

## Twenty-First Century Early Childhood Teaching, Learning and Play

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### Abstract

*How is play or technology implemented in early childhood classrooms? As preservice teachers entering the field of early childhood education, we wanted to systematically examine this question and increase our understanding of twenty-first century teaching practices. The objective for this study was to research and consider current ideas and teaching practices therefore expanding our knowledge of early childhood curriculum, teaching and learning. Action research was selected as the research method to achieve this objective (Kemmis & McTaggart, 1988). The purpose was to develop a broader perspective and understanding of our future as early childhood teachers in the twenty-first century. This article describes twenty-first century research on teaching practices in early childhood including play and technology, a comparison between the research and current early childhood teachers' practices as well as our personal early childhood experiences.*

*Key words: early childhood, play, technology, learning, teaching*

### Introduction

The use of play and technology in early childhood classrooms appears to be on a continuum from incentives for completing classwork, educational tools for practicing skills, conveying information, or opportunities for constructive authentic play (Murray & Ramstetter, 2013; Papert, 1992). Early childhood educational research suggests that higher academic standards are achievable through play (Bodrava, 2008; Lehrer, Petrakos & Venkatesh, 2014; Wallace & Russ, 2015). Questions or concerns about using technology in early childhood classrooms possibly stem from the inappropriate use of technology as a learning tool or substituting technology for physical, sensory, kinesthetic play (Fox, 2003; Haugland, 2000).

Educators realize that curriculum for early childhood development requires movement, human connection and natural, caring environments for learning (Epstein, 2012; Epstein & Hohmann, 2012). The concept of play may be described as authentic learning that can involve movement, human contact, caring environments as well as educational. Play is serious, yet not serious, trivial yet profound, imaginative and spontaneous, yet

bound by rules and anchored in the real world (Gray, 2013, p. 139). There are five fundamental characteristics of play: (1) play is self-chosen and self-directed; (2) play is activity in which means are more valued than ends; (3) play has structure or rules that are not dictated by physical necessity but emanate from the minds of the players; (4) play is imaginative, nonliteral, mentally removed in some way from “real” or “serious” life, and (5) play involves an active, alert, but unstressed frame of mind (Gray, 2013, p. 140). Therefore, a developmentally appropriate early childhood curriculum incorporates various forms of play that stimulate authentic learning.

According to the National Research Council (2012) the use of play and technology in education can engage children in hands-on rigorous scientific discovery of concepts through active experimentation. Technology is defined as techniques, skills, and processes using interactive media to invent things, solve problems, or realize challenges. Technological tools include, but not limited to, cell phones, iPods, computers, scanners, printers, internet connections, email, cameras, digital cameras, video cameras, recordable CD's or DVD's, and digital video recorders. Such tools can encourage self-chosen and self-directed exploration, symbolic representation, physical manipulation, and learning modalities controlled by children while they play. For example, researchers discovered that preschoolers can use technology to engage in scientific investigations and create innovative artifacts (Glauert, 2005; Peppler & Glossom, 2013).

Early childhood coursework in higher education emphasizes pedagogies of engage-

ment for child-directed learning that supports children's play. The premise for such pedagogical practices is to insure the use of developmentally appropriate practices for young children, age's three to eight. A research study examining preservice teachers' beliefs suggested that there was an imbalance between knowing and using developmentally appropriate practices (Kim, 2011). Jung and Jin (2014) conducted an investigation of 207 preservice early childhood education and child-family studies majors on the role of play in early childhood classrooms. Participants in the study identified play as important but differed as to the role of play in early childhood learning and curriculum. The differences became apparent as graduating seniors began to assume their role as teachers in their own classrooms. Play was only viewed as helpful but not as important as teaching and children's learning.

How is play or technology implemented in early childhood classrooms? As preservice teachers entering the field of early childhood education, we wanted to systematically examine this question for our future teaching practices. The premise for this study was to find and consider current ideas and teaching practices in order to expand our knowledge of early childhood curriculum, teaching and learning. Action research was selected as the research method to achieve this objective (Kemmis & McTaggart, 1988). The purpose was to develop a broader perspective and understanding of our future as early childhood teachers in the twenty-first century. The remaining sections of this article describes twenty-first century research on

teaching practices in early childhood including play and technology, a comparison between the research and current early childhood teachers' practices as well as our personal early childhood experiences. Personal experiences were included because research indicates that teachers basically teach the way they were taught (Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Sykes, 1999). Awareness of personal biases because of past experiences may create clearer perspectives as future teachers.

### **Twenty-first Century Teaching in Early Childhood**

Twenty-first century teaching in early childhood involves the development of constructivist learning environments that promote multiple pathways for children to actively engage in the learning process. The multiple pathways include child-centered, child-directed play, integrated technology, environments that promote collaborative and cooperative learning, differentiated instruction, integrated curriculum, and assessment for learning (Bewick & Kostelnik, 2004; Darling-Hammond & McLaughlin, 1995; Darling-Hammond & Sykes, 1999). Why? Children are active constructors of their own learning (Piaget, 1945). This infers that the early childhood teachers' role in children's development and learning is as a guide, mentor or facilitator (Gallant, 2000). As facilitators, mediators, models, and coaches, teachers actively engage children in rich meaningful experiences (Sharp 2006).

NAEYC (2009a) identifies play as a way to provide meaningful experiences and an avenue for developing self-regulation, language, cognition, and social competence. NAEYC

(2009a) also notes that children learn in a variety of ways. One may infer that in the twenty-first century child-centered and play-based early childhood curriculum must provide various ways for children to learn through various forms of play including the use of technology.

#### **Play**

As defined previously, play is serious, bound by rules, reflective, thoughtful, imaginative and spontaneous (Gray, 2013). Play supports opportunities for children to acquire and practice such qualities as divergent thinking, problem solving, collaboration, communication, creativity, and critical thinking. The following list of play attributes, table 1, supports the use of inquiry-based learning, guided discovery-learning, class discussions, collaboration, communication, reciprocal teaching, self-regulated learning, and reflective teaching (Allen & Barber, 2015; Bodrova, 2008; Bransford, Brown, & Cocking, 2000).

Authentic play is natural, interactive, imaginative, repetitive, and inventive (Piaget, 1945; Rengel, 2014; Vygotsky, 1978). Nell, Drew and Bush (2013) indicates that meaningful play within a classroom allows children to make their own decisions, be intrinsically motivated, become immersed in the moment, allow for spontaneity even though children plan their play, make changes, and become emotionally engaged.

#### **Technology**

The definition of play aligns with the definition of technology in which techniques, skills, problem solving, and interactive engagement are necessary to accomplish self-selected objectives. Wohlwend and Peppler

(2015) advocates play within any early childhood curricula to include the use of new technologies that encourage intuitive, critical and divergent thinking. Researchers suggest that play, collaboration, creativity, science and technology need to be intricate parts of any play-based curriculum for meaningful play (Wohlwend & Peppler, 2015). Meaningful play includes the integration of technology such as digital cameras, desktop computers, multimedia bookmaking, internet research centers, Mine-craft coding, and various other avenues for learning with technology. Table 2 describes attributes associated with children using technology. The only differences between technology and play attributes are interactive media and technology handling skills.

What about free play? Ginsburg (2006) identifies free play as unstructured playtime that offers opportunities for children to discover an interest as well as access creativity. Unstructured play is controlled, structured, and organized by children during playtime based on their own set of rules. There is freedom to learn how to work in groups, negotiate, share, self-advocate and make decisions. Technology can enhance this freedom. Consider the features of a computer game or toy. Computer games have specific design elements and basic rules but children have options when planning, performing and achieving self-selected results. The Fisher-Price Think & Learn Code-A-Pillar toy introduces preschoolers to problem solving skills for coding. Once again, children have options for planning, executing and determining the end results.

The important message for teachers is the need to find a happy medium between the

use of technology and children's development (Levin, 2013). Emphasis is on the consideration of children's age and appropriate use of technology to promote active engagement in the learning process (NAEYC & Fred Rogers Center, 2012).

## Methodology

### Purpose of the Study

Reason and Bradbury (2006) describes action research as an inquiry that "seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people" (p. 1). The objective of our research was to gain a clearer understanding and perspective of our role as teachers. Our shared goal was to systematically collect interview data from current early childhood teachers, analyze and compare interview responses to early childhood research and theoretical constructs, then describe the results to enhance our awareness and knowledge of curriculum, teaching and learning (Kemmis & McTaggart, 1988).

### Procedures

The systematic collection of interview data began with the construction of questions for early childhood teachers. The following questions evolved from NAEYC's (2009a) five interrelated guidelines for effective teaching. The questions aligned with our coursework as preservice teachers and our overall driving question, how is play or technology implemented in early childhood classrooms?

- How do you create a caring community in your classroom?

- How do you differentiate curriculum?
- How do you promote critical thinking, play, and creativity in your classroom?
- How do you use play to assess student’s development?
- How do you create caring relationships among children through play?

Interviews were conducted through personal emails. The emailed responses were individually read and reread to determine categories based on individual theoretical perspectives. We established descriptors defining categories within the responses for each question. Triangulation was established by two classmates reviewing and evaluating the category selections and coding (Angen, 2000; Patton, 2001). Triangulation was used to establish consistency and validity for credibility and trustworthiness (Angen, 2000; Patton, 2001). Once the analysis was verified the categories were compared with early childhood theoretical constructs. The results were then compared with our personal experiences.

Participants

We interviewed 10 early childhood teachers that we knew. The teachers are employed in four different school districts within the State of Texas - Richardson ISD, Conroe ISD, Klein ISD, Cyfair ISD, and Katy ISD. The teachers’ years of teaching experience ranged from 3 to 12 years. Table 3 describes each teacher’s current grade level and number of years of experience per teacher:

Table 3

| Kindergarten | 1 <sup>st</sup> Grade | 2 <sup>nd</sup> Grade                     | 3 <sup>rd</sup> Grade         |
|--------------|-----------------------|---|-------------------------------|
| 8 years      | 12 years<br>10 years  | 9 years<br>13 years<br>5 years<br>7 years | 3 years<br>9 years<br>4 years |

Findings

How do you create a caring community in your classroom?

NAEYC (2009a) refers to the development of a caring community as part of creating a community of learners that supports development and learning. Ultimately, a classroom that is conducive to learning is one in which children feel safe, their differences are celebrated, relationships are built, and play is encouraged. The foundation for the community is consistent, positive, caring relationships between the adults and children, among children.

Theoretically, caring communities within the twenty-first century classroom emphasizes a comprehensive approach to creating nurturing and stimulating learning environments where children and teacher simultaneously control the learning (Rogers & Freiberg, 1993). The facilitation of significant learning rests upon certain attitudinal qualities that exist in the personal relationship between facilitator and learner (Rogers & Freiberg, 1993, p. 305).

An analysis of teacher responses to the caring community question recognized:

Table 4

| Teacher Response                      | Responses   |
|---------------------------------------|-------------|
| Modeling positive behavior            | 3 out of 10 |
| Enforced respect in the classroom     | 4 out of 10 |
| Open communication - active listening | 4 out of 10 |

Brief responses were received from participants regarding creating a caring community of learners. Play or the use of technology during play was not mentioned as part of creating caring a classroom. Teachers emphasized the use of modeling behaviors of respect, cooperation and open communication that facilitates social development. Bandura's (1976) social learning theory suggests that modeling by the teacher requires attention, retention, reproduction, and motivation from the children to learn – reciprocal determinism. Whereas, Vygotsky's (1978) theory promotes modeled learning when children play an active role in the learning process. Teachers collaborating with children or children collaborating with children facilitates meaningful learning – reciprocal relationships. Such relationships are also important play attributes - social interactions.

Smeets (2005) describes technology as an avenue to support child-centered environments. Technology supports authenticity and allows for the construction of knowledge, open-ended learning, cooperation and collaboration, and mixed ability levels (Smeets, 2005). For example, technology provides multiple opportunities for the development of relationships when children construct digital storyboards, filmmaking, programing encoding, and even robotics.

Children can learn how to create their own questions while technology provides ways to find the answers. Group projects also promote caring classrooms, hands on tactile exploration as well as an understanding of various forms of technology.

How do you differentiate curriculum?

Early childhood curriculum may be defined as a plan of action that includes development and learning goals for experiential learning. Curriculum development needs to include knowledge of: child development, individual differences, knowledge of subject matter, children's culture including parental desires, and long range goals for children to develop skills (NAEYC, 2009b). Concrete experientially based learning facilitates children's movement from pre-operational to concrete operational thinking. Experiential learning coincides with NAEYC's (2009b) recommendation to consider children's developmental levels, needs, and interests when developing curriculum. Focus is on how children learn. Children learn through play (Thompson, 2016; Twardosz, 2012).

An analysis of teacher responses regarding differentiated curriculum indicated:

Table 5

| Teacher Response                        | Responses   |
|---|-------------|
| Documentation required to differentiate | 1 out of 10 |
| Different learning styles               | 3 out of 10 |
| Pre-planning curriculum                 | 3 out of 10 |



NAEYC's recommendations align with some of the teachers' statements about pre-planning curriculum and the use of standards for curricular guidance as a framework for materials, learning experiences, and teaching strategies. Teachers must understand curriculum in order to adapt to individual needs, interests, learning styles, and cultures. Learning styles may be construed as children's preferences for learning. Only one teacher referred to the use of differentiated instruction. But, differentiated instruction occurred only when there was official documentation.

Experiential learning is apparent in differentiated instruction and the Universal Design for Learning. The concept in both educational frameworks imply that focus needs to be on children's interest, needs, and abilities when planning curriculum. This mirrors NAEYC's recommendations for curriculum development. In other words, curriculum adjusts to children's development and learning rather than children adjusting to the curriculum (Rose & Meyer, 2006; Tomlinson, 2012). Emphasis is on the concept that children learn in different ways so children deserve curriculum based on how they learn.

Play was not specified by any of the teachers. Pretend or make-believe play offers the opportunity for children to share ideas and learning. Pretend play supports and facilitates higher-level thinking. It is also directly connected to the development of social and linguistic competence. Wohlewend and Pepler (2015) suggests the use of curriculum based 'playshops' that encourage playful and collaborative learning. For example, children can collaborate and work together when transforming a

version of their favorite story into live-action videos using digital cameras.

The use of technology was not mentioned either. The Technology and Young Children Interest Forum (2008) suggest the alignment and use of technology and media for the development of curriculum goals, child-centered and play-oriented learning, hands-on exploration and relationship building. Sadao and Robinson (2010) recommend the use of technology to meet children's unique and individual needs, learning styles and preferences. Technology may enrich children's differences in order to develop meaningful connections, organize concepts and materials, and offer opportunities to reflect on their learning. For example, digital literacy can offer choices for children when attempting to understand how stories evolve and constructing story narratives (Linebarger & Pitrowski, 2009).

How do you promote critical thinking, play, and creativity in your classroom?

Critical thinking occurs when children demonstrate the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and evaluating information. This infers that children need opportunities to develop the ability to organize, plan, implement and reflect upon their actions which results in the ultimate goal thinking and learning. Opportunities to choose when and how to gather information through observations, experiences, reflections, and communication transition children's intuitive reasoning to critical and divergent thinking.

An analysis of teacher responses about critical thinking, play and creativity

revealed:

Table 6

| Teacher Response                  | Responses   |
|-----------------------------------|-------------|
| Free choice – independent thought | 3 out of 10 |
| Age appropriate materials         | 3 out of 10 |
| Centers                           | 6 out of 10 |
| Games                             | 2 out of 10 |
| Limited room for play             | 1 out of 10 |

Each teachers' response, except the limited room for play, implies efforts to access children's critical thinking, creativity and play. Three teachers reported the use of choice during the school day. Children must have opportunities to make choices and explore topics of interest (Dinnebeil, Boat & Bae, 2013). Choice allows children the opportunity to explore, create ideas and take control of their learning (Lanaux, Vice, & Fasching-Varner, 2014). Self-regulation, ownership, self-control, and self-directed learning is developed when children make choices and decisions free from adult intrusion (Wood, 2014).

Teachers identified the use of age appropriate materials. Promoting critical thinking, play and creativity requires age appropriate learning environments that are organized with materials appropriate at children's developmental levels (Dinc, 2011). Materials need to be interest-driven (Peppler, 2014) as well as meeting the needs of children from different cultures and different sexes (Dinc, 2011). Materials should also allow children to gain experiences through child-directed research and discovery (Dinc, 2011).

Teachers use of games, centers and age

appropriate materials may or may not allow children multiple pathways for accessing and processing information. Teachers did not describe or specify how games, centers or materials were used – teacher-directed or child-directed. According to Lanaux, Vice, and Fasching-Varner (2014) centers can be used so children have full control of what they are learning and when. Centers create opportunities for children to collaborate and create an environment for independent learning.

Game-based learning offers engaging and motivating alternatives to traditional learning environments (Denham, Mayben, & Bomar, 2016). Game-based learning characteristics are similar to conditions for learning while children play: rule-based, active, contextually situated and engaging. Games create excellent learning environments because they are interactive, provide ongoing feedback, grab and sustain attention, and have appropriate and adaptive levels of challenges (Denham, Mayben, & Bomar, 2016 p. 71).

Teachers did not mention the use of play or technology when children are allowed to make choices. Age appropriate materials including technology tools allow students to create multiple pathways to access the information they learned. Meaningful learning and achievement can occur through gamification and the use of computers to support critical thinking, play and creativity (Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015; Mohammad & Mohammad, 2012).

How do you use play to assess student's development?

Assessment provides a record of growth in all developmental areas: cognitive,



physical, language, and social emotional (Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015; Ntuli, Nyarambi, & Traore, 2014). The purpose and objective of assessment is to connect standards with authentic learning. There should be a systematic assessment framework, which focuses on specific skills, concepts, or characteristic, as described in learning expectations or outcomes for children (Currie, 2001). Assessment in early childhood classrooms include observations, developmental checklists, rating scales, rubrics, performance-based strategies for authenticity, as well as portfolios.

An analysis of teacher responses to the assessment question indicated:

Table 7

| Teacher Response                  | Responses   |
|-----------------------------------|-------------|
| Observation                       | 5 out of 10 |
| Games to assess student learning  | 4 out of 10 |
| Play to assess social development | 4 out of 10 |

The teachers cited observation and play including games as avenues for formative assessment. Play and games, as described previously, allow students to create multiple pathways to access and construct meaningful connections during the learning process. Gaming technology can create challenges as well as assess learning (Phillips & Popovic, 2012). Phillips and Popovic (2012) indicate gaming technology as an assessment tool that can also provide on-going feedback directly to children.

Teachers reference to the use of observation assessment aligns with NAEYC’s premise that effective teaching begins with thoughtful,

appreciative, systematic observation, and documentation of each child’s unique qualities, strengths, and needs (Kline, 2008; NAEYC, 2009a). Observational assessment allows teachers to adjust instruction, scaffold learning and plan differentiated curriculum for each student (Kline, 2008; Kuo-Kuang, Peng-wei, & Chung-Ho Su, 2015). How do you create caring relationships among children through play?

Building caring relationships with children requires mindful involvement, providing comfort, responding to children’s questions, building on teachable moments, and attending to children’s individualized needs. Trusting relationships between teachers, children and their families increases meaningful learning because children become comfortable within their various environments – home, school, and community. Relational security promotes confidence and competence for exploration, supports self-regulation, decreases stress, and enables children to learn from sensitive guidance provided by teachers (Thompson, 2016).

An analysis of teacher responses related to creating relationships described:

Table 8

| Teacher Response                        | Responses   |
|---|-------------|
| Modeled positive behavior               | 3 out of 10 |
| Observe and interference when necessary | 2 out of 10 |

The use of modeling is a restatement of teachers’ responses from the caring community question. Observation and interfer-

ence when necessary statements are similar to the responses identified in the assessment question. Some teachers did not respond to this question. Play, technology, or play using technology were not mentioned within any response to this question.

Encouraging an environment of personal relationships facilitates the development of children's empathy and problem-solving skills which are important areas of self-regulation (Baldwin, DaRos-Voseles & Swick, 2003). Play increases motivation to learn within meaningful contexts (environments) as well as meeting intrinsic needs for social interaction (Vygotsky, 1978). As stated previously, play can include the use of technology. Couse and Chen (2010) research notes that the use of tablet computers provided support for the National Educational Technology Standards because children could use the tablets to communicate and work collaboratively. The tablets supported individual learning and contributed to the learning of others. Children began to produce innovative products using technology.

### Conclusion

Experiential learning where children are physically and actively engaged in the learning process penetrates the current early childhood education literature. Teaching in the twenty-first century stresses pedagogies of engagement child-directed learning with emphasis on play and play with technology.

The purpose of this study was to synthesize our understanding of our planned profession before we become teachers. Awareness of personal biases because of early childhood experiences compared to twenty-first century re-

search and the reality of current teaching practices will help develop clearer perspectives of future teaching practices. One of John Dewey famous quotes emphasis the need for such an awareness - *You cannot teach today the same way you did yesterday to prepare students for tomorrow.*

### Personal Experiences

Attending public school primary classes provided the following perception of early childhood teaching practices before early childhood course work. A caring environment appeared to be a low priority in the classroom. Teachers were warm and caring but interaction among children during class was limited. Only one teacher appeared to use differentiated instruction to meet children's interests. There was limited access to manipulative materials. And, assessments were geared to daily stated objectives and passing standardized tests. An awareness of negative relationships between teachers and children was apparent when teachers didn't like a certain student. The student was seen as the "odd one out" and often had trouble making friends.

As a product of homeschooling, a caring community was present because everyone was responsible for helping each other learn. Experiential learning occurred daily with multiple materials and multiple ways to make connections for problem solving, critical thinking and creativity. We would use manipulatives to create visual representations of written numerals and properties, create lap books on different math concepts, and build problems with Legos or Lincoln logs. Assessment occurred during multisensory, experi-

mental exploration and hands-on activities. Play was at the center of everything we did. Relationships were strong, trusting and vital for planning play-based learning opportunities with other families.

### **Future Practices**

What have we discovered and learned? As future teacher in public schools, we have come to the conclusion that a balance is needed between child-directed and teacher-directed learning. Both approaches facilitate the development of respect, open communication, and active learning. Meaningful learning is a very important part of development and allows for connections to be made, pathways to be built, and old to new schemas are to be constructed for future development (Baldwin, DaRos-Voseles, & Swick, 2003). Play and the use of technology during play can be part of early childhood development and learning.

We plan to construct and implement curriculum to meet children's needs based on abilities and interests. The development of curriculum includes play as well as play with technology. Current research, teacher interviews and coursework as well as scheduled and unscheduled contact hours with children have influenced the need to incorporate play and technology into curriculum.

Children must have age appropriate materials. As twenty-first century teachers the necessary equipment, tools and use of technology can extend beyond the classroom and into real life situations. Materials can include filmmaking, multimedia bookmaking, writing games using coding, virtual meetings with other classes around the world, and much, much more. We discovered that kindergarteners can construct

digital storyboards and make movies. First graders are using Hour of Code to develop their own games.

The comparison between teacher interviews and early childhood research revealed that twenty-first century classrooms are evolving technologically. Technology can support the documentation of children's progress and maintain records of performance-based assessment strategies through photographs, digital videos, games, projects, work samples and portfolios. Basically, technology offers immediate documentation of children's progress, evaluation for instructional planning.

Our biases are evident with regard to creating relationships among children through play-based curriculum. Play can be integrated into the curriculum for social and personal learning (Saracho, 2012). Child-directed learning requires collaboration which translates into the need for positive relationships among children (Saracho, 2012). Vygotsky's (1978) theory stipulates that children's development occurs through sociocultural interaction. Teachers can construct appropriate situations and intervention strategies that motivate and encourage relationships through play which will also motivate learning (Saracho, 2012).

### **Limitations**

There are definite limitations within this study. Only 10 teachers were interviewed. Additional interviews may or may not alter the findings. Additional coursework to complete teacher certification program requirements may also influence perspectives.

### Summary

How is play or technology implemented in early childhood classrooms? The purpose of this action research study was to gain insight into early childhood teaching practices that include play and technology. Kemmis (2010) supports such research because our desire was to increase our knowledge of early childhood practices which may transform our future practices. Another John Dewey quote applies to this quest. *Education is not an affair of 'telling' and being told, but an active and constructive process.*

As twenty-first century teachers, it will be our responsibility to raise up a generation of critical thinkers and problem solvers. This is possible through play and the use technology during play. Children's desire to learn and be creative is fostered through play. The environment should therefore be one that fosters choice, self-regulation and self-discovery. It should allow children to use their imagination as well as explore the world around them through experiential learning using all of their senses, manipulating objects, and learning through trial and error.

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Table 1

***Play Attributes:***

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• Develop multidimensional skills</li><li>• Test their capacities &amp; capabilities,</li><li>• Socially interact</li><li>• Develop relationships</li><li>• Process emotions</li><li>• Apply new learning</li><li>• Set achievable goals</li><li>• Learn how to problem solve</li><li>• Develop fine and gross motor skills</li><li>• Develop creativity and innovation</li><li>• Language &amp; vocabulary development</li></ul> | <ul style="list-style-type: none"><li>Make connections with prior knowledge</li><li>• Develop self-regulation &amp; self-control</li><li>• Develop Critical thinking</li><li>• Physically experience the world around them</li><li>• Engage in opportunities for self-awareness</li><li>• Learn by doing</li><li>• Foster physical development</li><li>• Promotes engagement &amp; movement</li></ul> |
|---|---|

Table 2

***Technology Attributes:***

- Develop multidimensional skills
- Interactive media - interactive literacy
- Social interactions develop relationships
- Technology handling skills
- Apply new learning
- Language & vocabulary development
- Learn how to problem solve

***Technology Attributes:***

- Make connections with prior knowledge
- Develop self-regulation & self-control
- Develop critical & divergent thinking
- Engage in opportunities for self-awareness - collaboration
- Learn by doing – increases dexterity
- Promotes engagement & movement
- Develop creativity and innovation

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