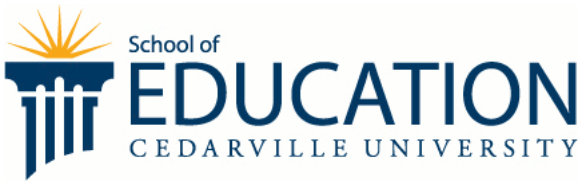

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An Analysis of Technology Integration Within a Play-Based Learning Environment at the Preschool Level

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Abstract

The purpose of this study was to research this question, "Is technology use appropriate for preschool instruction within a play-based pedagogy and philosophy of education?" The definition of the play-based preschool learning environment is provided, the technology debate outlined, along with a qualitative research study, illustrating the opinions and beliefs regarding technology use of teachers within a play-based learning environment. This study relates research findings to the literature review and suggests that technology use within a play-based learning environment is possible when technology is used appropriately and with balance, to enhance and extend the curriculum. A balanced approach to technology use requires active and intentional use alongside careful planning on the part of the teacher. The methods, instrumentation, and procedures used are described. The results provide a complete summary of the views and opinions of the population studied and suggestions for effective implementation. The analysis section of the research presented provides summaries of the sample population used and provides perspective on technology use within a Christian worldview and from a biblical standpoint.

Introduction To The Study

Technology use and consumption is weaved into the fabric of everyday life. From smartphones readily available at arms reach to the use of tablets, social media, and electronic media content, technology has boomed over the previous ten years. The digitization of the culture has led to a pervasive use of technology in work, school, and personal life and the consumption of image, sound, video, and text-based information (Edwards, 2013). For many, technology consumption is a relatively new phenomena, but one that is here to stay. Individuals today live in a post-industrial age where information and communication technologies abound. Many stakeholders of education-parents, teachers, and students-question the role that technology should play in school instruction. When it comes to exposing younger children to technology, whether it is helping or hurting their development and/or academic development is much debated. Opinions mostly guide the family's decisions on technology use in the home. The American Academy of Pediatrics recommends avoiding screen time for children under two years of age and limiting screen time to two hours a day for children two and older (American Academy of Pediatrics, 2013). However, research shows that 70% of children birth through two years old are using electronic media in their daily lives (Lentz, Seo, Gruner, 2014).

Many stakeholders are revisiting the debate of technology use in the early childhood education classroom. Educators have traditionally asked the question, "How young is too young?" and have now made the critical shift to, "How much is 'just right'?" (Lentz, Seo, Gruner, 2014). The questions that will guide this study focus on the use of technology in the early childhood education preschool setting. Should technology

be used as part of preschool instruction and curriculum? What is the philosophy behind play-based preschool pedagogy and curriculum? How does technology fit into play-based pedagogy at the preschool level? This is a critical question, which has major implications for teachers, parents, and students. It is important to understand both positive characteristics and benefits of technology as well as the negative aspects described in current literature and research.

For educators and parents, the preschool years are often viewed as a nurturing time for the young child, a time when the student is permitted to explore, discover, and learn through play-based activities and curriculum. The preschool years are often meant to develop communication skills, self-help skills, and the building blocks for the written language. It is through play that children encounter and explore their own environments. For children, play is a natural way to learn about themselves and the world around them. Through interaction with peers and teachers, motor skills, language skills, and social skills are developed and refined (Edwards, 2013). When the purpose and function of play in the life of the preschool child is considered, is the integration of technology developmentally appropriate and beneficial?

When it comes to young preschool children, it is mainly opinions, not research, that dominate the decision-making regarding technology use. Edwards (2013) argues that an important aspect of children's technology use is separating technology *use* from the idea of technology *consumption*. Patterns of childhood consumption have emerged with the digitization of the culture because the technology itself enables consumption. For example, a child may view a popular DVD at home or on television. Later the child is taken out to a store and in the midst of errands, begins to feel bored. The child takes the

handheld technology device from their parent and then uses it to "consume" the same movie, with or without parental permission. It is this view of technology as "consumption" that makes many educational stakeholders shy away from its integration into the curriculum. It is increasingly difficult to separate a child's use of technology from a child's consumption of technology.

The guiding thoughts of this project consider the current scientific recommendations of technology use and screen time for young children while understanding that technology is weaved into daily family routines. The question of technology exposure for young children is controversial and one that many have vested interest in its answer. Young children learn best through experiences with the real, physical world (Kentucky Governor's Office of Early Childhood, 2014). However, certain types of screen time can also increase a child's physical and cognitive activity and have associated benefits for health and development (Sweetser, Johnson, Ozdowska, Wyeth, 2012), suggesting that not all technology related activities are equal in terms of interactivity. This project seeks to identify the proper balance between the play-based pedagogies of preschool curriculum and the ever-changing and developing world of technology use for instruction.

Definition of Terms

Childhood. A social, historical, and cultural construction of the understandings of children, connected with how a society positions and understands children at a given point in time (Edwards, 2013; James, Jenks, and Prout, 1998).

Digital Technologies. This includes multiple desktop and mobile technologies; Internet enabled technologies that operate as platforms for consumption of digital media (Edwards, 2013).

Digitization. This is commonly associated with the changes in the production and consumption of image, sound, video, and text-based information (Edwards, 2013).

Early Childhood Education. This is the field of study that focuses on the care and education of children from infancy to school age (Dietze, Kashin, 2013).

Executive Function. The cognitive control processes that regulate thought and action in support of goal-directed behavior, which develops dramatically during childhood (Barker et al., 2014).

Montessori and Tools of the Mind Program. Programs based on the work of Vygotsky, who theorized that imaginative play supports the development of children's self-regulated processes. Through pretend play, children may practice engaging self-directed forms of executive function and maintain their own goals to guide behavior (Barker et al., 2014; Vygotsky, 1967).

Play. This is the primary mechanism through which children encounter and explore their immediate environment. Play becomes the natural way to motivate children to learn about themselves and the world around them. As children interact with peers and teachers through this discovery mechanism, their language and social skills are fostered and their motor skills are developed and refined (Edwards, 2013; Ministry of Education, 2012).

Screen Time. This is the viewing or use of anything with a screen, including TV, DVDs, video games, and computers. Active screen times involves cognitively or

physically engaging in screen-based activities, such as interacting with an electronic white board or completing homework on a computer. Passive screen time involves sedentary screen-based activities and/or passively receiving screen-based information, such as watching TV or a DVD. (Sweetser, Johnson, Ozdowska, Wyeth, 2012)

Structured activity and less-structured activity. Structured activity includes any time outside of formal schooling spent in activities organized and supervised by adults. Less-structured activity is defined as voluntary leisure activities where adults provide fewer guidelines or direct instructions (Barker et al., 2014).

Statement of the Problem

The debate over the appropriate use of technology in school has dramatically changed over the previous ten years in the early childhood community (Lentz, Seo, Gruner, 2014). The past debate posed questions about the use of technology at early ages and the cognitive and developmental dangers associated with its use. There are strong, research-based cautions from the American Academy of Pediatrics (2013) that give clear guidelines on screen time exposure for young children, ages two and under. However, the conversation is changing and evolving and it may be time to pose new questions on what is the right amount of technology use for instruction? Recent advances in computer technology has opened up a new world of interactivity for young children who were once restricted in their use of computers due to the barrier of a keyboard and mouse. With the development of touch screens, children are now free to explore and interact with the technology in new ways that were not possible before (Lentz, Seo, Gruner, 2014).

While technology is rapidly expanding and changing to include young toddlers and preschoolers, much is still unknown in regards to technology use and the healthy

development of young children. Early childhood professionals must use their expertise and knowledge, along with the literature and research available, to create environments that support the integration of technology use in ways that are developmentally appropriate (Lentz, Seo, Gruner, 2014; Jaruszewicz, 2009). While technology is an intricate part of the dominant culture, it is important to build an accurate and true understanding of the positive and negative characteristics of computer use in today's early childhood classroom. While there are many positive uses for technology, there are many cautions that the stakeholders of education must be aware of. It is important to have a balanced perspective on how technology can enhance learning as well as detract from learning (Lentz, Seo, Gruner, 2014).

Children enter today's early childhood education classrooms more technologically advanced than past generations. Children interact with technology and social media at younger ages and have also observed their parents' daily interaction with technology and digital content. Dietze and Kashin (2012) suggest that it is important for teachers to understand this new generation of learners and consider the place technology (e.g. mobile devices) and social media (e.g. Facebook, Twitter, YouTube) have in their teaching pedagogies and learning situations. Students are experienced in digital interaction and bring knowledge about computers and other devices to the educational environment. Much of the negative stigmas associated with technology and early childhood education implementation are the result of research conducted more than ten years ago. Therefore, it is important to revisit the conversation on technology use for instruction in the preschool classroom to include the most up-to-date and relevant research.

Scope of the Study and Delimitations

The study examines early childhood education's play-based pedagogy and the appropriateness of technology integration into that framework and philosophy of education. Play-based pedagogy has a strong research-based history in early childhood education. It will explore in detail the philosophy of education behind play-based learning as well as the objectives and goals of this type of instruction. The scope of this study involves identifying and explaining specific goals of instruction as well as learning outcomes for the student. Brief attention will be given to other various types of preschool pedagogies in an effort to compare these perspectives to play-based learning. Play-based learning will be explained in detail, including classroom environment, learning outcomes, student behavior and activities, teacher instruction, as well as its philosophy of education.

Additionally, this study will examine the views, beliefs, and philosophies of Immanuel Baptist Church Early Childhood Education Center's (IBC-ECE) preschool program. The national standards from the AdvancED External Review for Early Learning Schools will be used to explain the purpose and mission of the school's preschool program. The goal of this study is to clearly define play-based learning for all stakeholders at IBC- ECE and determine whether technology integration is developmentally appropriate and simultaneously able to maintain a warm, nurturing, and caring environment that parents, teachers, and students of IBC-ECE have come to expect as part of the school's culture.

Lastly, the study will focus on the appropriateness of technology integration at the preschool level, ages three years to five years old. Technology integration will be discussed in terms of its impact on students, teachers, and parents. The debate over

technology use will be defined and the opposing views clearly explained. Information will be presented on the appropriateness of technology use in early childhood education, including benefits and cautions of technology use in instruction and its implementation. While the perspective of this research can be applied on a much larger scale, the purpose of this study is to serve and assist the stakeholders of Immanuel Baptist Early Childhood Education Center.

A discussion of specific, detailed, action-based plans for technology implementation is not included in this research. While many examples of effective technology use at the preschool level will be given, this study will not provide adequate resources and information on how to effectively educate and develop teacher pedagogies and plans for school-wide implementation of best practices. This would be an interesting topic for future study and an entire thesis could be devoted solely to this topic. The research will focus on whether or not technology is developmentally appropriate in reference to a play-based learning environment for ages three through five years old. A detailed action plan for implementation is beyond the scope of the present study.

The present study focuses on the technology culture of present-day society. Technology changes rapidly, at a rate that can be very challenging for educators to keep current with. Research more than five years old will not be included in this study. Research conducted more than five years ago may be referenced but solely to compare technology of then to the technology of now and how it is used in education. The information must be relevant and current because of the rapid advances in technology, especially with the more recent development of touch screens that have included toddlers and preschoolers in the technology discussion.

Significance of the Study

Technology impacts the current day-to-day instructional choices for teachers and administrators. The question of technology use and whether it is developmentally appropriate for the early childhood years is a contemporary problem that requires answers. Many stakeholders in education, especially teachers, question the strategies for technology implementation and feel they lack sufficient resources and knowledge on how to properly incorporate technology into their daily lessons. Teachers, parents, and administrators must have a proper understanding of the current technology culture and how it impacts today's classroom. The question of technology use must be reexamined to include the most current research. Educators must realize that today's digital generation has a sophisticated understanding of technology and utilize it in their daily lives.

Technology is part of the culture and everyday life for young people as well as adults. As part of an innovative society that is always advancing and progressing, technology is here to stay. The entire modern culture has changed as a result of technology and education is not exempt from that change. Educators must stay current and relevant to meet the needs of the culture and society.

The current study seeks to make sense of the technology debate in regards to early childhood education. Parents must understand how the technology environments of their own homes influence the lives of their children. Educators must also understand that preschoolers come to school with a potentially sophisticated knowledge and awareness of technology and its use. Technology use in the classroom must be weighed in regards to its benefits as well as its potential dangers and cautions.

Methods of Procedure

During this study the question will be examined and answered, is technology use appropriate for preschool instruction within a play-based pedagogy and philosophy of education? A full literature review will be examined on the subject of technology use for preschool instruction, administrators and teachers of a local preschool will be consulted and surveyed, and a resource created for stakeholders that explains the philosophy of education as well as the stance on technology use for that local preschool program.

A full literature review of instructional technology use in regards to early childhood education will be examined. A portion of the study will examine and define play-based pedagogy. Based on the research, it will be determined whether technology use is developmentally and instructionally appropriate within a play-based curriculum and play-based philosophy of education. Available research will be gathered from online databases such as Academic Search Complete, Ebsco, OhioLink, Education Full Text and Education Research Complete, PsychInfo, and ERIC. The AdvancED External Review Team Workbook for Early Learning Schools and the national standards for preschool accreditation will be consulted.

After consulting the research named above, the literature will be analyzed in order to identify key aspects and philosophies of play-based pedagogy. I will identify the purpose and definition of play-based pedagogy and the appropriateness of this type of preschool curriculum in relation to other philosophies and types of education during those formative preschool years. Play-based pedagogy will be evaluated and analyzed as well as the adaptation of technology use and implementation for ages three to five years old. Technology use for preschool instruction will be explored and analyzed using the most

recent and up-to-date research. Only research conducted within the last five years will be used in this study to reflect the most current and relevant findings on the rapidly changing technology culture.

Upon completion of the literature review, the early childhood education teachers and administrators of Immanuel Baptist Church's Early Childhood Education Center (IBC-ECE) in Lexington, KY will be consulted. The teachers and administrators will be surveyed through open-ended questionnaires which will ask the them to reflect on their opinions and views of play-based pedagogy, technology use for preschool, and the role technology may or may not have in a culture of "play." Other local preschools that represent a different philosophical approach from that of IBC-ECE will be consulted and interviewed. The goal is to gain insights from a more traditional or classical approach as well as Montessori approaches and see how they approach technology use for instruction. Fayette County Schools in Lexington, KY will be consulted in order to identify the role that technology plays in the kindergarten curriculum.

The questionnaires from teachers and administrators will be analyzed in order to create a resource for IBC-ECE that clearly states their educational philosophy, mission, and goals along with their stance on technology use in the preschool classroom. I will work closely with administration in order to create this print and digital resource that will be available for parents as they visit IBC-ECE as prospective families that will attend. Many parents currently request information about technology use in the classroom so this will be a beneficial and relevant tool for the early childhood education program of Immanuel Baptist Church. This project will fulfill an educational need and help provide solutions for all stakeholders.

Literature Review

Section One: Play-Based Pedagogy

Definition

Play-based learning is undoubtedly the main driving force behind many early years learning institutions and curriculums (Wong, Wang, Cheng, 2011). Play-based learning has a strong research-based history and is recognized as playing a vital role in the young child's development. Play is defined as providing opportunities for children to learn through discovery, creativity, improvisation, and imagination (Edwards, Cutter-Mackenzie, 2011). Learning through "play" is a central component of many preschool curriculums and promotes a child-centered approach to learning, which encourages self-discovery, active engagement, student-initiation, creativity, goal-directed motivation, socialization, and freedom to interact with materials as the student chooses. By definition, play is free from rules imposed by outsiders, such as teachers, and requires active engagement from the players themselves (Wong, Wang, Cheng, 2011). It is through this design that children are given the best possible start and opportunities to maximize their learning potential (Hesterman, 2013). Play-based learning is a non-prescriptive approach to free play and self-activity with teacher as facilitator who provides guidance and remains responsive to children's interests (Hesterman, 2013). The ultimate goal of play-based learning is to apply qualities such as active engagement, goal-directed motivation, and positive attitudes to quality learning (Wong, Wang, Cheng, 2011).

Foundational Philosophy and Theoretical History

Play-based learning is closely tied to the work and theories of many early childhood educators throughout the years. Rousseau theorized that learning occurs naturally within meaningful and realistic contexts that emerge from the child's everyday activities (Thomas, Warren, deVries, 2011). Froebel further expanded the theory to promote that play is the agent through which learning occurs most naturally (Thomas, Warren, deVries, 2011; Edwards & Hammer, 2006). The work of Piaget's stages of cognitive and social development is identified as appropriate for supporting learning within early childhood education. The idea of learning through play is governed by an acceptance of those corresponding stages of development (Thomas, Warren, deVries, 2011; Arthur et al., 2007). Play is recognized as a natural way to promote learning through realistic and meaningful contexts for the child. Vygotsky's socio-cultural development theory believes that learning and play is highly tied to the child's culture, therefore the definition and meaning of play in an educational setting will evolve over time. It is through the social relationships encountered during play that students actively participate in cultural meaning-making (Edwards, 2013; Vygotsky, 1976). It is through this natural interaction with their immediate environment that children begin to learn about themselves and the world around them. As a result, language and social skills are fostered and motor skills are developed and refined (Edwards, 2013).

Teacher-Role

Given the definition and descriptions of student-directed learning through the vehicle of play, it may seem that the teacher's role in the early childhood context is that of a glorified babysitter. This assumption could not be further from the truth. The

teacher's role is that of an intentional and active guide and facilitator, supporting children's learning and understanding. Teachers provide the materials for play and carefully plan environments which best encourage a child's natural curiosity and desire to learn and explore their environments. While students are autonomous and self-directed in their play, the teachers provide context for the play and real-world connections that allow play to be extended into quality, meaningful learning for the child. The opposing traditional, highly structured learning environments leave very little room for innovative teaching (Wong, Wang, Cheng, 2011). Teachers in play-based learning have the opportunity to be keen observers and identify teachable moments and lead the children in thoughtful exploration (Wong, Wang, Cheng, 2011). It is the teacher's role to assist the child in making meaningful connections and allow them to acquire, test, refine, and reflect on the knowledge and skills gained through play (Edwards, Cutter-Mackenzie, 2011). In order for play-based learning to be truly effective, it must draw upon the child's cultural experience and actively include the educator in planning and connecting play to conceptual and content-based ideas (Edwards, Cutter-Mackenzie, 2011). Early childhood educators will take on many roles and use a wide range of strategies to support children's learning through play. Teachers provide a crucial balance between child-led and child-initiated approaches and educator-supported learning. The intentional teacher in a play-based environment allows all the working pieces in the classroom to fit together through deliberate, purposeful, and thoughtful teaching and planning (Edwards, Cutter Mackenzie, 2011).

Student-Role

In order for play within the preschool setting to truly be effective, the student must be given freedom of choice and empowerment to act upon those choices. Play allows the child to interact with the world and with others socially, it also allows them to express emotions and establish symbolic representation capabilities. Therefore, it is important to identify what play means to the child (Wong, Wang, Cheng, 2011). In the study conducted by Wong, Wang, and Cheng (2011), when asked to define play, children perceived play as a joyful activity and one that incorporates positive attitudes. Play is the exact opposite of work and not related to tasks that are considered 'boring'. The same study also noted that cultural context plays a significant role in the interests of the child and therefore, their play (Wong, Wang, Cheng, 2011; Vygotsky, 1987). Indicators of play include having clear goals set by the player, an altered sense of time, the child's concerned attention, intrinsic motivation, and the belief that play is valuable for the sake of the experience itself (Wong, Wang, Cheng, 2011; Csikszentmihalyi, 1993). Children have a clear idea of what constitutes play and what does not. That is why it is important for stakeholders to understand how the child perceives play. Most often, children associate play with feelings of joy and situations that are free from rules imposed by the teacher. Children also find it important that they initiate play and have freedom of choice in its creation. Imaginative activities that are fun, enjoyable, and filled with the symbolic representation found in pretend play are also very important (Wong, Weng, Cheng, 2011). The same study found that children also very clearly associate things like writing, reading, or homework as "non-play" and more closely described as learning activities. It is also important to note that one of the major components of play is the socialization

aspect. As children interact with peers and educators, their language and social skills are developed and enhanced. Children have a strong desire to feel connected to the world and play is a method for them to become confident and involved learners who can communicate and participate effectively in today's society (Hesterman, 2013).

Characteristics and Examples

The most important aspect of play for the student is the meaningful context it provides by interacting with real-world topics and scenarios through pretend situations. When engaging in play-literacy learning, children may, for example, play with a pretend kitchen, write out shopping lists, and create pretend menus for a meal (Reynolds, Stagnitti, Kidd, 2011). A play-based learning classroom may contain several play areas or centers to address different areas of learning including a dramatic play area, block corner, reading tent, or writing table (Reynolds, Stagnitti, Kidd, 2011). Pretend play involves the child's ability to represent the world as symbolic and attributing imagined properties to objects (Reynolds, Stagnitti, Kidd, 2011). Pretend play also assists in building social abilities, interacting with peers, solving conflicts, playing roles and acting out social situations. The experience of the child is central to play-based pedagogy. It involves a focus on the activity itself rather than a desired learning outcome such as a certain skill or objective gained (Edwards, Cutter-Mackenzie, 2011). Another important aspect of play is that it is child-centered and focused on the child's interests. It is through this empowerment of choice that the child's experiences are central to all learning (Edwards, Cutter-Mackenzie, 2011). It is through play that students develop self-regulatory skills, executive functioning, and goal-directed behaviors. Children become

active agents that help plan their play and are in control of their own play (Thomas, Warren, deVries, 2011).

Goals and Student Outcomes

The ultimate goal of play-based learning is the development of the individual, including cognitive, language, literacy and social skills (Reynolds, Stagnitti, Kidd, 2011). The preschool years are a starting point for the child and build a strong foundation for school in which the child reaches critical milestones for academic success (Reynolds, Stagnitti, Kidd, 2011). It is crucial that during these early developmental years that children participate in cultural meaning-making and social relationships. Play provides the context in which children are able to accomplish this task, connecting their reality to their cultural settings (Edwards, 2013). Play is the primary mechanism by which children encounter and explore their immediate environment (Edwards, 2013). Today's child is viewed as capable of making meaningful contributions to their communities (Edwards, 2013). Childhood is no longer seen as preparation for later adult years but rather it is a period of life in its own right (Edwards, 2013; James, 2009). The goals of play-based learning are to develop students who have a strong sense of identity, are confident and involved learners with a strong sense of well-being, and effective communicators who contribute to their world (Hesterman, 2013).

Other Curriculum Approaches

While play-based learning remains a predominant approach to education within the early years, it is also important to understand and define other curricular approaches for the purpose of this study. Within these other approaches come significant philosophical approaches, cultural considerations, and theoretical perspectives

(Hesterman, 2013). The first is the traditionally structured approach to education, which is characterized by a high level of formality. The environment is structured with time set aside for subjects, including literacy, science, mathematics, physical education, and music (Reynolds, Stagnitti, Kidd, 2011). Traditional learning settings are teacher-directed and prescriptive with tables and chairs for each child and floor space in which to sit. Another approach places emphasis on practices that are developmentally appropriate, Developmentally Appropriate Practice (DAP) (Hesterman, 2013). Supporters of this method believe that individual differences in development can be overcome through a nurturing environment, which stimulates development by providing appropriate activities that correlate to the individual's age, social level, and cultural background (Hesterman, 2013). It is understood that children progress through universal stages to reach maturation. The multi-aged approach contains mixed aged groupings of children organized in a deliberate manner with the guidance of educational principles. It is believed that these children will benefit from mixed aged strategies and allow for accommodation of uneven development (Hesterman, 2013). The last approach called the Reggio Emilia approach assumes that children are strong, capable, and competent beings and the teacher's role is to assist them in improving these abilities (Reynolds, Stagnitti, Kidd, 2011). Much emphasis is placed on the child's environment and the connection of children, school, parents, and family. Individual educators will modify and adapt many of these philosophies to create a blend that is uniquely their own based on their own perception of the role of an early childhood educator (Hesterman, 2013).

Section Two: Technology Within a Play-Based Setting

Definition

Given the definition of play-based learning, the question now becomes, what place do digital technologies have within the concept of play in the preschool setting? Given that play is a social and cultural meaning-making practice, this is an important question to answer and one not free of controversy and debate. Kjallander and Moinian (2014) argue that play is not separated from the adult's world but children creatively manipulate language and power structures from the adult culture into their play. The 21st century learner lives in a world of technology and innovation, the world of the "digital age" and the "digital native" (Rodrigues, Bidarra, 2014). The digital citizen of today is confronted with a historical moment of transformation in the way in which people share knowledge in social, political and economic life as well as global connectedness (Rodrigues, Bidarra, 2014). The term "digital native" describes the first generation of children, which have grown up fluent in the language of computers, video games, and other technologies. In April of 2010, when the iPad was first released, the new tablet-era ushered a turning point for young children's meaning-making and play in formal and informal settings (Kjallander, Moinian, 2014). Computers, once inaccessible due to the complexity of using a mouse and a keyboard for small fingers, have now been replaced with the relatively new invention of touch technology, which allows small toddlers and preschoolers to extend their thoughts naturally to their hands by touching, tapping, and grasping (Rosin, 2013). As with every new medium invented, questions arise within a short time of its introduction about the safety or threat these inventions could pose to young people (Rosin, 2013). McLean (2013) argues that what it means to be literate in

today's society is not the same as 20 years ago, yet many of education's teachings on literacy practices remain the same. Information and communication technologies (ICTs) are rapidly expanding and changing the way modern society interacts with print-based material and the very way in which we communicate. ICTs are defined as any visual, actionable, or linguistic resource that is used to communicate (Kjallander, Moinian, 2014). Literacy conceptions will continue to evolve as technological advancements transform the way we communicate (McLean, 2013; Durrant, Green, 2000). Technologies are seen as conductors for today's written, oral, and audiovisual communications (McLean, 2013). Massaro (2012) argues that communication by visual representation has seen several revolutions since the creation of cave paintings and we are now undeniably in another revolution in how we interact and engage with print. He argues that print plays an increasing role in our daily lives but that role constantly evolves by the *formats* in which we communicate (e.g., newspaper to e-book).

It is also important for today's educators and parents to realize that students already come to school with a great deal of knowledge about technology. Technology use in contemporary society has influenced literacy practices in the young child's experiences even before attending formal educational settings (McLean, 2013). It is important for teachers to activate these funds of knowledge and connect informal home learning to the more formal learning of school. With these propositions come more concerns about the dangers and risks associated with these new technologies. The American Academy of Pediatrics (2013) gives strong cautions on the amount of screen time for ages two and under, recommending no screen time during the day for this age group and for over two years of age, screen time should be limited to two hours per day.

Screen time is defined as the viewing or use of anything with a screen, including computers, tablets, TV, video games, or DVD (Sweetser, Johnson, Ozdowska, Wyeth, 2012). These recommendations support the idea that children learn best through adult interaction as well as experiences in the real and physical world (Kentucky Governor's Office of Early Childhood, 2015).

The Debate

In our modern digital age, the very way we learn is changing within an ever-evolving media ecosystem (Rodrigues, Aberta, 2014). The 21st century learner has become a consumer, a sort of hunter and gatherer who pulls together new information across multiple platforms and sources in order to form a new synthesis. The engagement with the multimedia enterprise is a sophisticated process, which requires active engagement. Many educators argue that it is time to reimagine education within today's information age (Rodrigues, Aberta, 2014). On the opposite side, digital games and applications are often criticized and viewed as controversial for preschool use because they are thought to hamper creativity, limit physical activity, or take away from the child's meaningful interactions with the physical world as well as adult-interaction. While the American Academy of Pediatrics (2013) gives strong cautions regarding the amount of screen time, it is important to for educators and parents to consider that these recommendations are based on *total* screen time, not just screen time at home or at school. Research on the concept of play-based learning questions the use of technological devices and how they fit into the concept of play in preschool settings (Kjallander, Moinian, 2014). Questions arise as to the value of the devices and possible benefits they may offer. Those in favor of technology use argue that digital technologies such as

tablets are yet another platform, dimension, and arena for the preschooler to learn, engage and interact with the world (Kjallander, Moinian, 2014). Those who oppose argue that there is a huge influx of technology and social media in the lives of young children and those who teach early childhood education (ECE) students need to consider the place technology has in their teaching and learning environments (Dietze, Kashin, 2013). It is important to note that research never promotes technology as a substitute for play or hands-on experience, but rather a way to expand children's play options, ideas, and problem-solving strategies and learning (Dietze, Kashin, 2013). When technology is considered a tenet of play, it maintains the principles of constructivism, experiential learning theories, and the progressive education movement (Dietze, Kashin, 2013).

Theoretical Framework

The key to successful technology implementation within a play-based pedagogy is that it correlates and aligns within the theoretical frameworks from which the original pedagogy itself was founded. The theoretical perspectives of Vygotsky, Piaget, Rousseau, and Froebel view children as able to transform information and make combinations of new information encountered to construct and form new meanings within a social setting. Kjallander and Moinian (2014) argue that children do not merely use media in the digital interface, they *make* it. Digital technologies extend possibilities for preschoolers' participation and engagement in the meaning-making process while simultaneously allowing them to participate in various types of play. When interacting with different technology elements, the early childhood learner is engaging with different modes of learning simultaneously, engaging in meaning-making and making personal choices to suit the individual's best interests in relation to their previous experience

(Kjallander, Moinian, 2014). Dietze and Kashin (2013) argue that rather than focusing attention on protecting children from technology, we must reframe our thinking to view children as competent and capable learners who engage with technology as co-constructors of knowledge within a social setting, extending play beyond the play environment itself. When technology use for instruction aligns with the concepts and practices of engagement and navigation of individual learning, ideas are shared, questions raised, and problems solved, which thereby enhances the learning environment, making it meaningful and memorable for the learner (Dietze, Kashin, 2013). Overcoming resistance and reluctance is critical for the benefits of technology integration to be realized (Dietze, Kashin, 2013).

Student-Role

Current screen time recommendations are based on the total amount of screen-related activities in a child's day. However, some emerging evidence suggests that certain screen-related activities such as computer use or video game play should be classified differently than say, mindlessly watching TV. The research suggests that *active* screen time has very different physiological effects than passive screen time. Active screen time involves cognitively or physically engaging in screen-based activities such as completing homework on a computer or interacting with a game (Sweetser, Johnson, Ozdowska, Wyeth, 2012). Another study suggests that using technology, especially TV or videos, as a babysitter or parental convenience without quality adult interaction, is of no benefit to toddlers and preschoolers. Rather, the key to appropriate technology use is adult interaction, purposeful and intentional engagement with the child, keeping the relationship paramount (Lentz, Seo, Gruner, 2014). The student needs

quality adult interaction with the new technology, in order to model, provide instruction, and extend the learning. For many educators, the question of technology has always been, "How young is too young?" Some researchers argue there is a critical shift occurring in education that now poses the question, "How much is 'just right'?" (Lentz, Seo, Gruner, 2014). The key to wise and developmentally appropriate use of technology in the lives of young children is using new technologies to support and enhance the child's natural inclinations to learn and explore their exciting and ever-changing world. When used appropriately, technology can enhance and extend the learning environment. Our culture has come to view children as consumers of technology, passively viewing a DVD or being pacified in a store with a parent's cell phone. This is not the type of active engagement with technology that research promotes and supports. As a culture we must shift our thinking from viewing children as consumer of technology (passively receiving screen-based activities) to active users and participants, engaging in sophisticated interactivity with the technology available. It is important for educators and parents to realize that not all screen time is negative or without benefit. One study suggests that a hierarchy of screen time is more accurate, with some screen-based media being more or less active with a variety of positive and negative effects (Sweetser, Johnson, Ozdowska, Wyeth, 2012). Many children are much more capable with technology than adults would ever imagine. Giving children opportunities to show these skills and continue to develop them in our modern age is an important aspect of a developmentally appropriate classroom (Lentz, Seo, Gruner, 2014). Research shows that mere exposure to the technology is not enough. Learning that is mediated through technology must include opportunities for the learner to engage individually or collaboratively, content that is

relevant to the learner, contained in an interactive environment, with means of assessing learner performance (Katz-Buonincontro, Foster, 2014). Effective technology in the classroom does not invite consumption on the part of the user bur rather invites opportunities for inquiry, communication, construction, and expression (Katz-Buonincontro, Foster, 2014).

Teacher-Role

The most important role that the teacher plays is constantly being mindful of the developmental appropriateness of the technology used in the classroom. The teacher's role in effective learning through technology involves analyzing and assessing the effectiveness of the technology and possessing knowledge of the technology itself and how it is used to facilitate learning and motivation (Katz-Buonincontro, Foster, 2014). The teacher must also evaluate if the technology leads to active reflection by the student or passive consumption, which leads to minimal learning. As the debate changes from whether or not to use technology to *how* to use technology, it is important that educators ensure children still interact with the natural world they live in. Technology should never take the place of interacting with plants, animals, and the outdoor world and should never replace physical movement and exercise. It is vitally important for educators to remember that children do not possess the necessary skills to navigate the world of technology on their own. Appropriate and wise use of technology must be modeled, supervised, directed, and guided through skilled interactions between teacher and student (Lentz, Seo, Gruner, 2014). The same concepts found in philosophies of play, such as social connectedness, opportunities for real-life extensions, and active meaning-making apply to quality technology use. Children need open-ended activities built around

opportunities for discovery, sensory experiences, and multi-modal approaches with multiple pathways. It is through the use of technology that these activities can be enhanced and extended (Lentz, Seo, Gruner, 2014). For the educator, an active role is vitally important, one that ensures the vital needs of childhood are not interrupted by the use of technology in the classroom (Lentz, Seo, Gruner, 2014).

Characteristics and Examples

Technology is a tool that when used effectively by educators can maximize playfulness and learning concurrently (Howard, Miles, Rees-Davies, 2012). It is vitally important that the technology used in the classroom supports and extends the pedagogies of play, facilitating children's autonomy, choice, and control of learning goals and outcomes (Howard, Miles, Rees-Davies, 2012). Children's experiences with technologies in the home environment must match and extend the formal learning environment of the school. New educational initiatives for early childhood learning encourage the use of ICTs as a central piece of educational learning experience (Howard, Miles, Rees-Davies, 2012). Technology and play should not be seen as separate but rather effective tools that can be used simultaneously to enhance the experience of the student.

Tools such as interactive whiteboards provide rich experiences that support teaching and learning through interactivity, collaborative group work, accessibility, and recordability (Morgan, 2010). When active technology use is viewed as a tool for learning, it can contribute to student reflection, leading to the development of understanding concepts and processes (Morgan, 2010). When the use of ICTs moves beyond desktop computer use to incorporating things like touch technology to enhance

dramatic play, that is when play and ICTs function harmoniously (Howard, Miles, Rees-Davies, 2012). Effective active technology use that moves past consumption promotes play, creation, development, collaboration, discussion, reflection, and innovation. Technology has been shown to support emergent literacy in young learners through tools such as e-books or podcasts which produce learning gains in phonological awareness, language development, vocabulary and concepts about print (Lentz, Seo, Gruner, 2014; Shamir, et al., 2012). Other tools such as the software, *PictoPal,* provide students with opportunities to produce authentic writings through a combination of clip art and print, supporting children's writing in a social, play-based environment (Lentz, Seo, Gruner, 2014). Touch technology is especially versatile in the classroom, providing opportunities for whole group instruction, supervised small groups, or independent work. When technology is used simply and with clear instruction, it promotes connection to daily life. For example, one fun way to integrate technology is to video a child's activity such as outdoor play or a physical challenge in gym class. The content can later be shared and viewed while children celebrate their physical movement and skill development. A digital portfolio of movement activities to share with parents is a tool for tracking progress and growth (Lentz, Seo, Gruner, 2014). In order to extend and enhance the interactions with the natural world, children may use digital photography on a nature walk to take pictures of plants and animals encountered. Blending traditional activities such as a nature walk with the use of technology can extend the learning experience for the child. Technologies such as *VoiceThread*, allow communication between individuals and groups at a distance, providing opportunities for discussion between preschoolers and other groups, in which multimodal approaches such as audio comments or digital

snapshots can be incorporated (Lentz, Seo, Gruner, 2014). The key to effective technology integration is to provide vital sensory experiences, which can be combined with mediums of technology to create a rich multimodal experience, combining and blending the traditional with the contemporary.

Section Three: Application and Implementation

Guidance Concerning Technology

Technology integration in the classroom has been associated with improvements in cognitive development, higher levels of attention and motivation, and increased language and verbal fluency (Sweetser, Johnson, Ozdowska, Wyeth, 2012). However, it is vitally important that stakeholders remain vigilant in their supervision of preschoolers' technology use. All screen time is not equivalent; some types are more valuable based on their level of cognitive involvement. It is also important for parents and educators to remember that recommendations are based on the *total* amount of screen-related activities. Screen time should never replace adult interaction or the child's natural curiosity to interact with the real and physical world. For preschoolers, longer periods of screen time means less opportunity for active, outdoor, and creative play and an increased tendency toward more sedentary behaviors increasing associated negative health risks, such as irregular sleep patterns, attention problems or decreased academic performance (Sweetser, Johnson, Ozdowska, Wyeth, 2012, Heejung An, Morgenlander, Seplocha, 2014). It is also important for parents and educators to remember that most children between the ages of two and five are exceeding the recommendations (Sweetser, Johnson, Ozdowska, Wyeth, 2012). Children must have adult guidance when selecting and

choosing appropriate and active screen-related activities. Limits and rules are important and must be considered for effective implementation. Adults are the mediators between the child and technology (Morgan, 2010). Perhaps the most appropriate guidance is given by the National Association for the Education of Young Children and the Fred Rogers Center's stance on technology which states, "technology and interactive media are tools that can promote effective learning and development when they are used intentionally by early childhood educators, within the framework of developmentally appropriate practice, to support learning goals established for individual children" (Heejung An, Morgenlander, Seplocha, 2014; NAEYC and the Fred Roger's Center, 2012). Preschoolers today grow up as natives in a digital world where technology is an established part of their future. It is vitally important that technology be used as a tool to explore and build knowledge through quality adult interaction and guidance. Technology is not the only way a child learns but when used appropriately, can scaffold the child's learning allowing them to make connections and have relevant learning opportunities.

Immanuel Baptist Church Early Childhood Education Center- Philosophy of Education, Mission, Goals

Immanuel Baptist Church Early Childhood Education Center seeks to provide children the best education through an excellent Christ-centered learning environment. IBC-ECE is "committed to meeting the mental, physical, emotional, social and spiritual needs of all its children." The preschool at IBC-ECE is devoted to providing a child-centered education with developmentally appropriate activities that promote social and emotional growth. The program is accredited through the Southern Association of Colleges and Schools and the Advanced Organization. The goal of the early childhood

program is for children to "build a positive self-image, explore their natural sense of wonder, discover their creative spirit, learn problem-solving skills, develop self-control and consideration of others, and know that learning is fun!" The mission, goals and vision of IBC-ECE is accomplished and carried out through degreed teachers, small class sizes, and a caring faculty, providing a strong biblical and educational foundation for each child (www.ibcece.org).

Kentucky State Technology Standards

An important aspect of preschool education is preparing the student for kindergarten and later schooling. School readiness allows the child to enter kindergarten confidently, feeling successful, independent, and competent. A key aspect of this is producing curiosity and exploration skills in regards to computer and technology use (Hatzigianni, Margetts, 2014). In the State of Kentucky, core content standards for kindergarten include: 1) Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. 2) Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. With guidance and support from adults, students are expected to explore a variety of digital tools and produce and publish writing through collaboration with peers. Students will use basic computer skills such as turning on the computer, logging on, using common software, and basic word processing tools (Kentucky Common Core Standards, p. 36, 38). The State of Kentucky also recognizes that "technology use in the 21st century has become a vital component of all aspects of life. For students in Kentucky to be contributing citizens, they must receive an education that incorporates technology literacy at all levels. The purpose of integrating technology is to help students make

useful connections between what they learn in each content area and the real world." (Kentucky Core Academic Standards, p. 107-110).

The Future of Schools and Technology

Schools must consider their purpose in society as well as their distinct philosophy of education. In today's information age where digital technology is rapidly exploding, the gap between what is available in school and out of school is widening. Schools are in danger of becoming irrelevant if they don't connect with the experiences and materials that are available to student's in their daily lives (Yelland, 2011). Many state's accreditation as well as standards for education are moving to include student demonstration of technology knowledge and application. Educators must equip students for today's workforce and societal demands. Our communicative practices as a culture are changing and schools must progress to include today's "new" multimodal literacy experiences (McLean, 2013). Schools must include the child's technological funds of knowledge and bridge the gap between the technological knowledge and skills of home to the school. Children must experience continuity in the learning across the cultural contexts of home, school, and community (McLean, 2013). Perhaps the most appropriate way to view technology use in preschool education is a balanced perspective, which incorporates the old basics of pen and paper with the new basics of touch technology, allowing preschoolers to be connected to the real world, regardless of the source (Rosin, 2013).

Method

Participants

The participants for this research project consisted of teachers, assistant teachers, administration, and staff of Immanuel Baptist Church's Early Childhood Education Center (IBC-ECE). IBC-ECE is staffed with 37 individuals with varying levels of degrees and experience, all contributing toward the mission and goals of the school. All faculty and staff were given the opportunity to participate in the research study and were made aware that participation in the study was optional and anonymous. Paper-based, open-ended surveys were personally distributed by me to all faculty and staff on April 6, 2015 and were collected on April 10, 2015. Prior to survey distribution, I gained permission from Cedarville University's Institutional Review Board on March 26, 2015 to collect data from the designated population. Written permission from the director of the preschool was given on March 13, 2015 to conduct research with the faculty and staff of the school (See Appendices A for written permission letter). All faculty and staff were provided a letter explaining the purpose of the research study as well as their option to participate (See Appendices B for survey cover letter). The survey consisted of demographic questions along with open-ended questions that asked respondents to evaluate their own personal opinions and beliefs about technology in the classroom and educational philosophies (See Appendices C for survey). Of the sample of faculty and staff, 29 out of 37 chose to participate freely in the research study by submitting the completed survey. Surveys were submitted in unmarked, sealed envelopes to a designated location at the front office of the school where they were then collected.

Instrumentation

A survey instrument was used as the primary data collection for the study and was administered to teachers at IBC-ECE during the week of April 6, 2015. The survey was provided in paper-based format, having the same questions given to all participants who freely selected to participate in the research process (See Appendices C for survey).

Questionnaire Development

The questionnaire was developed by the following means. The background for the questionnaire development began during conversations with the preschool's director about her goals for the outcome of the study. The director made it clear that she wanted to develop a research-based school-wide stance on technology integration at the preschool level. She expressed to me that there is much controversy and confusion concerning the topic, with opinions mainly guiding parent and teacher decisions about technology integration. The director wanted to know specifically what the research said about this topic and whether or not technology use is developmentally appropriate for ages three to five years old. She also expressed concern that students are typically only in school for three hours per day and sometimes only two to three days per week. Due to this small amount of time, she believes that personal interactions should be with other people and the physical, real world; not a computer screen. Many students have ample access to screen time at home and total amount of screen time was also a concern for the director and teachers alike. She shared information about the national accreditation standards and how technology indicators were beginning to be a part of the accreditation process for early learning schools, like IBC-ECE. If the school was to be evaluated on basis of their technology stance and integration, the director wanted to have a very clear

and accurate understanding of what research deemed as developmentally and educationally appropriate for this age level.

Specific questions to be included in the questionnaire began to emerge as I consulted the wide breadth of research available on the topics of play-based learning, teacher and student roles, and appropriateness of technology integration. Themes of culture being highly connected to learning and play in the classroom were evident. The debate concerning technology use was very straightforward and it was clear that information concerning teachers' comfort level and experience with technology would need to be evaluated. I developed the questionnaire and made three total revisions, receiving feedback from peer reviewers, school administration, and my research advisor (See Appendices C for survey). The participants were not part of a vulnerable population and there were minimal risks associated with this study. The only risk would be the time commitment required to fill out the survey.

Personal Bias

The bias that needs to be addressed would be that I have a vested interest in the educational mission and goals of the school being that my son attends preschool at this early learning center. Since I am a parent, the effects of this study have a personal influence. However, the findings of this research study are very clear and straightforward as well as the data collected. While the sample being studied is a specific school, I believe this study has implications for all preschools and those vested in the education process. This study specifically addresses the purpose of learning at this age and the effects that technology integration have for early learning schools.

As a parent of a preschooler, we do use technology at home with limits and rules concerning its amount and quality. As with any topic being studied, the researcher has personal opinions and possible bias. However, the goal must always be to report the data and conclude what the research says about the topic.

The questionnaire consisted of a cover letter and three pages of open-ended questions. Qualitative data from the open-ended survey items were analyzed to provide an accurate summary of the overall beliefs and concerns regarding the teachers' technology use views. I was the only person who entered the data, saw the answers that the teachers provided, and I created the graphs and summaries used in this report. I also checked the data entry numerous times for correct recording of information.

Procedure

The process began with creating the research project proposal. After completing the research proposal process and receiving permission from the Institutional Review Board of Cedarville University, approval was gained from the director of IBC-ECE and methods and goals for the study were planned. A timeline was established as well as clear goals and desired outcomes. I provided the director with the questionnaire and cover letter and she gave me permission to distribute the surveys on April 6, 2015. I personally passed out each survey to the faculty and staff and quickly introduced myself, explaining briefly the purpose of the study and their optional participation. Faculty and staff then submitted completed surveys to a designated location in the school's front office. All surveys were collected on April 10, 2015. Survey participants did receive a small gift, a coffee mug full of chocolate, as an expression of thanks and recognition of their time and efforts. The questionnaires were gathered and brought home to process.

The questionnaires were sorted and all data recorded in an Excel document. Open-ended questions were coded and highlighted in an effort to summarize the population's viewpoints and philosophies. Answers were coded, as favors/neutral/does not favor, accurate/inaccurate, correct/incorrect, etc. and were evaluated on key terms and specific indicators of understanding.

There were specific questions that contained a wealth of valuable information including, "What are your feelings regarding technology integration at the preschool level?" "What is the purpose of education?" and "What tools do you need to feel equipped to implement technology in your classroom?"

Findings/Results

The demographic questions included information about the faculty/staff person's education, years of experience, job title, role, and number of professional development hours completed in the past year. The education statistics of the population was high school degree (4), Associate's degree (5), Bachelor's degree (13), Master's degree (5), or Other (2). The years of experience of the population consisted of less than 1 year (3), 1-5 years (4), 6-10 years (11), 11-15 years (4), and more than 15 years (7). The job titles of the population consisted of 13 teachers, 8 assistant teachers, 1 staff member, 1 administrator, and 6 other. The job roles of the faculty and staff consisted of (9) 3-year old teachers, (4) 4-year old teachers, (2) 5-year old teachers, (4) staff/administration, and (10) other. Of the participants, 9 respondents had completed 1-10 professional development hours during the year, 12 respondents completed 11-20 hours, 1 respondent completed 21-10 hours, and 7 respondents reported that their job did not require any professional development hours.

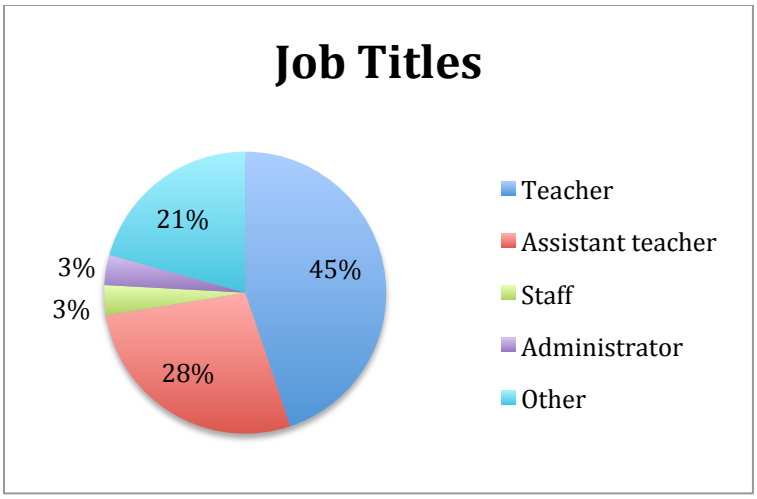

Figure 1. Job title graph displaying the variety and number of individuals who were participants in the study.

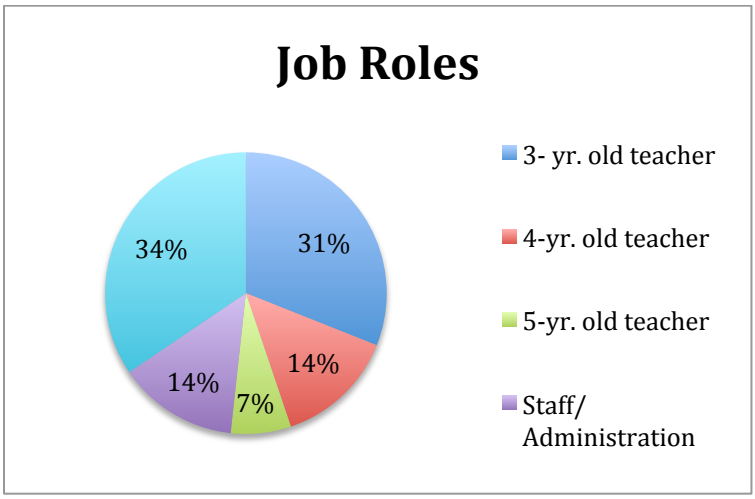

Figure 2. Job role graph displaying the variety of job titles of participants in the study.

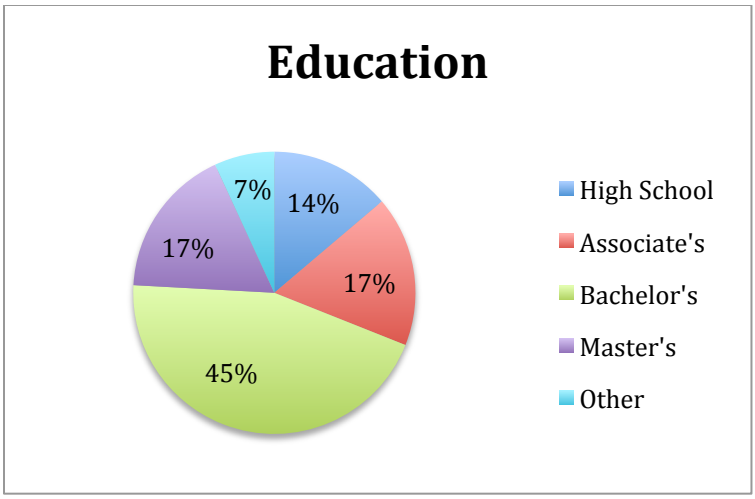

Figure 3. Education graph displaying the variety of education levels of participants in the study.

By researching pertinent demographic information, I gained a better total picture and accurate understanding of the population. Many factors contribute to personal philosophies of education, including education and background experience. Number of professional development hours was an important factor to research in order to gain an understanding of the population's understanding of current research and awareness of up-to-date educational practices. Knowledge of the population's job title and roles at IBC-ECE was also crucial for the study because certain student age groups would not be recommended for technology exposure (e.g. those younger than two years old). These demographic statistics were then used to analyze and evaluate the data collected on teachers' philosophies of education, experience with technology, and overall feelings regarding the use of technology in the classroom.

One of the most important questions to answer in this study was, "What is the purpose of education?" By identifying the respondents' views on the purpose of

education in society, it gave insight into their personal philosophy of education. Philosophy of education is important because philosophy informs and determines educational practices in the classroom. Of the 29 respondents, three aligned themselves with a traditional philosophy of education (core subjects, structured classes, seats with individual desks), 12 aligned themselves with a play-based philosophy of education, eight labeled their position as being developmentally appropriate, and six identified themselves as play-based and developmentally appropriate.

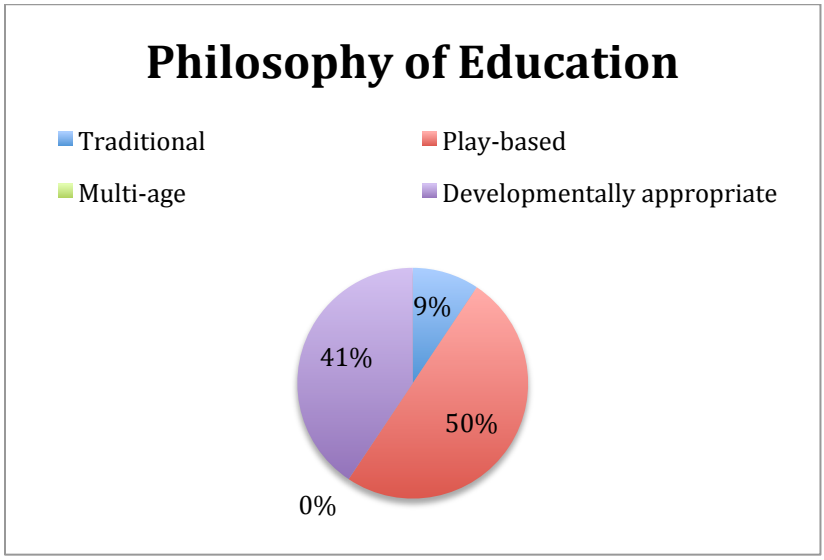

Figure 4. Philosophy of education graph displaying the philosophical alignment of participants in the study.

When asked to reflect on the purpose of education, teachers overwhelmingly shared that education is a time of equipping and preparation for life. It is through school that students learn basic knowledge and skill sets. Many respondents shared that preschool is a time when childhood can be fostered in a nurturing, caring, uplifting, and

loving environment. The teachers of IBC-ECE believe that preschool is a unique time of preparation for later schooling in which a solid base foundation is provided. Preschool is meant to provide social stability and booster the child's self-esteem. It is also important to note that the consensus of the respondents agreed that the goal of education is to produce competent, productive, independent, and capable adults (in the workplace and at home) that contribute toward the betterment of society. A smaller portion of respondents identified that schooling contributes toward success and more career opportunities. One respondent, in agreement with many other responses, said her purpose of education was to, "ignite the spark that develops a lifelong love of learning."

When asked to identify feelings and opinions regarding technology integration at the preschool level, respondents clearly and freely explained their viewpoints. 13 respondents favor technology integration at the preschool level; 10 respondents do not favor technology integration; and six respondents remained neutral and did not think its implementation was neither good nor bad. Regarding specific viewpoints, those who favor technology shared that technology was used in Kindergarten for testing, so preschoolers should at least be acquainted with technology, coinciding with that preparation purpose of schooling. Of those who favor its use, the majority said that there is a "time and place for technology and it should not be used all the time." The technology must be used appropriately, with time limits, for specific purposes and not as a "babysitter." Teachers who favor its use say technology helps build sensory skills and when used in balance with other activities, can greatly enhance the learning experience. Because technology is such a "large part of everyday life, it should be introduced. It is necessary in the age we live in," said one respondent.

Those who oppose technology integration believe that technology impacts young people in a "negative way" and there is already too much technology use in society today. Many students already have enough screen time in the home and computer use at school is "not necessary and not helpful." Many respondents shared the need for the student to have real-life experiences and human interactions; it is believed by educators that too much computer-use takes away from these valuable interactions. Those who do not favor technology use believe that it hinders creativity, and they have "plenty of exposure outside of school." As a whole, it is believed our society places too much emphasis on technology. Those who had a neutral point of view stated that if it is used, it must have limitations and have an educational purpose. This group seemed at odds and had mixed feelings. While seeing the benefits of technology use they also recognize that its use could potentially have negative effects as well. They identified with both groups' reasoning and feel that three hours in the school day is not enough time to incorporate technology into instruction.

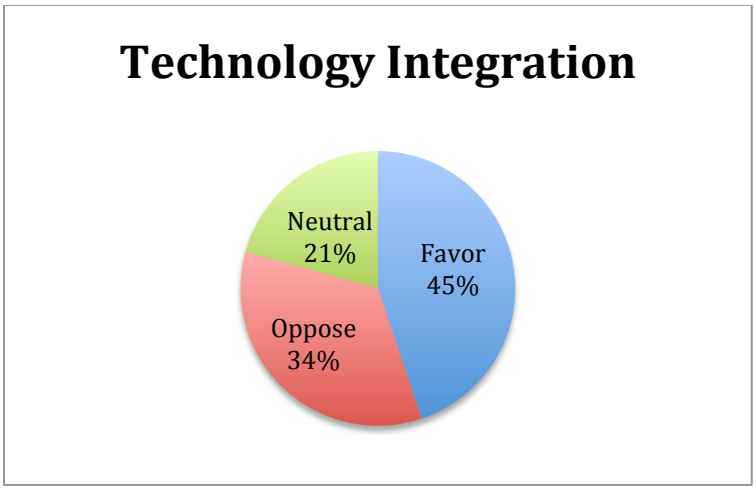

Figure 5. Technology integration graph displaying teacher opinions regarding technology use at the preschool level.

Since IBC-ECE is a self-identified play-based learning institution, it was important to gain an understanding of how teachers define play-based learning. All 29 respondents demonstrated a clear, research-based definition of play-based learning with accurate descriptors and characteristics of play-based learning environments. Teachers identified this approach as "learning in the context of a play activity." It is through symbolic play that children use toys and other materials to relate and translate play situations into real-life knowledge and meaning-making. An overwhelmingly important aspect of play is that it is student-driven with empowerment and choice given to the child. "Kids learn without realizing they are actually learning," said one respondent. Children are given room to explore and experiment in a natural way that sparks their curiosity. Many respondents identified specific games and most gave examples of "centers" being foundational to play-based learning. Students are given specific learning goals and the teachers provide the materials and means by which they explore, create, imagine, and

experience the real physical world through collaboration, multisensory experiences, and hands-on activities.

With the definition of play-based learning come questions as to the specific role that students and teachers have in the play-based learning environment. Respondents stated that students at IBC-ECE participate in many activities, whether independent or collaboratively in groups. The teacher establishes the learning goals and creates opportunities that are driven by the curriculum. The child specifically learns through their experience and interactions with others in the learning environment. The student's job is to be engaged and "reach his or her own conclusions." One five-year old teacher said, "The student is an active participant, investigator, and learner. They direct their own play, they make decisions about materials, and have their own ideas about what they want to do." The student should have fun, socialize, try new things, demonstrate self-motivation, take risks, and ask questions. "Kids should be allowed to be kids doing what they love most . . . play!" said one respondent.

If the teacher's role could be described in one word, that word would be *intentional*. IBC-ECE teachers clearly understand that the role of the teacher is to facilitate and guide students toward the goals of instruction, allowing play to "takes its own course." Respondents stated that is through careful observation of student play that teachers can be intentional with how the "educational goals are presented and met." Teachers set the stage for learning by providing the necessary tools and toys while also encouraging imagination in their students. Respondents shared that they plan learning activities, help solve problems, observe student participation, answer questions, and provide encouragement. One teacher said, "I am to be part of the play, not the creator."

The teacher as facilitator is available to lend support as needed and extend the play through meaningful and useful suggestions, helping every student reach their potential.

Now that the philosophy and purpose of education has been outlined as well as the definition of play-based learning, we now move forward to the heart of the research study. Participants were asked to share their reasoning regarding the role of technology in instruction. The answers seemed to fall in line with the previous question of whether or not the respondent favored or did not favor technology integration. Those who favored technology integration said that technology was another method of enhancing the curriculum and engaging students. It is through technology that students can be exposed to content that they otherwise would not be exposed to, such as other places in the world or videos of weather events. Technology should enhance, extend, stimulate interest, and accommodate for learning differences. Most who agreed that technology should play a role in instruction, stated that integration is a challenge, but "the pros outweigh the cons." Technology is just "another tool or material used to teach a specific skill or concept," said one teacher-of-five-years olds.

Other teachers also gave strong cautions regarding the role technology should play in the classroom. Many stated that time spent on electronic devices should be considered, as well as the age appropriateness of the particular activity. Those who could relate to both sides of the debate said that technology should play a small role, through only touch technology or reading from a "Kindle at circle time," said one respondent. Teachers believe that technology should be used one-on-one with the assistance of the teacher and never in a "center." Those totally against technology integration said that, "Technology should only be used by the teacher, as a planning tool for instruction."

Those opposed also said, "technology should never take the place of teacher instruction." One teacher did acknowledge that there is a difference between active and passive screen time for children saying, "passive should have a very small role" and that active use could be used effectively in a play-based setting. Most of the respondents who were against technology use relayed that there will be "plenty of time for technology use later in school," and that it is not necessary at these young ages.

There were definitely reoccurring tools and resources listed as necessary for faculty and staff to feel equipped to implement technology effectively in the classroom. Respondents said they needed an Internet or Wi-Fi connection, computer, iPad, e-reader, CD player, headphones, electronic keyboards for music class, Smart board, and/or a digital camera. One teacher had an idea of creating a "listening center" for students to watch YouTube videos and listen to songs that reinforced the learning content. Those opposed to technology gave their approval of technology, such as movies, being used on "special occasions" or on a "rainy day." One teacher shared how she uses her phone to show/learn letter songs and mentioned, "It would be nice to have access to a tablet for its larger screen." Many also expressed that they would need the necessary training and professional development in order to adequately and effectively integrate technology. Many feel that technology should be implemented, but they just do not know how to use technology in "appropriate ways." It was also noted by one teacher that all of this would "require the necessary budget, to update and replace."

Respondents were then asked to identify specific examples of active technology use. The goal here was to see if teachers could distinguish between active and passive technology use and to evaluate their level of comfort in making this distinction. A total

of nine respondents were unable to identify any examples and left the answer space blank. A total of 10 respondents listed things like using a computer, watching a DVD, or playing an educational game. Again, while these are examples of technology use, they do not necessarily demonstrate the respondent's knowledge of *active* technology use. Those who were able to list examples of active and intentional technology use had some good ideas such as, enhancing a unit on fire safety by watching a movie clip and then actually seeing a fire truck and meeting a firefighter. Another teacher had the idea of using an iPad to "show habitats or animals that the students would not have access to. It would make it more real to them." Many active ideas included the use of smart boards as a way to actively include students in the learning process. A digital camera was also listed as a way to "document things throughout the year" and capture the work of the students throughout the year and then reflect at year's end on progress. Another interactive tool was using communication tools such as Skype or FaceTime to interact with a "community member about relative classroom topics." Music class could greatly be enhanced through the use of online music lessons, electronic keyboards, and videoing the students' performances, "planting the seed of wanting to learn music as they grow," said one respondent.

Regarding parent expectations for technology use, 19 total respondents said that parents of students do not expect technology in their classrooms, do not favor its use, or have had no conversations regarding parent expectations. This group indicated that technology is not a priority for parents or that it had never been discussed. A total of seven respondents said that parents were somewhere in the middle, understanding the need for technology but also realizing that students are young and have plenty of time

"later in school." Some believe in a blend of the more traditional methods of instruction while still implementing technology "on some level." A much smaller group of three respondents said that yes, parents do expect technology integration in the classroom and wanted the "latest, up-to-date technology," assuming that the methods of use are developmentally appropriate. It is important for parents that the technology does not interfere with learning "critically important skills or concepts at the preschool age." It was also relayed that our society's expectations are "much more than what they once were" regarding technology and education.

In order to tie all of the concepts together, the final open-ended question asked respondents if play-based learning and technology use *complimented* or *opposed* each other? The purpose of this question is to identify if both of these activities are possible in the same learning environment and institution. A total of 15 respondents said that technology and play-based learning "compliment" each other, explaining that students "love technology" and are more engaged. One teacher said that technology use adds "a wider array of materials; it is a new medium that would only enhance their interests!" A five-year old teacher shared that "Technology can contribute to meaningful learning experiences, creating a good balance between traditional and technological teaching tools." Technology can enhance the curriculum and provide differentiation and reinforcement when used appropriately. A total of five respondents said they thought it complimented and opposed depending upon its use. One teacher expertly stated, "Teacher involvement during play causes children to perceive the activity as work. This may hinder play-based learning through technology because students often require assistance." It is also perceived that technology can sometimes overtake and become the

"director in a group setting" and that individual use is more beneficial. Nine respondents clearly stated that technology use and a play-based setting were in total opposition of one another. One teacher said, "Computer programs seem to expect only one right answer. I like the creativity of play-based learning." Most claimed that screen time took away from person-to-person interaction by creating isolation. The need for physical and mental activity at this age is perceived to be greater than the need for interaction with technology among this group of respondents.

Discussion

The topic of technology use at the preschool level proves to be one of controversy and debate. Educational stakeholders have strong opinions regarding technology use, either for or against it. These opinions tend to be guided by personal experience or feelings. If the truth were told, technology is so rapidly expanding and changing that it is very hard to keep up with new developments and innovations. Education can sometimes fail to keep up with these changes due to budgetary constraints and inadequate professional training. Touch technology is also a relatively new phenomenon, with the iPad being released in April of 2010. More research needs to be done on the effects of technology at this young age, and the research needs to span a wider amount of time. As with every new technology, questions regarding its pros and cons will certainly arise. For 21st century learners and educators, technology is something that is here to stay; society will only progress and move forward. Therefore, stakeholders must determine where they stand and why when it comes to technology use and it's implementation.

Based on the overall wealth of information regarding technology use at the preschool level, the key for effective implementation is active and intentional technology

use for the purpose of enhancing and extending student learning. Because many individuals are immersed in a world of technology, we typically automatically think of technology as a way of consuming. When children watch a television program, they are passively consuming that show or DVD. Typically, shows require limited interaction and allow the child to "zone out" and escape for several minutes at a time. We have all seen examples of this, a parent handing over the smartphone to pacify the screaming child at the grocery store. Educators may also automatically think of technology use in the classroom as a "movie day" for a special occasion, or using an educational game or app in the classroom. These examples involve passive consumption of the technology. There is no valid research to support the use of passive technology consumption in the classroom. This type of technology use has little to no benefit to the child, especially at the preschool level.

Because people have strong opinions regarding technology use, as seen in the data collected in this study, it is hard to educate and further convince individuals that there is indeed another form of technology use that goes beyond passive consumption. When technology is used appropriately, intentionally, and effectively, it can actually enhance the curriculum and engage students on a deeper level. Active and intentional technology use also allows for differentiated instruction, creating a multimodal sensory experience for the child. It is important to note that preschoolers cannot yet read or write, which in turn inhibits some of their communicative abilities at this age. Technology tools can actually help bridge that gap and allow students to communicate on a higher level than they normally could, engaging visual and audio aspects into the learning process.

Preschoolers do have something to say and technology gives them the voice to do just that.

This study focused on the definition of a play-based learning environment, focusing on teacher and student roles as well as the distinct philosophy behind this way of teaching and learning. The question was, "Is technology integration even possible within a play-based learning environment?" I believe that it is indeed possible when used appropriately and effectively, with balance and careful teacher planning. As a parent of a preschooler, I want my child to be introduced to technology and learn how to use it effectively for their benefit in today's modern world. It is true that students have plenty of interaction with technology in today's culture; however, the type of interaction they do have is that of passive consumption, often mindlessly staring at a screen. If schools and educators truly want to be up-to-date and relevant, they must think about how to use technology as yet another tool for effective instruction, enhancing and extending the learning for each child. While philosophies and educational practices will differ from one school to another or from one individual to another, the goal is always to guide students to learning and as one teacher said in this study, "Ignite the spark for a lifelong love of learning." Technology is just another way that we can do this.

A Biblical Worldview

As followers of God, we are called to cultivate and keep His creation. As image-bearers, we are uniquely designed to reflect the image of God and add value to His good creation. Because learning is strongly tied to the culture we live in, it is important that we as Christian educators think about what we are passing on and how we are teaching our younger generations. We must think about our role in the world and how we can best

teach, equip, and allow students to discover their God-given abilities and talents and to use them effectively for His kingdom. Deuteronomy 6:7 says, "Teach the law and ways of God diligently to your children, and talk of them when you sit in your house, and when you walk by the way, and when you lie down, and when you rise (ESV)." As Christian educators, we are called to educate and equip in the best way we know how, with diligence and perseverance, making this the very goal of our lives.

The Christian educator's ultimate goal is for students to learn and discover through inquiry and apply that learning toward active engagement with the world and culture. Students should ultimately become members of society who add value to culture and who participate in the process of restoration until the ultimate Restorer returns. The classroom activities lead students toward developing mentalities that seek to actively engage and participate with culture. Students will learn how to use their own talents, gifts, and resources to exercise the principles of stewardship and reconciliation. Educators with a Kingdom approach will guide students toward gaining knowledge and acting upon that knowledge. Knowledge must be relevant, contextualized, and have purpose. The goal is to equip and train students to live as Christians in the world, to become functional and contributing members of the community, and actively participate in the kingdom work of Christ, which requires practice, dedication, and commitment.

When it comes to technology use in today's classroom, an approach of balance along with careful planning is crucial. Ephesians 5:15 says, "Look carefully then how you walk, not as unwise but as wise (ESV)." Practicing wisdom in our teaching requires the guidance of the Holy Spirit. I John 4:1 says, "Beloved, do not believe every spirit, but test the spirits to see whether they are from God (ESV)." James 1:5 says, "If any of

you lacks wisdom, let him ask God, who gives generously to all without reproach, and it will be given him (ESV)." May we continue to grow in knowledge, depth of insight, and understanding, that God may be glorified in what we teach and the way in which we teach it.

Application

The ultimate goal of this research study was to provide IBC-ECE with an accurate description and definition of the play-based learning environment, an in-depth review of research on technology integration at the preschool level, and suggestions for effective implementation, including specific examples for use in the classroom. Because technology is an important factor when it comes to instruction, it is crucial that the school identify their philosophy of education and how it aligns or does not align with technology use.

Based on the research in this study, I propose that technology implementation is possible within a play-based learning environment when used in a balanced and developmentally appropriate manner. Based on the research collected in this study, I have created a resource for administrative, teacher, and parent use regarding technology that outlines the definition of play-based learning, what the research says regarding technology use, and examples on how to use technology effectively in the classroom (see Appendices D for the resource for IBC-ECE). This resource is meant to be very practical and provide a useful guide for all stakeholders. While the handout was intended for use by IBC-ECE, it can be applied and used within any play-based preschool setting.

Implications of the Study

Some examples of different research questions that could be conducted in future studies could include questions such as, "What are parent opinions and expectations regarding technology implementation at the preschool level?" "What is the purpose of preschool education?" "Are teachers equipped to effectively implement technology at the preschool level?" "Can education keep up with the ever-changing and advancing world of technology?" "What is the future of education in a modern, informational age?" "Do preschool students benefit from technology use in the classroom, and if so, in what ways?" "Why do stakeholders in education have such strong opinions when it comes to technology use in schools?" "What effect does a school's budget have on technology integration and use?" "Are new teachers more inclined to implement technologies in the classroom than teachers with more experience?" Future studies will need to confirm the information presented to review the long-term effects of technology use at the preschool level.

Conclusion

This paper has provided a literature review of the information available regarding play-based learning settings and technology use at the preschool level. A Biblical perspective concerning technology use within the classroom has been revealed. The research study has expressed the procedure, findings, discussion, and further implications regarding technology implementation within a play-based learning institution. Examples of effective technology use and classroom activities have also been given. The survey questions, participants' demographics, and the instruments have been described. Analysis of how this study relates to Immanuel Baptist Church's Early Childhood

Education Center have been described along with a clear explanation of the school's philosophy, mission, goals and how the technology stance aligns with the purpose of education. Future studies will need to be conducted to discover the effectiveness of technology use on student performance, according to the guidelines and suggestions from this study.

References

AdvancED. (2014). *AdvancED external review team workbook for early learning schools*. (AdvancED Standards for Quality Early Learning Schools). Immanuel Baptist Church Early Childhood Education Center: AdvancED.

American Academy of Pediatrics. (October, 2013). Children, adolescents, and the media. Retrieved from http://pediatrics.aappublications.org/content/132/5/958.full.pdf+html

An, H., Morgenlander, M., & Seplocha, H. (2014). Children's gadgets: Smartphones and tablets. *Exchange (19460406),* (219), 65-68.

Barker, J. E., Semenov, A. D., Michaelson, L., Provan, L. S., Snyder, H. R., & Munakata, Y. (2014). Less-structured time in children's daily lives predicts self-directed executive functioning. *Frontiers in Psychology, 5*, 1-35. doi:10.3389/fpsyg.2014.00593

Barnett, L. A., & Weber, J. J. (2008). *Perceived benefits to children from participating in different types of recreational activities* Sagamore Publishing.

Brindova, D., Pavelka, J., Ševcikova, A., Žežula, I., van Dijk, J. P., Reijneveld, S. A., & Geckova, A. M. (2014). How parents can affect excessive spending of time on screen-based activities. *BMC Public Health, 14*(1), 351-365. doi:10.1186/1471-2458-14-1261

Davis, B. C., & Shade, D. D. (1999). Integrating technology into the early childhood classroom: The case of literacy learning. *Information Technology in Childhood Education., 1999*, 221-254.

Dietze, B., & Kashin, D. (2013). Shifting views: Exploring the potential for technology integration in early childhood education programs. *Canadian Journal of Learning & Technology, 39*(4), 1-12.

Duch, H., Fisher, E. M., Ensari, I., Font, M., Harrington, A., Taromino, C., . . . Rodriguez, C. (2013). Association of screen time use and language development in hispanic toddlers: A cross-sectional and longitudinal study. *Clinical Pediatrics, 52*(9), 857-865. doi:10.1177/0009922813492881

Edwards, S. (2013). *Digital play in the early years: A contextual response to the problem of integrating technologies and play-based pedagogies in the early childhood curriculum* Routledge. doi:10.1080/1350293X.2013.789190

Edwards, S., & Cutter-Mackenzie, A. (2011). Environmentalising early childhood education curriculum through pedagogies of play. *Australasian Journal of Early Childhood, 36*(1), 51-59.

Hatzigianni, M., & Margetts, K. (2014). Parents' beliefs and evaluations of young children's computer use. *Australasian Journal of Early Childhood, 39*(4), 114-122.

Hesterman, S. (2013). Early childhood designs for multiliteracies learning. *Australian Journal of Language & Literacy, 36*(3), 158-168.

Howard, J., Miles, G. E., & Rees-Davies, L. (2012). Computer use within a play-based early years curriculum. *International Journal of Early Years Education, 20*(2), 175-189.

Hunkin, E. (2014). We're offering true play-based learning: Teacher perspectives on educational dis/continuity in the early years. *Australasian Journal of Early Childhood, 39*(2), 30-35.

Immanuel Baptist Church. Immanuel baptist church early childhood education center (IBC-ECE). Retrieved from http://www.ibcece.org/index.php

Katz-Buonincontro, J., & Foster, A. (2013). Integrating the visual arts back into the classroom with mobile applications: Teaching beyond the 'click and view' approach. *Journal of Digital Learning in Teacher Education (International Society for Technology in Education), 30*(2), 52-59.

Kentucky Department of Education. (June 2013). Kentucky core academic standards. Retrieved from http://education.ky.gov/curriculum/docs/pages/kentucky-core-academic-standards---new.aspx

Kentucky Governor's Office of Early Childhood. (2015). The research on screen time. Retrieved from http://issuu.com/kidsnow/docs/the_research_on_screen_time?e=8827074/11036439

Kjällander, S., & Moinian, F. (2014). Digital tablets and applications in preschool - preschoolers' creative transformation of didactic design. *Designs for Learning, 7*(1), 10-33. doi:10.2478/dfl-2014-0009

Lentz, C. L., Seo, K. K., & Gruner, B. (2014). Revisiting the early use of technology: A critical shift from "how young is too young?" to "how much is 'just right'?". *Dimensions of Early Childhood, 42*(1), 15-23.

Massaro, D. W. '. (2012). Acquiring literacy naturally: Behavioral science and technology could empower preschool children to learn to read naturally without instruction. *American Scientist,* (4), 324.

Maynard, T., & Chicken, S. (2010). Through a different lens: Exploring reggio emilia in a welsh context. *Early Years: An International Journal of Research and Development, 30*(1), 29-39.

McLean, K. (2013). Literacy and technology in the early years of education: Looking to the familiar to inform educator practice. *Australasian Journal of Early Childhood, 38*(4), 30-41.

Morgan, A. (2010). Interactive whiteboards, interactivity and play in the classroom with children aged three to seven years. *European Early Childhood Education Research Journal, 18*(1), 93-104. doi:10.1080/13502930903520082

Reynolds, E., Stagnitti, K., & Kidd, E. (2011). Play, language and social skills of children attending a play-based curriculum school and a traditionally structured classroom curriculum school in low socioeconomic areas. *Australasian Journal of Early Childhood, 36*(4), 120-130.

Rodrigues, P., & Bidarra, J. (2014). Transmedia storytelling and the creation of a converging space of educational practices. *International Journal of Emerging Technologies in Learning, 9*(6), 42-48. doi:10.3991/ijet.v9i6.4134

Rosin, H. (2013). The touch-screen generation. *Atlantic, 311*(3), 56-65.

Schmidt, M. E., Haines, J., O'Brien, A., McDonald, J., Price, S., Sherry, B., & Taveras, E. M. (2012). Systematic review of effective strategies for reducing screen time among young children. *Obesity (Silver Spring, Md.), 20*(7), 1338-1354. doi:10.1038/oby.2011.348

Screen time: A guide for parents. (2014). *Brown University Child & Adolescent Behavior Letter, 30*, 1-2.

Siu-man Wong, Wang, Z., & Cheng, D. (2010). A play-based curriculum: Hong kong children's perception of play and non-play. *International Journal of Learning, 17*(10), 165-180.

Sweetser, P., Johnson, D., Ozdowska, A., & Wyeth, P. (2012). Active versus passive screen time for young children. *Australasian Journal of Early Childhood, 37*(4), 94-98.

Thomas, L., Warren, E., & de Vries, E. (2011). Play-based learning and intentional teaching in early childhood contexts. *Australasian Journal of Early Childhood, 36*(4), 69-75.

Veldhuis, L., van Grieken, A., Renders, C. M., HiraSing, R. A., & Raat, H. (2014). Parenting style, the home environment, and screen time of 5-year-old children; the 'Be active, eat right' study. *Plos One, 9*(2), 1-9. doi:10.1371/journal.pone.0088486

Yelland, N. (2011). Reconceptualising play and learning in the lives of young children. *Australasian Journal of Early Childhood, 36*(2), 4-12.

Appendix A- Permission Letter

IBC
Early Childhood
Education

3200 Tates Creek Road
Lexington, Kentucky 40502
Telephone: (859)685-3237
Fax: (859)269-4035
www.ibcece.org

March 13, 2015

To Whom It May Concern:

Dana Anderkin has permission to observe and survey the Immanuel Baptist Church Early Childhood Education (IBC ECE) Center classrooms in order to equip Dana with the proper research to complete her thesis on play-based pedagogy and technology integration in the preschool classroom.

I personally look forward to Mrs. Anderkin's findings and how we can implement her research to better the IBC ECE.

If you need further information, please do not hesitate to contact myself, Bethany Potter, by telephone, (859)685-3202 or email, bethp@ibc-lex.org.

Sincerely,

Bethany Potter

Bethany Potter
Director
Immanuel Baptist Church
Early Childhood Education Center

Appendix B- Survey Cover Letter

Dana Anderkin
913 Sunny Slope Trace
Lexington, KY 40514
anderkin@cedarville.edu

April 7, 2015

Dear IBC-ECE Teachers and Staff,

My name is Dana Anderkin and I am in the process of conducting a research project in order to fulfill the requirements for completing my Master's of Education degree. I have been working closely with your director, Beth Potter, to address an educational need at IBC-ECE. This semester I have been investigating the educational philosophy of play-based pedagogy and the role that technology plays within this learning and teaching style. As an educator, I'm sure you are aware of the debate over technology use in the preschool classroom as well as questions of potential benefits and/or possible dangers. As a parent of a child at IBC-ECE, I too echo these same questions and concerns but also desire to know more about what research deems as developmentally appropriate practices for school and home use.

The purpose of my study within your school is to clearly define play-based pedagogy and determine what place technology has within the play-based learning and teaching environment. As a result of my study, I will use the information gained from my research to develop and create a document that clearly states and outlines the technology stance of IBC-ECE. This document will be used to help guide parents in their decisions regarding enrollment of their child in the preschool program at IBC.

This study is not possible without your participation! Attached you will find a voluntary survey which may be submitted anonymously if you choose. The survey consists of open-ended questions designed to allow you to share your personal opinions and beliefs regarding the concept of play within the preschool learning environment as well as technology use for preschoolers. I appreciate you taking the time to complete this survey and I thank you in advance for your participation. The higher participation and number of respondents, the more accurate the overall picture we will have regarding the beliefs, values, and opinions of IBC-ECE teachers and staff and the use of technology in the classroom.

Thank you so much for your willingness to participate! As an expression of my thanks, I would like to provide you with a gift. **Surveys are due by FRIDAY, APRIL 10. Please place completed surveys in the unmarked envelope and return to the basket labeled, "Completed Technology Surveys", located in Sharon Wall's office. You will receive your gift upon completion.**

Thank you,
Dana Anderkin

Appendix C- Survey

Play-Based Pedagogy and Technology Integration in Preschool Curriculum

1. Which teaching style and/or philosophy do you most closely align yourself with?
    - Traditional
    - Play-based
    - Multi-age
    - Developmentally appropriate
    - Other: _____

2. What are your feelings and opinions regarding technology integration at the preschool level? Please explain.

3. How would you define play-based learning in your own words?

4. What is the student's role in a play-based learning environment? Please explain.

5. What is the teacher's role in a play-based learning environment? Please explain.

6. In your personal opinion, what is the purpose of education?

7. What role should technology play in your instruction, if any? Please explain your reasoning.

8. What tools and/or resources do you need to feel equipped to implement technology in your classroom?

9. Can you think of some examples of using technology *actively* and *intentionally* for the purposes of enhancing and extending student learning?

10. Based on your experiences and interactions, what are parents' expectations regarding technology use in the classroom? Please explain.

11. Does play-based learning and technology use *compliment* or *oppose* each other? Please explain your reasons.

Questions to be completed about you.

12. Current job title at IBC-ECE:
    - Teacher
    - Assistant teacher
    - Staff
    - Administrator
    - Other: _____

13. Highest educational level completed:
    - High school
    - Associate's degree
    - Bachelor's degree
    - Master's degree

- Other: _____

14. Current role at IBC-ECE:
    - 3 yr. old teacher
    - 4 yr. old teacher
    - 5 yr. old teacher
    - Staff/administration

15. How much teaching experience have you had in early childhood education settings?
    - Less than 1 yr.
    - 1-5 yrs.
    - 6-10 yrs.
    - 11-15 yrs.
    - More than 15 yrs.

16. In the past year, how many professional development hours have you completed? _____

17. Is there anything that you would like to add for us to think about?

THANK YOU FOR COMPLETING THIS SURVEY! PLEASE RETURN COMPLETED SURVEYS TO SHARON WALL'S OFFICE IN THE ATTACHED, UNMARKED ENVELOPE BY **FRIDAY, APRIL 10TH**. AS A THANK YOU FOR YOUR PARTICIPATION, YOU WILL RECEIVE A GIFT UPON SUBMISSION. THANK YOU!

Appendix D- Resource for IBC-ECE

Play-Based Learning

Play-based learning has a strong research-based history and is recognized as playing a vital role in the young child's development. Play is defined as providing opportunities for children to learn through discovery, creativity, improvisation, and imagination. The ultimate goal of play-based learning is to provide quality, contextualized learning opportunities for every student. Play provides meaningful context by interacting with real-world topics and scenarios through pretend situations.

Student-Role

Learning through play is a child-centered approach to learning that encourages:

- Self-discovery
- Active engagement
- Student-initiation
- Creativity
- Goal-directed motivation
- Socialization
- Freedom
- Student choice

Teacher-Role

The teacher is an intentional and active guide, a facilitator who provides guidance and remains responsive to children's interests. Teachers provide the materials for play and carefully plan environments which best encourage a child's natural curiosity and desire to learn and explore their environments. Teachers provide context for the play and real-world connections that allow play to be extended to quality, meaningful learning for the child.

Technology

Technology use within the preschool setting can be effective for instruction when used *appropriately*, *intentionally, and actively*. A balanced approach that considers the child's total amount of screen time in one day is crucial. Active screen time should be viewed differently than passive screen time. Our current views of technology are tied to the idea of consumption. When we change our mindset and view technology as another tool to use to enhance student learning, it becomes very powerful in engaging students and another way for students to express their creativity.

How students use technology is important. Technology should never take away from the child's interaction with the natural world they live in. The key to effective technology integration is to provide vital sensory experiences, which can be

combined with mediums of technology to create a rich multimodal experience, combining and blending the traditional with the contemporary.

Examples of passive screen time and technology use:

- Watching a DVD or television show
- Some educational games or apps that limit interactivity

Examples of active screen time and technology use:

- Using digital photography on a nature walk
- Students create a multimodal podcast, which promotes language development and communication skills

Tools That Provide a Catalyst to Extend the Learning Opportunity

Touch technology- provides opportunities for whole-group instruction, supervised small groups, and independent work. Previously, the barrier of a keyboard and mouse inhibited preschool children from exploring and interacting with technology.

Video- record a child's activity such as outdoor play or a physical challenge in gym class. The content can later be shared and viewed while children celebrate their physical movement and skill development. A digital portfolio of movement activities to share with parents is a tool for tracking progress and growth. *GoPro* is an easy-to-use camera for preschoolers to record the world from their own perspective.

Digital photography- children may use digital photography on a nature walk to take pictures of plants and animals encountered. Blending traditional activities such as a nature walk with the use of technology can augment and extend the learning experience for the child.

Interactive whiteboard- supports teaching and learning through interactivity, collaborative group work, accessibility, and recordability.

E-books and e-readers- supports emergent literacy in young learners, producing gains in phonological awareness, language development, vocabulary, and concepts about print.

Class website- a forum for teachers and parents to share class information, updates, student photos, progress, and calendar information. This sharing of information could replace the monthly paper newsletters sent home in folders.

Social media- when used with caution can provide opportunities for sharing information, photos, research surveys and opportunities for professional learning.

Podcast- this is a method for children to create digital stories and share their experiences through audio recordings. Children narrate and share their own playful explorations at a zoo or a recounting of play at a center.

Digital projector- is a collaborative way to share visuals, student accomplishments, digital files, examples of student work, etc.

Programs and Software

PictoPal- provides students with opportunities to produce authentic writings through a combination of clip art and print, supporting children's writing in a social, play-based environment.

VoiceThread- allows communications between individuals and groups at a distance, providing opportunities for discussion between preschoolers and other groups in multimodal approaches such as audio comments of digital snapshots.

Building Blocks- interactive math tool that provides opportunities for manipulation of geometric shapes.

YouTube- clips used intentionally and appropriately, such as a children's block construction, can trigger new or different play options for children.

Skype- is a tool where teachers and students can be connected to various speakers and early learning environments locally, nationally, and globally.

Geocaching- is a real-world scavenger hunt or "hide and seek" game. Teaches about maps, locations, and visual/spatial perceptions. This could be used as a fun field-day activity. https://www.geocaching.com/play

Common Sense Media and *Children's Technology Review*- both provide summaries of media content, including touch-screen apps and video games.
www.commonsensemedia.org
http://childrenstech.com

Active Key Words

When evaluating technology: Does it invite active utilization or passive consumption? Key words to consider:

Play	Engage	Express
Create	Reflect	Support
Develop	Understand	Discuss
Foster	Produce	Think
Collaborate	Experience	
Innovate		

References

American Academy of Pediatrics. (October 2013). Children, adolescents, and the media. Retrieved from http://pediatrics.aappublications.org/content/132/5/958.full.pdf+html

An, H., Morgenlander, M., & Seplocha, H. (2014). Children's gadgets: Smartphones and tablets. *Exchange (19460406),* (219), 65-68.

Dietze, B., & Kashin, D. (2013). Shifting views: Exploring the potential for technology integration in early childhood education programs. *Canadian Journal of Learning & Technology, 39*(4), 1-12.

Edwards, S. (2013). *Digital play in the early years: A contextual response to the problem of integrating technologies and play-based pedagogies in the early childhood curriculum* Routledge. doi:10.1080/1350293X.2013.789190

Edwards, S., & Cutter-Mackenzie, A. (2011). Environmentalising early childhood education curriculum through pedagogies of play. *Australasian Journal of Early Childhood, 36*(1), 51-59.

Katz-Buonincontro, J., & Foster, A. (2013). Integrating the visual arts back into the classroom with mobile applications: Teaching beyond the 'click and view' approach. *Journal of Digital Learning in Teacher Education (International Society for Technology in Education), 30*(2), 52-59.

Lentz, C. L., Seo, K. K., & Gruner, B. (2014). Revisiting the early use of technology: A critical shift from "how young is too young?" to "how much is 'just right'?". *Dimensions of Early Childhood, 42*(1), 15-23.

McLean, K. (2013). Literacy and technology in the early years of education: Looking to the familiar to inform educator practice. *Australasian Journal of Early Childhood, 38*(4), 30-41.

Morgan, A. (2010). Interactive whiteboards, interactivity and play in the classroom with children aged three to seven years. *European Early Childhood Education Research Journal, 18*(1), 93-104. doi:10.1080/13502930903520082

Reynolds, E., Stagnitti, K., & Kidd, E. (2011). Play, language and social skills of children attending a play-based curriculum school and a traditionally structured classroom curriculum school in low socioeconomic areas. *Australasian Journal of Early Childhood, 36*(4), 120-130.

Rodrigues, P., & Bidarra, J. (2014). Transmedia storytelling and the creation of a converging space of educational practices. *International Journal of Emerging Technologies in Learning, 9*(6), 42-48. doi:10.3991/ijet.v9i6.4134

Rosin, H. (2013). The touch-screen generation. *Atlantic, 311*(3), 56-65.

Siu-man Wong, Wang, Z., & Cheng, D. (2010). A play-based curriculum: Hong kong children's perception of play and non-play. *International Journal of Learning, 17*(10), 165-180.

Sweetser, P., Johnson, D., Ozdowska, A., & Wyeth, P. (2012). Active versus passive screen time for young children. *Australasian Journal of Early Childhood, 37*(4), 94-98.

Thomas, L., Warren, E., & de Vries, E. (2011). Play-based learning and intentional teaching in early childhood contexts. *Australasian Journal of Early Childhood, 36*(4), 69-75.

Yelland, N. (2011). Reconceptualising play and learning in the lives of young children. *Australasian Journal of Early Childhood, 36*(2), 4-12.