitary play. (2) Parallel play. (3) Associative play (4) Cooperative play. We are living in a society with rapid globalization and we all have a mindset much like a frame, which is shaped by our culture. Economic factors and globalization directly and indirectly influence our young children’s play. Play-oriented learning and experiences are culturally contextualized from many families with Asian backgrounds. Even if children are engaged in academic activities or work, they are still in a kind of play. That means that people with an Asian social phenomenon normally turn study into a playful process or a fun study. According to past research, there is a lack of focus on improving peer interaction skills through diverse cultural contexts of children’s play, and this area has not been well explored yet. Parten’s theory lacks cultural context and therefore in the developmental stages did not show the diversity of young children’s developmental abilities.
Jean Piaget (1896-1980) described the mechanism by which the mind processes new information, stating that “A person understands whatever information fits into his established view of the world. When information does not fit, the person must reexamine and adjust his thinking to accommodate the new information”. Piaget advocated Cognitive Development Theory, which defined the mechanism of how the mind processes new information. People will understand and absorb whatever information fits into their existing point of view from the environment. According to Piaget’s research, a person begins to develop a formal way to understand and assimilate new information during the ages of three through five years old. Prior to this period, preschoolers have established sensory-motor skills (birth to about age two), and during this time gain preoperational skills, which begin about the time the child starts to talk to about the age seven. This is founded by a Period of Concrete operations (ages six through twelve), and Formal Operations (ages twelve through fifteen). Each child has almost the same developmental sequences; however, there still remains some time difference in achieving developmental milestones. An ideal plaything for preschoolers should provide them opportunities of tolerance to individual differences that they could used to actively explore themselves and develop cognitive skill. This study uses Parten and Piaget’s theory as a fundamental knowledge base, and then includes cultural context to construct a full and well-balanced map of preschoolers’ social play.

Many early childhood educators believed that learning was active and schooling unnecessarily long and restrictive. John Dewey’s idea was that children came to school to do things and live in a community, which gave them real, guided experiences with peers and teachers that fostered their capacity to contribute to society. For example, Dewey
believed that students should be involved in real-life tasks and challenges. To create situations and circumstances that encourage preschoolers’ willingness to interact with peers is a means of experiencing real-life.

2.1.2 Peer Interaction

The urge to play with others, in addition to being fun, is often driven by the desire to be accepted and to belong. Peer interaction represents peer culture and reflects the unique social world preschoolers construct from everyday experiences with their peers. In a usual day of a preschool classroom, two children might have an argument in which child A snatches away child B’s toy. Child B tries to recapture his toy and suddenly Child A runs away. In order to take the toy back, B grabs the toy but scratches A’s hand accidentally. Then, A cries in complaint against B to the teacher right away. This kind of story happens every day in preschool, and this should be solved among children themselves. It is an important discussion to improve peer interaction skills for enhancing preschoolers’ social skills so as to help children learn problem-solving abilities in relationships.

Piaget believed that peer interaction is beneficial to cognitive as well as social development, particularly for the development of role taking and empathy. Interaction is one major skill that enhances children to learn how to lead, follow, suggest and coordinate such social skills to become more accommodating to group life. In order to build and sustain different types of peer relationships and social experiences, particularly peer conflict, children obtain knowledge of themselves by watching each other with a range of social interaction skills. “Mixed-age peer interaction” also contributes toward the social-cognitive and language development of a younger child while enhancing the
instructive abilities of the older child (Hartup, 1983). According to research, the three following theories can explain the importance and influences of peer interaction to preschoolers.

![Figure 2. Categories of Peer Interaction related theories]

**A. Theories of interpersonal needs**

William Schutz (1966), a social psychologist, presented the concept, “Fundamental Interpersonal Relations Orientation”; he assumed humans have three kinds of fundamental interpersonal needs, which include “affection”, “inclusion” and “control”. The needs of affection reflect that people have desires to express and to be loved. Inclusion needs address an individual’s needs to feel a sense of belonging in groups and be identified as a member. Additionally, the need to control is the desire of a person to use his/her mind or actions to influence others around them. Schutz considered the harmonious interpersonal relationship to be constructed from the complement of these
three aspects of needs that had all been found to influence an individual’s motivation to seek friendship.

American humanistic psychologist, Maslow announced his “Need-hierarchy theory”. This begins with Physiological Needs as the basic stage, follows up with the sequences of Safety Needs, Needs of Love, Affection and Belongingness, Needs for Esteem, and ends with the pinnacle of Needs for Self-Actualization. When the basic physiological needs reach a person’s satisfaction, interpersonal needs follow directly behind. Dan McAdams and his colleague Michael Losoff (1984) wrote a book *Friendship Motivation with personal characteristics*; they pointed out that an individual acquired self-satisfaction by developing interaction relationships. If an individual were deprived opportunities to develop positive and proper social relationships, the isolated person would experience loneliness and depression. Young children need friendships and acceptance by others. This helps them develop self-confidence and happiness, and they feel a sense of belonging and support.

**B. Social Learning Theory**

From a point of view that considers the socialization of young children, Deborah Hendrick, as an experienced preschool teacher, emphasized that preschoolers seek to be together with others because they can strengthen their identity, and mimic others and confirm that his or her performance is in accord with peer culture. According to another research, children learn socially acceptable behavior when certain performance is positively reinforced by adults (Grusec and Redler, 1980) or peers (Furman and Masters, 1980). When actions fulfill children’s needs, they will continue to show the behaviors continuously. Otherwise, if the reactions cause unexpected results, children
will stop the behavior. To reinforce preschoolers’ performance two methods can be used, positive praising and rewarding, and negative punishment. In order to correct children’s misactions, reinforcement could be a useful tool to apply among preschoolers and this skill is especially beneficial to shy and isolated children. Hartup (1979) described peers as the crucial medium of socialization and as the clearest observers. Rubin (1980) indicated that peer-to-peer interaction edifies the improvement of social skills, self-understanding, group identification and belonging to activities. The following are descriptions of those viewpoints:

a. **Improving self-expression**: this can help preschoolers to construct social interaction relationships in peer culture. Self-expression is a necessary component to peer interaction in order to deal with potential social problems including a lack of adequate and harmonious communication.

b. **Improving self-understanding**: as pre-educator Katherine H. Read (Sociology of Children by Corsaro) argued a harmonious happy family can give children a sense of safety, however, the experiences of peer interaction help them not only to genuinely understand themselves but also give them the concept of real world. Throughout peer interaction processes, young children understand their own abilities and feelings even more. Children have positive competitions between peers; for example, they like to compare the differences with their peers, and they like to be praised and affirmed. From positive competitions, comparisons, and affirming or criticizing of peer groups, children can examine their feelings and abilities in order to push themselves.
c. Improving the sense of Belonging: Agreement and acceptance from peers can eliminate the degree of anxiety associated with being separated from parents. Preschool education professor Erich Fromm (1987) mentioned people can easily find self-satisfaction and feel comfort during harmonious peer relationships. If children have some close friends in school and are welcomed by the group, then they are more likely to enjoy going to school and have stable emotions. Otherwise, a young child who is lacking affirmation from a peer group is usually disengaged and unexcited about school life, especially during interactive activities such as cooperative games. This type of child is more likely to spend most of his or her time watching other children play or engaging in isolated and individually focused work; moreover, they use excuses of physical ailment to avoid classes and may experience separation anxiety or display an unstable temper.

C. Interactive Development Theory for Young Children

A child sociologist Phil Erwin (1998) analyzed what causes children to need friendship by studying relative literature of peer relationships. The following are the possible reasons: 1. Opportunities to practice social skills, 2. Finding self-confidence from intimate relationships, 3. To exchange and examine knowledge or information, 4. To stimulate social cognitive development, 5. To obtain a cooperative relationship and support form society, 6. Opportunities to express emotion.

A Child psychologist Willard Hartup (1989) pointed out that during preschoolers developmental processing, there are two kinds of relationships that greatly affect children in long-term development: those between preschoolers and adults, and those between preschoolers and their peers. Friends who can provide examples for a child to follow are
a significant medium for that child’s socialization, and are often the most important
foundation for children to accomplish complicated interpersonal relationships. Masud
Hoghughi (1992), author of Assessing child and adolescent disorders, said that when
preschoolers have difficulties when they are young, they more likely can not develop
satisfying relationships with people later in life. William Damon, a Professor of
Education at Stanford University, proposed that the development of society is the
outcome of interpersonal reaction that is comprised of accumulated experiences, which
provide motivations for learning cognition and intelligence.

Therefore, children obtain the necessary knowledge and skills to survive in society
through this kind of learning. In daily home life elder family members usually have
responsibilities to teach, give instructions, and care for young children. In contrast, peers
in a school environment give less criticism and instruction because they interact as
equals. Therefore, this situation provides opportunities for young children to understand
and respect their peers’ points of view, exchange experiences and learn together. In the
families, there are age differences, which provide unequal rights to family members; in
peer-to peer relationships, the individual has more freedom to think and learn. There is no
authoritative figure to obey.

Preschoolers’ age can be contrasted with the play age of their Ego Development
stage, which is based on the relationship of initiative versus guilt according to Erik
Erikson’s stages of psychosocial development theory. In this period, young children
gradually begin to have feelings correlating to self-responsibility and relationship
conflicts. Children have a desire to copy the people around them and take initiative in
creating play situations that push them to learn and react to those situations; however, the
sense of guilt can obstruct their social skill development. Professionals suggest educators make up stories to experiment with the concept of what children believe it means to be adults. For example, Barbie and Ken, toy phones and miniature toy cars, are used to play out roles in a make-believe universe.

For preschoolers, the peer-to-peer environment provides learning opportunities and encourages children to interact and develop, the knowledge and skill of social interaction is an essential ability that is learned. As a result of similar research, children’s social knowledge, which is based on peer interaction experiences, is the foundation of social interaction. In the preschool period, the ways in which educators guide children to develop positive friendships have greatly influenced children’s long-term social development. Parker and Asher (1987) state that those children with peer interaction deficiencies may develop problems with social accommodation and emotion. Preschool education professionals, Coie & Dodge (1997) believe that social isolation may eliminate children’s potential in problem solving. Peer interaction for children aged three to five years old is based on equality, fairness, and mutual cooperation. Educators and parents should make children realize that their peers like positive and friendly behavior, but not selfishness.

Psychologist Mildred Parten proposed that children progress through six social levels of play, each of which is more complex than the previous one. Parten engaged in observational research especially on children’s social play, and she explored social levels of play following the sequences of play types (1.) Unoccupied play: children are relatively stationary and do not anticipate any play or interaction and just appear to be performing random movements with no apparent purpose; (2.) Solitary play: children
appear to completely engross in play and do not seem to notice other children in their immediate surroundings. This type of play is often found in children between ages 2 to 3 years old; (3.) Onlooker play: children take interest and spend most of their time simply watching the peers play but do not join in. However, sometimes they talk to the children being observed, asking questions or giving suggestions. This kind of play involved only observing specific groups rather than anything that happens around peers; (4.) Parallel play: children play independently and mimic other children's play but do not actively engage with them. They may use the same toy, but they do not try to influence or modify the activity of the children near them; (5.) Associative play: children are more interested in peers than the toys they are playing with. The communication is around the common activity. This is the beginning stage that involves significant social interaction changes between children while they play; (6.) Cooperative play: children play together in a group and have the concept to organize for the purpose of making some material product. For example, they appear to create situations of adult and group life, and they often adopt roles and act as a story. This study combines associative and cooperative play into one play, peer play.

At each of these levels of play more social skills are required for the child to interact successfully with his or her peer group. From these six levels of social play, the three different levels of interaction between children and peers start from indirectly to directly contractive and then eventually into cooperative interactions. This theory can also be used to evaluate children’s social play developmental stages. Solitary play, which is less common as age increases, can give people the sense that solitary play is a sign of developmental immaturity. However, some recent research discovered that solitary play
is a positive behavior of children to explore their potential interest. Parallel play usually happens among older children, and it is the bridge to enter group play. This shows that solitary play may not merely be immature. According to research, children who relate poorly to peers interaction can begin playing with some special systematic toy away from groups and learn from observing peer play skills in order to mimic better social interaction skills.

2.1.3 Peer conflict: problem-solving strategies

Conflict naturally occurs in human interaction (Simmel, 1950) and, if managed properly, can be a very constructive avenue for needed change (Coser, 1964). Recent studies of young children’s friendships have documented a contradictory fact: conflicts frequently emerge in peer-to-peer friendship relations. When we look closely at conflicts of preschoolers’ peer interaction, especially verbal debate and argument, we find that such conflict often serves to strengthen interpersonal alliances and to organize social groups (Goodwin, 1990). Peer conflict issues include control of the physical or social environment, such as control of objects or physical space. Killen and Turiel (1991) categorize children’s conflict as involving issues of morality (such as physical harm and individual rights) and of social order (such as rules for activities). Conflict strategies include physical and verbal tactics that can be both aggressive and nonaggressive.

According to Shure and Spivack (1992), they demonstrated a “Preschool Interpersonal Problem Solving” (PIPS) to explore the manner and ability of young children to generate solutions to interpersonal problems between their peers (such as when a child wishes to gain access to a toy in another child’s possession). Based on
Shure and Spivack’s work and other research, the results of solutions, which preschoolers frequently generate to deal with peer interaction dilemmas can be categorized into five categories of strategies. However, these strategies are not initiate behaviors; these alternate solutions generate from observing interactions between peers and it is a continuing social adjustment learning process. These five categories are (1) Strategy of beneficial group: when conflicts occur, children tend to perform a positive interactive behavior, for example, yielding, waiting, taking turns, sharing, and borrowing. (2) Strategy of controversy: Some children appear to take a rather negative approach when they face interpersonal conflicts. In this case, the child would attempt to command to their peers, to be self-centered, threaten and criticize others verbally, and compete for or break objects and so on. (3) Strategy of first complaint: as stated in the previous paragraph, it is common that two children have interaction problems and they like to complain to parents, teachers or older children in the class. They wish that some one who has the authority could find a better solution for them. (4) Strategy of affections: this is about a child tending to use emotional expression as reflection to peer interaction dilemmas. Crying, and sorrow are common reactions among this kind of preschooler. (5) Strategy of giving up or changing targets: children give up their desire and transfer their interest to another target. This type of child usually has a meek spirit and need to learn the measure of compromising.

The five categories of strategies give a clear frame about what kinds of solutions preschoolers generate to deal with peer interaction dilemmas. This study analyzed Shure and Spivack’s theory and found that the five categories which strongly fit into Eisenberg and Garvey’s (1981) work that specially discussed peer conflicts in play. They used
children age 3 to 5 years old as research targets and studied their behaviors of playing and sharing objects. Eisenberg and Garvey found that when preschoolers in peer conflict situations during play applied reaction that are (1) self defense behaviors (2) to announce and remain ownership (3) to provide possible exchange conditions (4) prosocial behaviors(4) generate negotiated compromises. These reactions are preschoolers’ strategies in a real conflict situation. What if we ask young children to imagine a situation in which their friends would want to share or take away their toys?

In their book *Conflict Resolution Among Preschool Children* sociologists and psychologists Niveen, Brett, Benjamin and Lanen(1995) interviewed young children between the age 31 and 72 months in several preschools about what they would do to solve interpersonal dilemmas. As the results of their study, preschoolers favor some strategies that constitute compromises and then giving away. Young children tend to use radical management in real conflict situations, for example, verbal debate, competitive attack and complaint to authority. Problem solving solutions such as consultation and cooperation are seldom applied in preschooer ages and overall complaints to authority are the most common solutions for children. In conflicts, which peer interactions, preschoolers appear to think one thing and react another way. In a real situation young children react in an aggressive and irrational way. In a situation detached from reality, such as when children are being read stories, they prefer more moderate means of conflict resolution. When it comes to conflicts, young children mainly learn to observe others feelings and the results are so related to individual profit that the solutions tend to be aggressive interaction.
2.1.4 Participating Strategies of preschoolers’ in-group play

The key to having further successful interactions for children ages three through five is for the child to insert himself into peer play. Corsaro proposed his research findings of observing how preschoolers participate in peer play successfully in his book *We’re Friends Right: Inside Kids’ Culture*. During the research, he found out the best strategy for young children to join peer’s play is to play beside others and then join their activities, and the worst strategy is to interrupt others’ play directly. And when children did play alone or engaged in parallel play, it seldom lasted for long. They were soon doing things together (Corsaro).

In the actual class, are preschoolers’ actions the same as Corsaro’s report? Consequently, young children’s strategies to participate in peer play have a marked difference of social interactivity abilities. To make a conclusion, preschoolers who have better social interactive usually apply the following four methods to interact with peers in play: (1) Verbal requirement: When children want to join in certain group play, the child with better social skills will express verbally what he wants from other members. Moreover, he will use conditions to make exchanges with his peers to achieve the goal, for example, “I want to play with you and this is my bunny”. (2) Direct questions: when a child has interest in some peer’s play, he would directly use questions such as “what are you doing?” “What is this?” to evoke peers’ attention in order to have a chance to join in play. (3) Assist role: when a preschooler wants to play with a group, he or she will some act to help peers in activities such as categorizing small items, or choosing something for the group. (4) Mimic playing behaviors: It is similar to parallel play and children will mimic peers’ play, for example, when a peer plays with wood cubes to build a castle, a
child will choose wood cubes too and play exactly in the same way in order to play together. In contrast, children who have less abilities of interaction use rather negative strategies to achieve peer play. And the outcomes of a conflict may be (1) an unresolved situation, as when children simply drop or give away the issue; (2) an adult-imposed solution; (3) the submission of one child to another; or (4) a mutually agreed-on solution achieved through bargaining, compromising, or finding alternate activities (Wilson, 1988).

A Japanese early childhood educator, Takeya Fushimi took 60 children age 3 to 5 years old as research targets and analyzed questionnaires from parents and care-givers then he observed the regular days in preschools to study the relations among interactions between their peers and interpersonal problem solving strategies. Through the study, he found (1) The solving methods that preschoolers generate against peer conflict have a close relation with their gender. (2) During the conflict, boys tend to react in a disputable way, however, girls appear to use emotional methods such as crying, giving away or transfer their interest to deal with the principle. (3) Children who are more likely to consider others in play and show beneficial group behaviors (prosocial behaviors) tend to have more active have a high emotional tolerance, and patience to what they insist. (4) In the conflicts, children who easy fall back tend to be less active and less emotional. (5) A child who runs to complain to people with greater power and authority tends to have problems with accommodating different surroundings.

Exploring from overall research findings, children do generate interactive strategies not only in conflict situations and participating play themes but also reflect in
other peer interaction aspects such as beneficial group behaviors, emotional adjustment, and social language.

2.1.5 Summary of literature review:

Preschooler peer interactions are not always a peaceful and joyful occurrence, they can also argue, fight, push, kick, even bite to each other. Peer conflicts provide a critical context for the development of social and cognitive competencies (Arsenio & Cooperman, 1996; Doppler, Harkins, & Arcaro-McPhee, 2002). From both Western and Eastern studies, preschoolers are more likely to generate different solving strategies in different situations and then to have various peer interactive relationships. For example, object conflicts tend to involve physical resistance, although as children grow older, they begin to use verbal protest more frequently (Ross & Conant, 1992). As disagreements between peers are an inevitable part of any early childhood classroom (Shantz, 1987), these conflicts are part of practical and educational tools available to children.

Brian Sutton-Smith is a play theorist who has spent his lifetime attempting to discover the cultural significance of play in human life and he has argued, the “predominate nature of play throughout history has been play with others, not play with objects” (Sutton-Smith, 1986, p.26). During play, preschools have provided a comparatively “equal environment” of families so that young children have more opportunities to participate in peer conflicts and interact with peers without adult intervention. A consistent finding in research is that children who were playing well together before conflict were more likely to re-solve their debates and continue to develop a communication and respect skills later in life. Those children were also more
likely to disagree over play decisions than toy distribution (Rende & Killen, 1992), more often than children who were not playing together prior to a dispute.

Early childhood educators, Laursen and Hartup (1989), found that children who engaged in cooperative play used less aggression in conflict than children who engaged in solitary or parallel play. Also Considering the importance of conflicts in preschoolers’ classrooms, two important questions follow. First, what kind of plaything would best support peer interactive skills, for example, children's social growth and development of conflict resolution strategies? Second, how might we utilize these conflict situations through toy design to help children grow and develop into more independent problem solvers?

• **Individual issues related to peer group play-gender issues**

The first sign of interaction differentiation in young children’s peer relations is increasing gender separation, with children as young as age three showing preference for play with other children of the same sex (Maccoby, 1999). According to some researchers, boys engage in more conflicts than girls and differ in their issues and strategies. According to Piaget (1965) & Gilligan (1982), they proposed that in the moral conflict differentiation between boys and girls that girls were the picture of peaceful. During preschoolers’ play, boys are more likely to mess up the classroom and try to manipulate their peers. In contrast, girls tend to cooperate with adults who have more power and authority. They are more likely to ask their peers with some rules to avoid another dispute.
• **Family issues related to peer group play—Parents’ issues**

Preschoolers become more independent and begin to focus more on adults and children outside of the family in these ages. A child is more likely to explore and ask about his or her surroundings even more. Children’s interactions with family and those around them will help to shape their personality and individual ways of thinking and moving. The parent-child relationship is usually the first and closest personal bond that children experience. Parent strategies that build a healthy attachment also serve as an interpersonal relationship model for young children. This relationship helps children to predict and explain the reactions from other people. A child who is more likely to share his or her emotions in parent-child relationship has the ability of peer cohesions or interactions.

• **Overview of Birth Order Characteristics**

Preschoolers spent most of their time to develop their social skills in school and their family. Sociologist, psychologist and the author of *What Life Could Mean to You*, Alfred Adler speculated that birth order differences would begin to disappear when families became less competitive and autocratic, and more cooperative and democratic.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>FAMILY SITUATION</th>
<th>CHILD’S CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONLY</td>
<td>Birth is a miracle. Parents have no previous experience. Retains 200 percent attention of both parents. May become rival of one parent. Can be overprotected and spoiled.</td>
<td></td>
</tr>
<tr>
<td>OLDEST</td>
<td>Dethroned by next child. Has to learn to share. Parent expectations are usually very high. Often given responsibility and expected to set an example.</td>
<td></td>
</tr>
<tr>
<td>OLDEST</td>
<td>Likes being the centre of adult attention. Often has difficulty sharing with siblings and peers. Prefers adult company and uses adult language.</td>
<td></td>
</tr>
<tr>
<td>SECOND</td>
<td>She has a pacemaker. There is always someone ahead.</td>
<td></td>
</tr>
<tr>
<td>MIDDLE</td>
<td>More competitive, wants to overtake older child. May become a rebel or try to outdo everyone.</td>
<td></td>
</tr>
<tr>
<td>YOUNGEST</td>
<td>May become authoritarian or strict. Feels power is his right. Can become helpful if encouraged. May turn to father after birth of next child.</td>
<td></td>
</tr>
<tr>
<td>TWIN</td>
<td>Is “sandwiched” in. May feel squeezed out of a position of privilege and significance.</td>
<td></td>
</tr>
<tr>
<td>YOUNGEST</td>
<td>May be even-tempered, &quot;take it or leave it&quot; attitude. May have trouble finding a place or become a fighter of injustice.</td>
<td></td>
</tr>
<tr>
<td>YOUNGEST</td>
<td>Has many mothers and fathers. Older children try to educate her. Never dethroned.</td>
<td></td>
</tr>
<tr>
<td>TWIN</td>
<td>Wants to be bigger than the others. May have huge plans that never work out. Can stay the &quot;baby.&quot; Frequently spoiled.</td>
<td></td>
</tr>
<tr>
<td>YOUNGEST</td>
<td>One is usually stronger or more active. Parents may see one as the older.</td>
<td></td>
</tr>
<tr>
<td>TWIN</td>
<td>Can have identity problems. Stronger one may become the leader.</td>
<td></td>
</tr>
</tbody>
</table>
2.2 Observational Study

In Chapter Two, the previous literature research findings shows: (1.) Good education should have both “a social purpose” and purpose for the individual child and also positive long-term influences affect children later in real society. (2.) The fact that children enjoy and engage in play seems to be a proposition that is universally true and most educators agree that to schedule playing time every day is essential. (3.) Play is a long-term requirement for preschoolers as well as playful objects chosen. (4.) Peer interactions provide a critical context for the development of social and cognitive competencies.

Children spontaneously send information to their surroundings since they are born. They use crying as a signal to announce their basic needs. However, along the growing ages, children have to express their thoughts and fit the expectations of the real world. This is more than the expression of basic needs; it is about advancing communication skills for expressing their joy, anger, sorrow and happiness. They should not conceal their feelings instead of sharing with people in the proper way. According to previous
literature research, their peer interaction skill is essential and fundamental for their social skill development and preschoolers are closely engaging in play as a significant mediator to form interpersonal skill and also an essential way for finding satisfaction. Throughout play, children take on a positive attitude and exhibit skill in interactions with peers then experience social rules. Therefore, the observations of this study focused on “peer interaction” that is a process for preschoolers to communicate with and convey information to others. Utilizing any kind of mediator, for example, verbal, gestures, facial expressions, postures, words, and drawing, making noise etc, in order to exchange messages, could accomplish peer interaction process. This research seeks more to observe children’s forms of communication as a means of collectively integrated multiple expressions.

2.2.1 Observational research method

The observation took two weeks in two preschools of one Western and one Eastern country. From many relative studies, most Western people are more likely to have a clear self-identity and Asian people are more likely to have a more developed sense of group. The comparison chart below is a research conclusion of this study on some general differences between Taiwanese and American cultures; this could serve as an overview of cultural differences between East and West.
(Figure 4. Some general differences between Taiwanese and American cultures)

Through cross-cultural comparative study, the observation portion of the research attempted to find the balance of teaching method that best facilitates the enhancement of peer interaction. North America with over 45.1 million immigrants and 85% of immigrants came from a western approach culture. America is ultimately a nation of immigrants and as a result is a cultural blend in every sense of the word so that the United States is an ideal representation of Western education approach. For Eastern educational systems, Taiwan, with a mix culture of Asian culture, here is used as an example. The

<table>
<thead>
<tr>
<th>Conception Of the Self</th>
<th>Taiwan</th>
<th>American</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collectivist: Higher value placed on group cooperation and individual modesty.</td>
<td>Individualist: Higher value placed on self-reliance. Self-promotion is more accepted. High value placed on &quot;freedom&quot; from externally imposed constraints.</td>
<td></td>
</tr>
</tbody>
</table>

| Social Relationships | Formal, hierarchical. People most comfortable in the presence of a hierarchy in which they know their position and the customs/rules for behavior in the situation. | Informal, egalitarian. People most comfortable with their social equals; importance of social rankings minimized. |

| Friendship | Small number of close, lifelong friends who feel deeply obligated to give each other whatever help might seem required. | Large collection of "friends" and acquaintances, which changes over time and involves only limited mutual obligations. |

| Obligation | Relationships with other people involve reciprocal obligations. | People avoid interdependent relationships and situations that might entail long-term obligations. |

| Task vs. Relationship Orientation | Relationship-oriented: Maintaining a harmonious relationship has priority over accomplishing tasks. | Task-oriented. Relationships are less important than getting the work done. |

| Harmony vs. "Truth" | Avoid direct confrontation, open criticism, and controversial topics. Concern maintaining harmony and with "face." | Willing to confront directly, criticize, discuss controversial topics, press personal opinions about what they consider "the truth. Little concern with "face." |

| Role of laws, rules, and regulations | More faith in personal relationships than in written rules and procedures for structuring interactions. | Written rules presumably apply to everyone and are assumed to produce fair, reasonable procedures and decisions. |

| Time Consciousness | Relatively more attention to the past and to the longer-term future. | Less interested in the past; eye on near-term future. |

| Ascribed vs. Achieved Status | Traditionally, a person's status in the society was based importantly on inherited characteristics such as age, gender, and family. This is changing. | People's status is based mainly on their own achievements, including education obtained and level of success realized in their line of work. |
preschool educational focus in America and Taiwan is quite different in the purpose. Children with different cultural contexts will behave and learn in different ways. By studying the cross-culture application of education in different societies, we can find a better and rational way to provide children with an equal sharing and communicating environment.

2.2.2 **General description of preschools**

- Focus group: Arlitt preschooler day care center of University of Cincinnati, USA
- Eagle American-Taiwan bi-lingual preschool, HsinChu, Taiwan

Class description: Arlitt class- five boys and six girls (total student number is around 10)

Eagle class- eight boys and seven girls.

- Observation focus points: (1) Same toys they always used (2) Observing the play processes and analyzing interaction patterns by oral form, body language, and facial expressions in order to evaluate. 3) Details about children’s attitudes.

2.2.3 **Observation in Eagle preschool, HsinChu, Taiwan**

Eagle American-Taiwan bi-lingual preschool started in 2004 and it is a representation of an educational trend in most Asian countries. Children here are age three to six years old and they learn English and Traditional Chinese together in order to be more advanced than other children later in life. The philosophy of Eagle is to foster a program for children to enhance “all around development” especially interpersonal leadership and academic skills, to prepare children for “readiness” to meet with the developmental stages, to help children develop positive thinking and feelings and to help children develop the ability and curiosity to learn.
A. The preschool curriculum of Eagle preschool

The main concerns of Eagle curriculum are to nurture the motivation to learn and develop interpersonal skills. The curriculum has constructed play with educational purpose as the center of their curriculum. All around Curriculum design of Eagle Preschool is based on six areas of development that physical, intellectual, language, social, moral & emotional, aesthetic, and spiritual.

They agree that play relates to the development of competencies in each six area of the curriculum. In order to help children become more competent, Eagle turns play into a tool with specific educational function to develop symbolic thought, intellectual, language and literacy, logical-mathematical thinking, problem solving, imagination with creativity, and social-moral development into peer culture. Many subjects are integrated within the curriculum through thematic planning or topic-work. There are weekly tests and monthly examinations in order to measure of the children’s progress and share them with parents.
B. Environment observation

The concept of “Natural Environment” seems to be one of the educational trends in Taiwan preschools. Eagle has an outdoor playground and indoor organized “educational” play tools.

The classroom is not separated into different zones for different kinds of activities instead it is a large space for group play. There are five tables, and fifteen preschoolers are assigned evenly to three small teams. The class has three teachers to charge the small teams and also an American teacher joins them three times a week. During school hours, the classes incorporate primarily group activities. Preschoolers need to follow teachers’ instructions and generally have less freedom in choosing what they would like to do because the expectation from both school and parents is to help children develop a
healthy balance in the six areas of development. For example, in painting class three teachers tell a story together and children need to draw the scenario, however, everyone in the class needs to draw even if a child does not want to and their time is limited. When the time is up, teachers help children separate their pictures according to teams on the wall and ask children to choose three of their favorite drawings and children choose by themselves. Teachers will count votes and announce the three top student’s names. The three “top painters” will come to a higher stage made of wood and receive applause from their peers and also get a reward dessert after a small ceremony. Each class has a little competition like this. At the end of the day, teachers will count team points by honors valued according to the performance of preschoolers’ attitude, and self-performance. The top team will be treated to one more type of dessert the next day.

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Group exercise + Award desserts</td>
<td>Special surprise</td>
<td>Group exercise + Award desserts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Story hours</td>
<td>Story hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Life education for stories</td>
<td>Painting class</td>
<td>Music listening</td>
<td>Life education for stories</td>
<td>Painting class</td>
</tr>
<tr>
<td></td>
<td>10:00</td>
<td>Academic Theme activity hour</td>
<td>Special activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Talent activity</td>
<td>Special activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>Musical</td>
<td>Physical</td>
<td>Aesthetic</td>
<td>Mathematic &amp; Logical</td>
<td>Special activities</td>
</tr>
<tr>
<td></td>
<td>11:30</td>
<td>Lunch, clean self and tools, nap hour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Wake up and organize sleep area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30</td>
<td>Dessert hour</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td>Outdoor play</td>
<td>Educational video watching</td>
<td>Outdoor play in one group with theme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>Language: Let’s talk in English</td>
<td>Joyful number time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:20</td>
<td>Joyful number time</td>
<td>Outdoor play</td>
<td>Educational video watching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:20</td>
<td>Go home- baby carriage or individual pick up</td>
<td>Outdoor play in one group with theme</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Figure 7. Weekly schedule of Eagle preschool)
C. Playthings observation

The research on toy choices and play styles by 15 children (8 boys and 7 girls) of Eagle preschool took three days in one classroom. The objective of this observation was to observe what types of toy preschoolers like to play with and analyze by gender in order to find out if gender is really related to play in ages 3 to 5 years old.

<table>
<thead>
<tr>
<th>Type of toys</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toy cars</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Role Play</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Image cards</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Toy books</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Lego, wood cubes</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Sorting toys</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Matching toys</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Total students</td>
<td>24</td>
<td>21</td>
</tr>
</tbody>
</table>

(Figure 8. Observation data on toy choice by children of Eagle preschool)

D. Survey of educators and parents in Taiwan

From the survey of educators and parents in purchasing playthings, the results show considerable overlap of important points of people’s expectation of what a good
plaything should be. Good toys should possess certain qualities and the foremost six elements in sequence are as follows:

1. Safety
2. Advancing educational assistant resources
3. Enhancing pre-social skills
4. Inspiring creativity
5. Conforming to children’s interests
6. Permanence and durability

The educators felt that there was some circumstances in which more attention should be paid when purchasing a toy for preschoolers; the six conditions are in sequences are as follows:

1. Safety
2. Enhancing ability to make friends
3. Aligning with children’s interests
4. Appropriate to age specific development
5. Easy to clean
6. Durable

2.2.4 Observation of Arlitt preschool, Cincinnati, USA

The Arlitt Child & Family Research & Education Center at the University of Cincinnati is one of the oldest examples of preschool in the United States of America. Preschoolers in Arlitt come from diverse cultural and socioeconomic backgrounds, Arlitt is a research facility for faculty and students, and an observation and teacher training resource center for the community that serves as an early childhood education practicum site for students from many programs at the University of Cincinnati. Children enrolled in half-day sessions meet Monday through Thursday, from 8:15 to 11:45 am or from 12:45 to 4:15 pm during ten-week quarter sessions. There is also a full-day program that meets Monday through Friday, from 7:30 am to 5:00 pm. Each of the small classes has around
10 children with 3 teachers and children are separated into equal gender grounds as much as possible in the classes, and breakfast, lunch, and afternoon snacks are served.

A. The Arlitt preschool Curriculum

As a child development center, Arlitt preschool utilizes the faculty resources from or the University of Cincinnati and preschool staff from the center to collaboratively deliver a preschool curriculum solidly based on theories reflective of current research. The result has been a dynamic curriculum that uniquely reflects a synthesis of professional expertise from both the college and classroom ranks. (Artlitt Center)

The classes are composed of Art, Music, Math, Science and Literacy curriculums.

(Figure 10. 5 Areas of Development from Arlitt Center)
<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Main Idea</th>
<th>Mediator</th>
<th>Example of curriculum activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ART</strong></td>
<td>Exploratory process for children who are experimenting with art materials is important</td>
<td>1. Open-ended art area with a wide variety of materials 2. Special art activities for small groups of children are frequently planned</td>
<td>This art activity allows children to explore the blending of colors as they draw with colored ice cubes. Water is colored with red, yellow, and blue food coloring before freezing. Popsicle molds make a tool for ice cube drawing since children have a handle to hold. Children begin by exploring. They notice the ice melting, turning to water, and then drying. They also observe the change in colors as the primary colors blend. Once they have experimented with the ice cubes, children begin to create designs and pictures with them.</td>
</tr>
<tr>
<td><strong>MUSIC</strong></td>
<td>Unfolds at 3 levels: in music zone (a component of each classroom), group times, (incorporate singing, rhythm, and movement); throughout the day, during play, transitions, or whenever appropriate.</td>
<td>Construct concepts such as pitch (how high or low a sound is), dynamics (how loud or soft), and timbre (tone color) through experimenting with instruments and sound-making materials in classroom. The activities are coordinated with early childhood materials, ex. big books or charts with the words to favorite songs or chants.</td>
<td>Preschool children love to move to music. This dance center, added to the dramatic play area of the classroom, gives children the opportunity to dress up in fancy costumes and dance to music from around the world. The tutus are made by sewing netting to stretch halters. Children can easily slip them on and off. Other apparel might include vests, fancy shirts and jackets, African lapis, and scarves.</td>
</tr>
<tr>
<td><strong>MATH</strong></td>
<td>Math curriculum encourages children to think mathematically and leads young children to construct mathematical knowledge.</td>
<td>The materials are various and diverse according to teachers. In addition, each preschool classroom has a special Meth area.</td>
<td>This game coordinates with classes that are interested in Spring and bird nests. The materials include six novelty bird nests from a craft or party store, a selection of small bird eggs, a basket to contain the eggs, and a die. Children roll the die to determine how many eggs to place in each nest. Some children divide the baskets among the players and see how many eggs they can get for each basket. Other children try to place a series of from 1 to 6 eggs in the 6 baskets.</td>
</tr>
</tbody>
</table>
**SCIENCE**

| Encourage children to construct physical knowledge and follow the scientific process. | Science materials are always hands-on so that children can experiment with the materials and observe the results. Scientific knowledge emerges in many early childhood curricular areas, including art, music, cooking, gross-motor, and the sensory table. In addition, each preschool classroom has a special science area. | This activity connects science and music as children explore the relationship between the size of an object and the pitch (how high or low it sounds when shaken or tapped). Various sizes of brass bells from India are suspended from a tree in the outside area. As children shake the bells, they notice that each bell has a slightly different sound. Eventually, children realize that the difference in sound is related to the size of the bell. |

**LITERACY**

| Encouraged children to interact with print and to encourage writing across the early childhood curriculum. | Interactive charts, big books, word banks, letter and word manipulative, writing centers, writing boxes and literacy suitcases to link home and school are some of the components of the literacy program. | This class big book includes a baby photo and a current photo of each child in the class. The repeating text is perfect for emergent readers, and the photographs motivate children to read the book again and again with their friends. |

(Figure 11: Details of each five curricular created by Arlitt Center)

Although the design of the curriculum did not indicate specific point out social development parity, the details of the class design and also the design educational materials show a close relation between each curriculum and interaction values.

**B. Environment observation**

Each preschool classroom is divided into learning zones of Art, Music, Math, Science and Literacy where children have a substantial period of time each day to interact with one another and with curriculum materials in each area. The zones adjust according to teachers and the performances of children.
<Figure 12: Arlitt Preschool Environment>

< Figure 13. Educational play made by Arlitt teachers>
C. Playthings observation

The research on toy choice and play types by eleven children (five boys and six girls) of Arlitt preschool took three days in one classroom. To observe what type of toy preschoolers like to play with and analyze in gender in order to find if gender really related to play in ages 3 to 5 years old.

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<tr>
<td>Role Play</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Image cards</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Toy books</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Lego, wood cubes</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Sorting toys</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Matching toys</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total students</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>

<Figure 14. Observation data on toy choice by children of Arlitt preschool>

2.2.5 Summary of Observational Study

Many Asian early childhood educators believe that intellectual development requires a balanced body and that physical play aligns the body (e.g., Harada, 1997).
Harada argues that running games requiring children to change direction, like soccer and tag, help align the body. He suggests that each preschool day begin with 100 minutes of outdoor physical activity. At the Eagle school, the first activity at the beginning day is an outdoor group exercise and which is required almost all preschools in Asia.

In both the East and the West, preschools are depended upon to play a substantial role in early childhood development to help children become more socialized. From the research results of this study, play as a complex institution embedded in respective societies, nations is, one that affects social change and introduces some interpersonal problems. However, cultural factors influence the way we teach children and the outcome of preschool education in these two regions is fundamentally different. For the purpose of this cross-cultural comparative study, preschools in Hsin Chu and Cincinnati, Ohio were focused on specifically. In Taiwan, preschools are expected to help children by increasing their potential for future success. The expectations from parents and society force preschool education in Taiwan to focus on teaching multiple languages (English, Japanese, Spanish), mental calculation, music (usually piano) and painting. The educators suppose our next generation could have more aptitude in language, mathematics and fine art talent development through these methods. In the United States, globalization and the multiplicity of its cultural makeup pushes early education to respond in a way that accommodates and values these many cultures. In both countries, skills of communication, cooperation, and respect for others are among the basic expectations that parents have for their preschool aged children. According to the specific observations on play in both Arlitt & Eagle preschools, the preschool classroom can be seen as a children focused community, which is composed of co-work, co-share and co-existence in terms
of communication, sharing and belonging.

Under the structure, the three concepts (communication, sharing, and belonging) can be divided into eight significant elements that could foster children’s curiosity and engage a child and his or her peers in play: (1) An unlimited center for creativity and imagination; (2). Openness to either boys or girls can play; (3). Intrigue in preschoolers’ passion of play; (4). Ease of play; (5). Multiple ways to play; (6). Endless play; (7). Have vivid themes. (8). Various materials.

© Findings

1. The observation was beneficial for understanding “Play” as the way that Preschoolers are willing to interact with peers.

2. Throughout these studies, the forms of communication between children and their peers provided more detail because:

   (1) Preschoolers like to share their ideas through do- it- themselves activities and story telling. They bring what they perceive to be reality into their fantasy when sharing.

   (2) For peer interactions, they use simple words to communicate, if they cannot reach the goal they use postures and gestures to assist; most of them were able to interpret others facial signals.

3. Children who spend more time playing with peers have a better ability to talk and understand the meaning of people’s facial expressions.

4. The more preschoolers play together, the more likely they will be to interact.

5. They tend to take on a specific group attitude when they play together.

6. There is always a medium or signal as an invitation to play.

©Special Points in Play
1. Challenge & Control

2. Social experiences: different roles (how to make children exchange roles in play?)

3. Fantasy - Role play, mimic behavior

4. Creative & constructive expressions - drawing hand made activities

5. Body & Senses - intuitive learning

6. Basic Needs: sense of belonging and love, respect and self-accomplishment

7. Society and cultural context - family relationship including siblings as the main people children experience interaction with.

8. Individual characteristics - preschoolers are self-center point at this ages, and they begin to experience about the concept of others and group and learned to communicate with peers with any kind of expressions.

2.3 Research Conclusion

Age-appropriate development is a very important consideration for the creation of toy design principles that can lead to the successful creation of social playthings. People often expect children to think and act like adults when they are not yet capable of doing so. It is important to know what to expect from preschoolers as they develop and to be sure that the expectations people may have for a child at a given age are realistic. In order to design or choose an ideal educational toy for children ages three to five years old, people need to know what their children are capable of in this period. Child development shows a general concept of how a child becomes able to perform more complex actions, as they get older. All the aspects of development are very important and have long-term
influences for preschoolers. As mentioned in the previous chapter, there have been development classifications by professionals. Of those works, those identified by Dr. Dorothy and Jerome Singer of Yale University was found to be the most relative to this study. Those categories identified by the Singer’s are: 1. Motor Development, 2. Eye-hand development and vision, 3. Cognitive Learning, 4. Hearing, Listening, and Voice, 5. Social and Emotional, 6. Creative and Imaginative. However, three categories in particular relate most meaningfully to the development of social playthings for preschoolers. Those categories are Social and Emotional, Cognitive and Intellectual, and Physical and motor development. This study concludes that there are three essential categories and three supportive elements of developing social skills for preschoolers that can be cultivated through the use of age-appropriate educational toys. The three main categories are:

- **Social-Emotional**: The development of skills relating to how a child interacts with others, having relationships with family, peers, and teachers, cooperating, and responding to the feelings of others and also how he or she behaves oneself. In this stage, preschoolers are able to imitate adults and playmates, and show affection for familiar peers. During the play, they can take turns and understand the concepts of "mine" and "his/hers".

- **Cognitive-Intellectual**: This skill includes learning new knowledge and processing, understanding, and problem solving and applying this knowledge to different ends. Developing this area helps a child improve his or her capacity for mental activities such as reasoning, interpreting, comparing and contrasting, evaluating, judging, predicting, sequencing, and visualizing. It also helps children
master specific content knowledge relating to vocabulary, mathematics, science, and so forth.

- **Physical-motor**: This aspect includes gross motor and fine motor development. Gross-motor skills involve using large groups of muscles to sit, stand, walk, keep balance, change positions, etc. The fine-motor skills are more delicate such as finger controls, using hands to be able to eat, play, write, and do many other things.

The other three supportive elements are:

- **Language**: speaking, using body language and gestures, communicating, and understanding what others say.

- **Eye-hand development and vision**: the development of keen powers of perception and of the ability to use the eyes and hands together in coordination to perform a task.

- **Hearing, Listening, and Voice**: the development of skills relating to the senses and communication. Developing this area allows a child to discriminate between different types of sensory input, processing those that are important and screening out ones that are not.
(Figure 16. Age-appropriate development of three main categories from this study)

<table>
<thead>
<tr>
<th>AGE</th>
<th>Social-Emotional Development</th>
<th>Cognitive-Intellectual Development</th>
<th>Physical-Motor Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 3</td>
<td>Parallel play, enjoys being by others, takes turns, knows if he is a boy or girl, enjoys brief group activities requiring no skill, likes to &quot;help&quot; in small ways—responds to verbal guidance.</td>
<td>Says short sentences, great growth in communication, tells simple stories, uses words as tools of thought, wants to understand environment, answers questions, imaginative, may recite few nursery rhymes Likes to conform, easy going attitude, not so resistive to change, more secure, greater sense of personal identity, beginning to be adventurous, enjoys music.</td>
<td>Runs well, marches, stands on one foot briefly, rides tricycle, imitates cross, feeds self well, puts on shoes and stockings, unbuttons and buttons, build tower of 10 cubes. Pours from pitcher.</td>
</tr>
<tr>
<td>Age 4</td>
<td>Cooperative play, enjoys other children's company, highly social, may play loosely organized group games - tag, duck-duck-geese, talkative, versatile.</td>
<td>Uses complete sentences, 1540 words, asks endless questions, learning to generalize, highly imaginative, dramatic, can draw recognizable simple objects, seems sure of himself, out-of bounds behavior, often negative, may be defiant, seems to be testing him/herself out, needs controlled freedom.</td>
<td>Skips on one foot, draws &quot;Man&quot;, cuts with scissors (not well), can wash and dry face, dress self except ties, standing broad jump, throws ball overhand, high motor drive.</td>
</tr>
<tr>
<td>Age 5</td>
<td>Highly cooperative play, has special &quot;friends&quot;, highly organized, enjoys simple table games requiring turns and observing rules, &quot;school&quot;, feels pride clothes and accomplishments, eager to carry out some responsibility.</td>
<td>2,072 words, tells long tales, carries out direction well, reads own name, counts to 10, asks meaning of words, knows colors, beginning to know difference between fact and fiction-lying, interested in environment, city, stores, etc. Self-assured, stable, well-adjusted, home-centered, likes to associate with mother, capable, of some self-criticism, enjoys responsibility. Likes to follow the rules.</td>
<td>Hops and skips, dresses without help, good balance and smoother muscle action, skates, rides wagon and scooter, prints simple letters, handedness established, ties shoes, girls small muscle development about 1 year ahead of boys.</td>
</tr>
</tbody>
</table>

(Figure 17. Overall preschooler's development of three main categories from this study)
Children of three to five years old also need a lot playtime. This includes playing alone, with peers and with their parents, and especially peer play. The time frames presented are averages and some children may achieve various developmental milestones earlier or later than the average but still be within the normal range. The differences between children’s development are related to cultural context and also the makeup of the members of their families. In “We’re Friends, Right?”, Corsaro mentioned that young children have abilities to develop essential skills through solitary play, however, playing with their peers social play can increase developmental potential.

Children’s opportunities of social development may be limited by their connections with a given family, neighborhood, or school. Mixed age, sex, race, or cultural peer interactions, which are highly bound by activity differences and early-learned expectations, can limit the extent of diversity in peer interaction. Children’s ability to be socially competent in various circumstances is limited by this lack of diversity (Ramsey, 1986).
When enhancing in peer interactions, if a child fails to navigate a dilemma; he or she is more likely to figure out another way to achieve a goal. Preschoolers continuously attempt multiple strategies in different interactive situations so that they learn interaction skills from their peers through a diverse accumulation of social strategic experiences. Peer interaction skills initiate by catching others’ attention to achieve interactive activities and consist of emotional, verbal, and facial expressions, and body language as significant elements. The preschoolers learn to negotiate compromises each time they play with another child. The parent-child relationship is the earliest mediator for young children to learn to experience people’s expressions in all aspects. A child first senses the other child’s emotional attitude, which he learns from his family and uses this as the main point of reference to react with. “Positive attitude”, “positive multiple strategies”, and “positive negotiation of compromises” are learned from peer-to-peer play and are significant conditions for young children to achieve better social skills later in life. Throughout peer interactions, young children are more likely to learn to express, share, compromise, and empathize from play processing and how to join in is also a topic of toy design. Children are more interested in the process of playing than in the product of play. Spontaneity is an important element of child's play; it occurs freely and is under the control of the child; it also reflects children are perception of the realistic world.

What makes good play for preschoolers? Preschoolers prefer toys with realistic detail and working parts. A good toy is one that is fun for a child, and suitable for his or her age, developmental needs, and personality. According to previous research in this study and a study of preschool curricular, there are four types of play that comprise all the daily activities of young children: active play, manipulative play, make-believe play
and creative play. These four types of preschooler play fit into the three main categories of children’s development (Social-emotional, Cognitive-intellectual, Physical-motor). Four types of play can help preschoolers develop essential skills in these three main categories. Among these four types of play, make-believe, manipulative and creative play provide greater opportunities for peer interaction. Besides the developmental issues already mentioned, a good social toy generally has one or more of the following qualities:

- **Inspires- creative play.** Kids need to do something—push, pull, dissect, build—with a toy. Toys that are designed to play with in only one way inhibit imagination and creativity. That is the main reason children so often destroy mechanical toys. In contrast, if the toy has multiple ways to play and has different outcomes in play such as a single play or group plaything, children are more likely to be interested and interact with the toy for a longer period of time and share or take turns with peers. A simple large cardboard box can become just about anything children want it to be (house, car, store counter, boat, bed), and it can be pushed, pulled, crawled into, driven or painted.

- **Durable and well made.** Shoddy toys only frustrate, encouraging children to destroy them. Additionally, these toys may cause dangerous play situations.

- **Challenge but don't frustrate.** A toy should be "just on the margin of the child's growing capacities." Children need more space to develop their potential interests and skills. Throughout challenging play, children are more likely to cultivate patience and sometimes they are more likely to find a cooperative way to achieve a given goal.

- **Safety**
Toys should meet safety regulations for special target age: they should not be able to be broken easily into small pieces or leave an exposed jagged edge, they should made of non-toxic materials instead of glass or other brittle materials.

Preschoolers love to play from the moment they are born. They need to play not just because it’s fun, but also because play is the way they learn about themselves and the world. Play is how they develop and practice the social skills, cognitive-intellectual, and physical-motor, which they will need later in adult life. Social playthings both reflect and teach value, skills and behaviors; moreover, they help form young minds and morals.

**CH 3. Social plaything design principles - For children age three to five years old**

To develop social and educational toys that can enhance interaction skills between preschoolers and their peers, it is necessary to have comprehensive principles of design based on the concept of Universal Design. The principles set forth as the product of this study provide designers with a useful set of tools for the development of successful social playthings.

All preschoolers are social learners and are constantly absorbing new experiences in their everyday lives. Peer relationships associated with multiple skills adjustment are an integral part of these new experiences. In this study, preschoolers with positive peer interaction outcomes are shown to function better with peers in school, better buffer diverse situations of stress, have better social and cognitive skills, and present better long-term social adjustment abilities. Preschoolers manage their environment through
cooperation, sharing and successful social problem solving. The urge to interact with peers, in addition to having fun, is often driven by the desire to be accepted, to belong.

An ideal social plaything is based on socially learned rules and experiences. Children are intrinsically motivated to engage in social interactions but sometimes some children fail to find a positive way, or “ticket,” to join in peer play. This ticket can be both a tangible object and intangible behavior that a preschooler uses to show his or her desire to play together and be one of the others in a group. Through peer play, a preschooler can think about more than one viewpoint or thing at a time. Children are able to learn problem-solving skills; for example, to compromise or provide their own ideas or learn to listen and differentiate their peers’ facial expressions. Freud substantiates this viewpoint in suggesting that play is a medium to express feelings that children might not be able to otherwise verbalize. Children practice with feelings of pleasure, negative feelings or anxieties and positive feelings during peer play.

Children start their interacting process by “parallel” play, which involves playing around peers without much consciousness of their peers’ feelings or status. However, as development proceeds, friendships are built and empathy for another is felt, with mutual play as the crucible in which these friendships become refined. Group loyalty and affection ensues, and with it the rudiments of a functioning community. In order to understand the play-related components of such a functioning community, the figure below shows the relationship of these four types of play with the three main categories of developmental stages that are described in the previous chapter.
3.1 Principles for Preschooler Social Plaything Development

1. Safety and Durability

The European Safety Standard (EN71), which was established in 1990, is an internationally accepted universal toy safety standard. Toy products worldwide carry the CE mark showing that they meet the EN71 safety standards. The EN71 toy safety requirement is applied as toy production guidelines to all toys sold in the European Union, as well as those made outside of the European Union. Among the 11 parts of EN71, some of the guidelines have close relationships with social plaything design for ages three to five years old. Part 1 of EN71, for example, focuses on mechanical and physical properties, referring to all parts of a
toy that a child can touch. This part of the standard ensures that those toys cannot choke or otherwise harm children. The other parts are safety-material related. All toys for preschoolers should meet safety regulations for age in design and materials. These toys should not be likely to break easily into small pieces or leave a jagged edge, have sharp points or edges, or be made from toxic materials such as glass or brittle materials because preschoolers sometimes mouth objects to feel the materials.

Guidelines:

1. Conform to European Safety Standards (EN71), most particularly the standards relating to materials and textiles.

2. Accommodate preschoolers’ developmental skills and understand their physical, social-emotional, and cognitive capabilities when designing toys.
2. Facilitate playful and social experiences

Children are playful by their nature. Their earliest experiences of exploring with their senses lead them to play, first by themselves (solitary play stage) and then eventually with others (parallel, associate, and cooperative play). The National Association for the Education of Young Children (NAEYC) has included play as a criterion in its accreditation process for programs for young children. Children clearly learn from play, which correlates directly to a broad range of developmental areas, including the child’s personality, talents, and mental and physical abilities. Recent research in brain development has shown
that a child's ability to interact with others, control and express feelings, and take care of basic tasks independently are as important for success in school as academic skills. The neural pathways needed for learning are actually constructed through a process of positive interactions with others. Thus, children learn through and enjoy the experience of playful interaction with others: it is not just the toy itself that is important. When developing a toy, it is important to consider the social play value first and foremost over the physical object that is the toy. It is important to design toys that create meaningful play experiences for children.

Guidelines:

1. Facilitate communication opportunities through which preschoolers can express themselves and share their own ideas.
2. Help children build confidence with selectable levels in play.
3. Enhance cooperation through multiple play outcomes.
4. Provide the opportunities to plan, and achieve a mutual goal.

3. Maintain equal rights play environment

Siblings and adults in a family are usually responsible for teaching, giving instructions, and taking care of young children. In contrast, preschoolers get less criticism and instruction from peers because they interact at an equal level. This situation provides opportunities for young children to understand and respect peers’ points of view, exchange experiences and learn together. In families there are age differences, which provide unequal rights to family members; in peer-to-peer relationships, the individual has more freedom to think and learn. There is no
authoritative figure to obey among peers. When children play, it is important to give them an equal rights environment that allows them to enjoy following their own minds.

Guidelines:

1. Facilitate easy and intuitive play without a need for help from adults.
2. Eliminate excessively complicated details.
3. Accommodate an age-appropriate developmental range.

4. Provide challenges without over frustration.

A toy should not be just on the margin of the child's developmental growing capacities. According to Parten’s theory, children grow up and experience six types of play, the development of which coincides with their age. However, in recent times children go through the play stages faster before because society changes more rapidly and has become more diverse. This study suggests that a social plaything for preschoolers should not be limited to the children of three to five years old, as some children may feel that plaything does not give enough challenges. Designing a plaything requires a wider viewpoint towards age-appropriate educational play. Toward the younger end of the one to six years old spectrum, children are less likely to engage in challenging play. On the contrary, children toward the older end of this spectrum seek challenge but not frustration. Throughout challenging play, children may cultivate patience and sometimes are more likely to find a cooperative way to achieve a given goal.

Preschoolers’ play is lively, but often they do not play for a long duration, as they
can become easily fatigued or bored. Their tolerance for frustration and a short attention span cause frequent disagreements while playing.

Guidelines:

1. Provide diverse outcomes depending on the way and the stage of the play.
2. Encourage a continuous play process.
3. Accommodate a broad range of age-appropriate development.

Facilitate imagination and inspiration with a sense of realism

Adults often have biases toward “cute toys”, but cute or childish characters are not always the best choice for children’s playthings. The reality is that children enjoy cute toys because they simply tend to have more vivid colors that children can recognize and differentiate. Preschoolers are curious about their surroundings and they are interested in observation and often they try to mimic what adults are doing. They desire to interact with playthings that resemble tools or objects used in everyday.

Guidelines:

1. Provide realistic situations in play.
2. Provide children realistic practical appearing playthings.
3. Make the colors of toys as clear and vivid as possible and be consistent with reality.
6. **Imbue inherent social benefits into playthings**

   Solitary play is seen as important for developing true personal interests and is also an essential stage connecting to parallel and peer play. Children need the opportunity to explore their true personal interests. According to the findings of this study when there is an intermediary transitional phase between parallel play and social play, preschoolers move through this transition with a “ticket”. When preschoolers become interested in interacting with peers, they generate strategies to find a “ticket” to join friends in play. In this interesting process children will try many types of tickets until they finally find the right one that is accepted by their peers. They develop the right ticket through practicing observation and interaction skills. Sometimes a child needs more time or he or she just does not know how to acquire a ticket to join a group. An ideal social plaything should provide each of the transition phases for children to learn how to engage with peers and support each “play type stage” and facilitate transition from solitary play to social play types.

**Guidelines:**

1. Provide different outcomes when enhancing solitary play and peer play.
2. Arrange the elements of the social plaything to promote a sense of self-identity.
3. Provide a play process in which no more than four children participate.
4. Provide observation and mimicry opportunities for children.
5. Facilitate sharing and exchange of stories.
CH 4. Evaluation of existing toys against new principles

4.1 Existing plaything evaluation

This study resulted in (1) a knowledge framework from literature and observational research on preschooler education, play and social skills among peer interaction; (2) a set of principles for the successful development of social playthings, which build on first knowledge framework that aimed to stimulate the social skill development of children age three to five years old.

The Principles for the successful development of social playthings, is tested among the targets that were selected from Taiwan and America and considered of three families and three preschool teachers. Knowledge gained from these families and teachers provide both the validity of knowledge framework and the design principles. These evaluations were about understanding existing playthings of preschoolers. The information below is the introduction, which used in the evaluation sheet for targets.

**Purpose:**

The survey is based on the favorite toy of your preschooler for evaluating its function of enhancing peer interaction.

**Method:**

1. To give a score to three main categories of developmental stages. (From 1-5 points)
2. Match the toy function with the icons below.
The icons below represent three main categories of developmental stages. Evaluate your preschooler’s favorite three toys using Toy Design Principles For The Successful Development of Social Playthings. This activity is meant to review toys that benefit your child’s social skills.

3. Apply Principles For The Successful Development of Social Playthings to examine what are the principles that relate with the toy.

Which of the above detailed characteristics does the toy have?

How does the toy improve peer interaction?

How does the toy not improve peer interaction?

4. Choose the principles that you feel are most effective and note the reasons. Additionally, if you have found ways to improve the toy and make the toy more socially playful for preschoolers, please comment on those improvements.

The following are the details of evaluation sheets in a sequence of three Taiwanese families, three Taiwanese preschool teachers, three United States families, and three United States preschool teachers. Short conclusion of evaluation results is presented after
a set of targets in both Taiwan and the United States. In the end of the evolutions, the final conclusion is made for the principles’ revision.

**Taiwanese Family 1**

- Family members: Father, mother, one boy and one girl.
- Children age: boy-3, girl-5
- Toy: Blokus
- Material: non-toxic plastic
- **Product Features**
  - Provides great strategy game for the whole family
  - Promotes healthy brain activity
  - Includes 60 - piece game board with raised edges
- Recommended age: three years and up
- Recommended number of players: two people
- **Product Dimensions:** 13.1 x 2.1 x 13.1 inches; 1.8 pounds

**Toy description:**

Blokus is a strategy board game that challenges spatial thinking, fun for both kids and adults. Bright colors and simple rules make it ideal for ages five and up. Blokus develops logic and spatial perception while kids learn to be tactical. Players take turns placing pieces on their board, each starting from their corner. The goal is to get rid of all your pieces. The game ends when all players are blocked from laying down any more of their pieces. Includes one game board with 400 squares, 84 game pieces in four bright translucent colors, and an instruction guide.
Toy play purpose and rules:

Once a piece of Blokus has been placed on the board it can't be moved, so plan the moves carefully. Each new piece must touch at least one other piece of the same color,
but only at the corners. (Same color to put toward the corner; different color to put side by side.)

**Method:**

1. Score of developmental stages (1-5 points/each): 8 points

   ![Figure 25. TW family 1- toy scores]

   2. Match the toy function with the icons:

   ![Figure 26. TW family 1- toy function matching]

2. Match the toy function with the icons:

3. Apply the principles for the successful development of social playthings and examine the toy:

   1. Safety and Durability .................................................................
   2. Facilitate playful and social experiences ....................................
   3. Maintain equal rights play environment ......................................
   4. Provide challenges without over frustration ..............................
   5. Facilitate imagination and inspiration with a sense of realistic ....
   6. Imbue inherent benefits into playthings .....................................

   ![Figure 27. TW family 1- principle matching]
According to the Taiwanese family 1, Blokus scored low points in social development but scored high points in physical and cognitive development. The parents indicated that they needed to play together with the younger child in order to guide the children to follow the rules. The five-year-old girl could follow the rule by playing for a longer time after parents had explained the rule three times. This game was a little difficult for the nearly three-year-old boy to play with his older sister. He just played by the shape and enjoyed the color and his sister sometimes got upset when the boy messed up her work. As a result, the girl preferred to play alone or with her parents.

In this case, the parents initially felt that the game was less difficult than it actually was and that the children would be able to play together. However, it was actually much more difficult than adults thought. During play, the children were shown to have fun putting the Blokus game together, but when the children did not follow the rule, the game did not have a means of alerting the children of their mistake. The parents felt the need to participate in the game and guide the children through the game play to help them learn the sense of “corner” and “side”. The game has nothing to do with enhancing imagination; it merely challenges children to properly place the multiple shapes of blocks in the base grid platform.

5. Choose favorite principles for the successful development of social playthings and note the reasons:
Of the six principles, parents in this family preferred principles one and three the most. They want the little sister to spend more time playing with her sibling. When parents participate, the girl refuses to let her brother join in the game. The parents would like to find a toy that is interesting for both children and also engages them to play together.

**Taiwanese Family 2**

▲ Family members: Father, mother, and one girl.

▲ Children age: 3.5 years old

▲ Toy: Goplay travel series- Tic tac toe

▲ Material: paper, magnets

▲ Product Features

  - Provides simple game for the whole family
  - Promotes healthy brain and fine motor activity
  - Easy to arrange and carry
  - Avoid young children mess up the game accidently

▲ Recommended age: 3 years and up

▲ Recommended number of players: 2 people

▲ Product Dimensions: 11 x 0.56 x 11inches; 0.2 pounds

⚠️ Toy description:

This is one game in GoPlay travel series. The travel games are for children more than three years old and their parents. They are packaged in compact, lightweight durable tins making them the perfect travel companion and are true travel games to play on the move. The slim box provides a metallic surface to play on as well as a storage container...
for the play pieces. Tic tac toe has eight pieces of each of the two icons and each of the pieces has a magnet on the back.

▲ Toy play purpose and rules:

Tic tac toe only has one simple rule, to line up three of the same icons in a row. The row could be horizontal, vertical or sloping. Person who first accomplishes a row with the same icons is the winner.
Method:

1. Score of developmental stages (1-5 points/each): 9 points

   ![Social-Emotional development](image)
   ![Cognitive-Intellectual development](image)
   ![Physical development](image)

   <Figure 31. TW Family 2- toy scores>

2. Match the toy function with the icons:

   ![Function matching](image)

   <Figure 32. TW Family 2-function matching>

3. Apply the principles for the successful development of social playthings and examine the toy:

   1. Safety and Durability .................................................................
   2. Facilitate playful and social experiences ....................................
   3. Maintain equal rights play environment .......................................
   4. Provide challenges without over frustration .................................
   5. Facilitate imagination and inspiration with a sense of realistic ........
   6. Imbue inherent benefits into playthings ......................................

   <Figure 33. TW Family 2- principle matching>
4. Choose favorite principles for the successful development of social playthings:

   Principles 1, 2, 3, 4, 5

---

**Taiwanese Family 3**

▲ Family members: Father, mother, and one boy.
▲ Children age: 3 years old
▲ Toy: HABA- color ball set
▲ Material: Wooden
▲ Product Features

   Provides traditional strategic game for two children
   Promotes healthy brain and fine motor activity
   Enhances logical and strategic thinking
▲ Recommended age: three years and up
▲ Recommended number of players: 2 people
▲ Product Dimensions: 5.5 x 3.93 x 1.4 inches

 inauguration

HABA color ball set is composed of one stand with six studs, fifteen red balls and fifteen blue balls which a hole through each ball. One player picks a ball and puts it through the stud that he or she likes, then the next player has to take another color ball to put through another stud. Players can only put one ball on the stud every time and they are able to put balls in every stud. The maximum number of balls on the stud is five. The winner is the first one who can get his or her four balls onto a stud. When players run out of all their balls they still cannot make a line then the game is over. There are three ways
to be successful in this game; 1.) Balls are organized in a horizontal line on neighboring studs. 2.) Balls are in a vertical line on one stud. 3.) Balls are in a sloping line or neighboring studs.

Figure 34. TW Family 3- HABA color ball set

Figure 35. TW Family 3- HABA color ball set play

Method:
1. Score of developmental stages (1-5 points/each): 10 points

- **3** Social-Emotional development
- **4** Cognitive-Intellectual development
- **3** Physical development

(Figure 36. TW Family 3- toy scores)

2. Match the toy function with the icons:

(Figure 37. TW Family 3- function matching)

3. Apply the principles for the successful development of social playthings and examine:

- **1. Safety and Durability** .................................................................
- **2. Facilitate playful and social experiences** ......................................
- **3. Maintain equal rights play environment** ......................................
- **4. Provide challenges without over frustration** ...............................
- **5. Facilitate imagination and inspiration with a sense of realistic** .......
- **6. Imbue inherent benefits into playthings** ......................................

(Figure 38. TW Family 3- principle matching)

4. Choose favorite principles for the successful development of social playthings:

Principles 1, 2, 3, 4, 6
Conclusions for Taiwanese Family

<table>
<thead>
<tr>
<th>TAIWANESE FAMILY</th>
<th>Social-emotional developmental score of the recommended toy</th>
<th>Matching principles</th>
<th>Favorite Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAMILY 1</td>
<td>2</td>
<td>2 (P1,P2)</td>
<td>P1,P3</td>
</tr>
<tr>
<td>FAMILY 2</td>
<td>4</td>
<td>5 (P1,P2,P3,P4,P6)</td>
<td>P1,P2,P3,P4</td>
</tr>
<tr>
<td>FAMILY 3</td>
<td>3</td>
<td>4 (P1,P3,P4,P6)</td>
<td>P1,P2,P3,P4,P6</td>
</tr>
</tbody>
</table>

TW Family 1 gives their toy 2 point in social-emotional development and matches 2 principles of this study.

TW Family 2 gives their toy 4 point in social-emotional development and matches 5 principles of this study.

TW Family 3 gives their toy 3 point in social-emotional development and matches 4 principles of this study.

Figure 30 and Figure 31 show the direct proportional relationship between the social-emotional development score of the recommended toy and the matching of Principles for the successful development of social playthings. Therefore, in the survey of Taiwanese Families, we conclude that the Principles for the successful development of social playthings have a strong relationship with reviewed toy whether the toy has social educational meaning or not.
Taiwanese Preschool Team 1

▲ Teaching experience: 8 years

▲ Student age range: 2.5 to 5 years old

▲ Number of students in a class: no more than 10

▲ Popular toy recommendation: LaQ Puzzle Bits Set

▲ Recommended age: 3 years and up

▲ Recommended number of players: around 6 people

▲ Material: non-toxic plastic

▲ Product Features: LaQ Free Style 400pcs

▲ Product Dimensions: 6.7 x 1.2 x 9.4 inches ; 12.6 ounces

💡 Toy description:

LaQ pieces can make a snapping noise when putting the pieces together. Children will know that the pieces are connected with this snap noise, and this noise encourages them to continue creating their own personal toy. Piecing together these parts are not only great fun but helps a child learn how to concentrate. The biggest difference between traditional LEGO and LaQ is that children can use LaQ to create curves and sphere.
<Figure 40. Teacher 1- HABA color ball set play>
▲ Toy play purpose and rules:

First, children can start out by enjoying the colors and various patterns, which can be made on a flat surface. There are various forms and patterns can be created and this helps children to learn a sense of color coordination. Older children can challenge a 3 dimensional figure by starting out with a flat figure and gradually adding on more blocks.

☐ Method:

1. Score of developmental stages (1-5 points/ each): 10 points

   ![Social-Emotional development](Figure 41. Teacher 1 (TW)- toy scores)
   ![Cognitive-Intellectual development](Figure 41. Teacher 1 (TW)- toy scores)
   ![Physical development](Figure 41. Teacher 1 (TW)- toy scores)

2. Match the toy function with the icons:

   ![Function matching](Figure 42. Teacher 1 (TW)- function matching)
3. Apply Toy Design Principles For The Successful Development of Social Playthings and examine:

1. Safety and Durability ................................................................. 
2. Facilitate playful and social experiences .................................
3. Maintain equal rights play environment ................................. 
4. Provide challenges without over frustration ........................... 
5. Facilitate imagination and inspiration with a sense of reality .......
6. Imbue inherent benefits into playthings ................................. 

(Figure 35. Teacher 1 (TW) - principle matching)

4. Choose favorite principles and write down the reasons:
   Principle 1,2,3,4,6

---

Taiwanese Preschool Team 2

- Teaching experience: 20 years
- Student age range: 2 to 5 years old
- Number of students in a class: no more than 10
- Toy recommendation: Colorful cube (unknown factory, made in Japan)
- Recommended number of players: no more than 4 people
- Material: Wooden
- Product Features: Provide 10 cubes for each five color, 18 toys card with 36 examples of shapes and forms.
- Product Dimensions: each cube is 1 x 1 x 1 inches
Toy description:

Colorful cube is an educational toy for children age more than 3 years old. This can help children learn spatial and constructional concepts. Little children can play cubes starting from graphic shape examples. Children assign the shapes with the same color and then they can challenge themselves by built a 3 dimensional structure.

Method:

1. Score of developmental stages (1-5 points/each): 9 points

- Social-Emotional development
- Cognitive-Intellectual development
- Physical development
2. Match the toy function with the icons:

![Figure 38. Teacher 2 (TW)- function matching]

3. Apply the Toy Design Principles For The Successful Development of Social Playthings and examine:

1. Safety and Durability .................................................................
2. Facilitate playful and social experiences ...................................
3. Maintain equal rights play environment ....................................
4. Provide challenges without over frustration ............................
5. Facilitate imagination and inspiration with a sense of reality ....
6. Imbue inherent benefits into playthings ...................................

![Figure 39. Teacher 2 (TW)- principle matching]

4. Choose favorite principles:
   Principle 1,2,3,4,5

---

**Taiwanese Preschool Team 3**

- Teaching experience: 4 years
- Student age range: 3 to 6 years old
- Number of students in a class: no more than 10
- Popular toy recommendation: FELIX FLOSSE
- Recommended number of players: 2-6 people
- Product Features: one large cardboard with underwater world, one large purple Felix, 20 little fishes of four different colors, one fish dice and one number dice.
- Recommended age: 4 years and up
Toy description:

FELIX FLOSSE is a collective dice game for young children age more than four years old. Children can learn to know colors, numbers, and sense of win-win situation in corporation. Felix and other little herrings want to play together! But Bubble, the greedy fat fish, snaps up every now and then a little fish from the school. But when his eyes are bigger than his stomach, he spits them out again.

![FELIX FLOSSE play](image)

Method:

1. Score of developmental stages (1-5 points/each): 11 points

- Social-Emotional development
- Cognitive-Intellectual development
- Physical development

![Toy scores](image)
4. Match the toy function with the icons:

![Function Matching](image)

<Figure 42. Teacher 3 (TW)- function matching>

2. Apply the toy principles and examine:

1. Safety and Durability ........................................
2. Facilitate playful and social experiences .........................
3. Maintain equal rights play environment ..........................
4. Provide challenges without over frustration .....................
5. Facilitate imagination and inspiration with a sense of reality ....
6. Imbue inherent benefits into playthings ..........................

<Figure 43. Teacher 3 (TW)- principle matching>

4. Choose favorite principles:
   Principle 1,2,3,4,5,6

 Conclusion for Taiwanese Family

<table>
<thead>
<tr>
<th>TAIWANESE TEACHER</th>
<th>Social-emotional developmental score of the recommended toy</th>
<th>Matching principles</th>
<th>Favorite Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHER 1</td>
<td>3</td>
<td>3 (P1,P2, P6)</td>
<td>P1,P3,P6</td>
</tr>
<tr>
<td>TEACHER 2</td>
<td>1</td>
<td>2 (P1,P2)</td>
<td>P1,P2,P3,P4,P5</td>
</tr>
<tr>
<td>TEACHER 3</td>
<td>4</td>
<td>4 (P1,P2,P5,P6)</td>
<td>P1,P2,P3,P4,P5,P6</td>
</tr>
</tbody>
</table>

<Figure 44. Taiwanese Teacher survey analysis>

TEACHER 1 gives their toy 3 point in social-emotional development and matches 3 principles of this study.

TEACHER 2 gives their toy 1 point in social-emotional development and matches 2 principles of this study.

TEACHER 3 gives their toy 4 point in social-emotional development and matches 4 principles of this study.
Figure 44 and Figure 45 also show the direct proportion relationship between social-emotional development score of the recommended toy and the matching of Toy Design Principles For The Successful Development of Social Playthings.

![Figure 45. Taiwanese Teacher survey analysis chart]

The survey of Taiwanese Parts, we can find we can examine whether the toy has social educational meaning or not by applying Toy Design Principles of this study has strong relationship.

Survey in Taiwan: conclusion on meth 4 (choose favorite principles).

![Figure 46. Taiwanese Family evaluation analysis chart on favorite principles]
After further discussing with selected Taiwanese targets:

16.7% of them indicated that P4 is written unclearly for them to understand.

50% of them also indicated that P5 is written unclearly for them to understand.

33% of them indicated that P6 is too vague to understand and make sense.

America Family 1

▲ Family members: Father, mother, 1 boy and 1 girl

▲ Children age: boy, 3 years old; girl, 1 year old.

▲ Toy: Train set

▲ Material: Wooden

▲ Product Features

• Unique shapes and creative designs on each of the 26 pieces

• Intriguing sights and sounds will stimulate the senses

• Building creativity and imagination

• Great for color and shape recognition

• Made of solid beech wood and non-toxic solvent-free dye

▲ Recommended age: 1 - 3 years

▲ Recommended number of players: none listed

▲ Product Dimensions: 14.8 x 10.6 x 1.6 inches; 2.8 pounds

.override

Toy description:

Building blocks made of Beech wood and acrylic some with foil coating with 26 pieces.
Pile these colorful blocks as children like. These blocks are different from the original wooden blocks which recommended age are more than three and have many small pieces.
The Haba Fantasy Blocks transform a child's first buildings into authentic little artifacts
of many shapes and colors. It also has sweet ringing little bell provides incidental music.

![Figure 47. Chosen toy by US Family 1- Haba Fantasy Blocks](image)

![Figure 48. Chosen toy by US Family 1- Haba Fantasy Blocks](image)

▲ Toy play purpose and rules:

Children can enjoy the color, different animals and piling up the blocks together.

☐ Method:

1. Score of developmental stages (1-5 points/each): 8 points
2. Match the toy function with the icons:

3. Apply the principles for the successful development of social playthings and examine:

1. Safety and Durability .................................................................
2. Facilitate playful and social experiences ..................................
3. Maintain equal rights play environment ...................................
4. Provide challenges without over frustration ..............................
5. Facilitate imagination and inspiration with a sense of reality ....
6. Imbue inherent benefits into playthings ....................................

4. Choose favorite principles for the successful development of social playthings:

Principles 1,2,3,4,6
Family members: mother, and one boy.

Children age: 3.4-year-old

Toy: wooden blocks

Material: wooden

Product Features

- Includes 60 solid-wood pieces and wooden storage box
- Stimulates creativity and hones basic motor skills
- Features natural look; pieces are easy for little fingers to grasp
- Excellent tool for teaching math concepts, organizational skills, sequential skills, and spatial relations

Recommended age: 3 years +

Recommended number of players: not listed

Product Dimensions: Pieces vary in size. The complete box is 8.4 x 15 x 17.9 inches.

Toy description:

Build a tower, a town or just about anything with these large solid-wood standard unit blocks. The 60 big, smooth-sanded sturdy blocks are naturally finished with a classic look for hours of classic fun. These blocks feature smooth, rounded edges and are housed in a convenient, sturdy wooden storage crate. The awesome wooden storage crate makes clean up and storage easy.
Method:

5. Score of developmental stages (1-5 points/each): 12 points

- Social-Emotional development
- Cognitive-Intellectual development
- Physical development
6. Match the toy function with the icons:

![Function matching](image)

*Figure 55. US Family 2- function matching*

7. Apply the principles for the successful development of social playthings and examine:

1. Safety and Durability .................................................................
2. Facilitate playful and social experiences ...................................
3. Maintain equal rights play environment .....................................
4. Provide challenges without over frustration ..............................
5. Facilitate imagination and inspiration with a sense of reality .......
6. Imbue inherent benefits into playthings ....................................

*Figure 56. US Family 2- principle matching*

8. Choose favorite principles for the successful development of social playthings:

Principle 1,2,3,4,6 (P5 is important for children development but specially for social-emotional development? However, this is a good principle to educate children with reality)
Family members: Father, mother, and one boy.

Children age:  years old

Toy: PLAY-DOH set

Material: Wooden

Product Features

- Provides traditional strategic game for two children
- Promotes healthy brain and fine motor activity
- Enhance logical and strategic thinking

Recommended age: 3 years- 7 years

Recommended number of players: one or more children

Product Dimensions: 7.1 x 16.2 x 24.5 inches; 8.7 pounds

Toy description, play purpose and rules:

The Play-Doh Creativity Center encourages kids to mold pretend meals, make faces, decorate a party scene and create animal friends. Kids can shape their own creations, or use the 26 built-in molds. There are plenty of cutters, extruders and additional molds to keep the creative juices flowing, and the built-in storage compartments and Play-Doh Pick-Up Stick tool make for easy clean-up. The Creativity Center is more than enough fun for one, or many.

Activity table has more than 45 accessories and a four-picture activity mat that kids can decorate with Play-Doh creations they shape on their own, or create from the 26
built-in molds. Special Play-Doh Pick Up Stick tool makes cleaning up bits of Play-Doh compound easily.

<Figure 57. US Family 3- PLAY-DOH set >

<Figure 58. US Family 3- PLAY-DOH set >
Method:

1. Score of developmental stages (1-5 points/each): 13 points

2. Match the toy function with the icons:

3. Apply the principles for the successful development of social playthings and examine:

   1. Safety and Durability .................................................................
   2. Facilitate playful and social experiences ..................................
   3. Maintain equal rights play environment ....................................
   4. Provide challenges without over frustration ..............................
   5. Facilitate imagination and inspiration with a sense of realism ....
   6. Imbue inherent benefits into playthings ....................................

4. Choose favorite principles for the successful development of social playthings

   Principle 1,2,3,4,5,6
Conclusion for American Family

<table>
<thead>
<tr>
<th>US TEACHER</th>
<th>Social-emotional developmental score of the recommended toy</th>
<th>Matching principles</th>
<th>Favorite Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAMILY 1</td>
<td>3</td>
<td>4</td>
<td>P1,P2,P3,P4,P6</td>
</tr>
<tr>
<td>FAMILY 2</td>
<td>3</td>
<td>5 (P1,P2,P3,P4,P6)</td>
<td>P1,P2,P3,P4,P5,P6</td>
</tr>
<tr>
<td>FAMILY 3</td>
<td>5</td>
<td>5 (P1,P2,P3,P4,P6)</td>
<td>ALL</td>
</tr>
</tbody>
</table>

US Family 1 gives their toy 3 point in social-emotional development and matches 4 principles of this study.

US Family 2 gives their toy 3 point in social-emotional development and matches 5 principles of this study.

US Family 3 gives their toy 5 point in social-emotional development and matches 5 principles of this study.

Figure 62 and Figure 65 show the direct proportional relationship between the social-emotional development score of the recommended toy and the matching of Principles for the successful development of social playthings. Therefore, in the survey of Taiwanese Families, we conclude that the Principles for the successful development of social playthings have a strong relationship with reviewed toy whether the toy has social...
educational meaning or not.

<table>
<thead>
<tr>
<th><strong>American Preschool 1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▲ Teaching experience: 12 years</td>
</tr>
<tr>
<td>▲ Student age range: Two to five years old</td>
</tr>
<tr>
<td>▲ Number of students in a class: No more than 10</td>
</tr>
<tr>
<td>▲ Popular toy recommendation: Railroad set</td>
</tr>
<tr>
<td>▲ Recommended age: Not for children under 3 years</td>
</tr>
<tr>
<td>▲ Recommended number of players: One or more children</td>
</tr>
<tr>
<td>▲ Material: Non-toxic plastic or wooden</td>
</tr>
<tr>
<td>▲ Product Features:</td>
</tr>
<tr>
<td>• Track and train with realistic graphics</td>
</tr>
<tr>
<td>• Includes track, train, trees, figures, and animals</td>
</tr>
<tr>
<td>• Bright primary colors used</td>
</tr>
<tr>
<td>▲ Product Dimensions: 16.2 x 2.6 x 5.8 inches</td>
</tr>
</tbody>
</table>

℩ Toy description:

This railroad set with realistic features includes everything needed for railway fun: a spacious roundhouse engine shed, dozens of tracks in curves and straights, trees, workers, and even traffic signs. Contains multi-piece trains and magnetic-tipped cranes, switches and a T-junction for passing lanes. A suspension bridge, trestle bridge and roundtable, too. Constructed of solid wood, this is durable and brightly colored components with non-toxic paint enhance color recognition. Child can learn colors, shapes, sizes and animals while playing.
5. Score of developmental stages (1-5 points/each): 12 points

- Green: Social-Emotional development
- Blue: Cognitive-Intellectual development
- Red: Physical development
4. Match the toy function with the icons:

![Figure 67. US Teacher 1- function matching]

3. Apply the principles for the successful development of social playthings and examine:

1. Safety and Durability .................................................................
2. Facilitate playful and social experiences .................................
3. Maintain equal rights play environment ...................................
4. Provide challenges without over frustration ............................
5. Facilitate imagination and inspiration with a sense of realism ....
6. Imbue inherent benefits into playthings ...................................

![Figure 68. US Family 3- principle matching]

4. Choose favorite principles for the successful development of social playthings: Principles 1,2,3,4,5,6 (principle 6 should describe more clearly)

<table>
<thead>
<tr>
<th>American Preschool 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲ Teaching experience: 12 years</td>
</tr>
<tr>
<td>▲ Student age range: Two to five years old</td>
</tr>
<tr>
<td>▲ Number of students in a class: No more than 10</td>
</tr>
<tr>
<td>▲ Toy recommendation: Water activity play table</td>
</tr>
<tr>
<td>▲ Recommended number of players: Two to three children</td>
</tr>
<tr>
<td>▲ Material: Plastic</td>
</tr>
</tbody>
</table>

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▲ Product Features:

- Molded-in sections create moats, lakes, canals, and harbors.
- Realistic tools to make the play easier and faster.

▲ Product Dimensions: 6.8 x 28.2 x 29.5 inches

✈ Toy description:

The falling water action from this Water Play Table encourages creative exploration with cause and effect learning. This imaginative water play center encourages hours of fun. Pour water into the wide funnel, and activate the water wheel, which then spills into the inner and outer harbors. Two molded-in sections function as canals, boats, lakes, harbors and more. An elevated design keeps water at preschool level and also keeps ground dirt clear of water and mud from forming on children's feet. It accommodates up to three children to encourage group play. Two built-in drain plugs allow for easy water removal.

<Figure 69. US Teacher 2- Color cube set play>
**Method:**

2. Score of developmental stages (1-5 points/each): 9 points

3. Social-Emotional development

5. Cognitive-Intellectual development

4. Physical development

<Figure 70. US Teacher 2- toy scores>

6. Match the toy function with the icons:

<Figure 71. US Teacher 2 function matching>

3. Apply the principles for the successful development of social playthings and examine:

1. Safety and Durability .......................................................... 
2. Facilitate playful and social experiences .............................. 
3. Maintain equal rights play environment ................................ 
4. Provide challenges without over frustration ........................... 
5. Facilitate imagination and inspiration with a sense of realism ..... 
6. Imbue inherent benefits into playthings ............................... 

<Figure 72. US Family 3- principle matching>

4. Choose favorite principles for the successful development of social playthings:

Principles 1,2,3,5,6 (Is principle 4 really matter to social development?)
▲ Teaching experience: 4 years
▲ Student age range: Two to five years old
▲ Number of students in a class: No more than 10
▲ Popular toy recommendation: Realistic pretend play scene-post office
▲ Recommended number of players: 2 or more children
▲ Recommended age: 3 years and up

่า Toy description:

<Figure 73. US Family 3-Realistic pretend play scene-post office>
**Method:**

1. Score of developmental stages (1-5 points/each): 5 points
   - Social-Emotional development
   - Cognitive-Intellectual development
   - Physical development

<Figure 74. US Teacher 3-toy scores>

7. Match the toy function with the icons:

<Figure 75. US Teacher 3-function matching>

8. Apply the principles for the successful development of social playthings and examine
   1. Safety and Durability ........................................................................................................
   2. Facilitate playful and social experiences .................................................................
   3. Maintain equal rights play environment .....................................................................
   4. Provide challenges without over frustration ..............................................................
   5. Facilitate imagination and inspiration with a sense of realism .........................
   6. Imbue inherent benefits into playthings .................................................................

<Figure 76. US Teacher 3-principle matching>

4. Choose favorite principles for the successful development of social playthings:

Principles 1,2,3,4,5,6
Conclusion for American Family

<table>
<thead>
<tr>
<th>US TEACHER</th>
<th>Social-emotional developmental score of the recommended toy</th>
<th>Matching principles</th>
<th>Favorite Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHER 1</td>
<td>4</td>
<td>6</td>
<td>ALL</td>
</tr>
<tr>
<td>TEACHER 2</td>
<td>3</td>
<td>4.5 (P1,P2,P3,P4,P6)</td>
<td>P1,P2,P3,P5,P6</td>
</tr>
<tr>
<td>TEACHER 3</td>
<td>5</td>
<td>6</td>
<td>ALL</td>
</tr>
</tbody>
</table>

US Family 1 gives their toy 4 point in social-emotional development and matches 6 principles of this study.

US Family 2 gives their toy 3 point in social-emotional development and matches 4.5 principles of this study.

US Family 3 gives their toy 5 point in social-emotional development and matches 6 principles of this study.

Figure 77 and Figure 78 show the direct proportional relationship between the social-emotional development score of the recommended toy and the matching of Principles for the successful development of social playthings. Therefore, in the survey of Taiwanese Families, we conclude that the Principles for the successful development of social playthings have a strong relationship with reviewed toy whether the toy has social
After further discussing with selected the United States targets, 16.7% of them indicated that P4 is written unclearly for them to understand. 25% of them also indicated that P5 is written unclearly for them to understand.

**CH 5. Principles revision for the successful development of social playthings**

According to evaluation, the principles for the successful development of social playthings present an overall close relationship of social skills performance between preschoolers and selected toys. In the evaluation conclusions in both Taiwan and United States, the results show that 16.7% of selected targets think the description of principle 4 is not clearly enough; 38% of selected targets have difficult understanding of principle 5. Principle 6 is “Imbue inherent benefits into playthings” and 20% of selected targets believe that principle 6 is an important bridge from solitary play, parallel plays to peer play but they could not well-received descriptions of principle 6. All the people who
participate in the evaluation of this study think principle 1 is extremely important but they pointed out principle 1 should be the principle for all preschooler playthings. According to this suggestion, the revision of design principles for the successful development of preschoolers’ social playthings establishes by five phases with detailed guidelines and all the phases should base on the safety and durability. The evaluations discovered some aspects on principles for the successful development of social playthings that can be improved. The revision of principles is described below.

**Principles for the successful development of preschoolers’ social playthings**

1. **Facilitate playful and social experiences**
   - Guidelines:
     1. Facilitate intuitive communication opportunities through which preschoolers can express themselves and share their own ideas.
     2. Help children build confidence with selectable levels in play.
     3. Enhance cooperation through multiple play outcomes.
     4. Provide the opportunities to plan, and achieve a mutual goal.

2. **Maintain equal-rights play environment**
   - Guidelines:
     1. Facilitate easy and intuitive play without a need for help from adults.
     2. Eliminate excessively complicated details.
     3. Accommodate an age-appropriate developmental range.
3. **Provide challenges without over frustration.**

   - Guidelines:
     1. Provide diverse outcomes depending on the way and the stage of the play.
     2. Encourage continuous play processes.
     3. Accommodate a broad range of age-appropriate development.

4. **Facilitate imagination and inspiration with a sense of realism**

   - Guidelines:
     1. Provide realistic situations and stories in play.
     2. Provide children realistic and practical appearing playthings.
     3. Make the colors of toys as distinctive and vivid as possible and be consistent with reality.

5. **Imbue inherent social benefits into playthings**

   - Guidelines:
     1. Provide interesting outcomes when enhancing solitary play to peer play through sharing and work together.
     2. Arrange the elements of the social plaything to promote a sense of self-identity.
     3. Provide a play process in which no more than four children participate.
     4. Provide observation and mimicry opportunities for children to follow and learn.
     5. Facilitate sharing and exchange of stories.
Conclusion

Designers can benefit from the principles of this study in multiple ways, for example, develop a social plaything that can facilitate social skills of preschoolers; and designers can also use the principles to evaluate the concept of their products. Parents and educators can use the principles to choose the better social playthings for their children; moreover, to create a social play environment with preschoolers and their playthings.

Preschool is a starting point for children to learn and absorbing new information from surroundings, especially, from their peers. The development of social skills is the only one sequence process of three main aspects of their development. During social play, preschoolers obtain the sense of belonging; feel comfortable to get together with their peers and learn to share their own playthings, stories and emotions. Children connect to each other and develop pre-social skills through cooperation. They start to have the concept of facial and body expressions, get way to understand peers’ thinking and all of the skills are part of empathy skills that children learn from social play. Empathy skills will eventually facilitate preschooler to have positive socialization outcomes through well communicating and respecting people.
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